

**Facultad de Ciencias Económicas y Empresariales**

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**DOBLE GRADO INTERNACIONAL EN ADMINISTRACIÓN  
Y DIRECCIÓN DE EMPRESAS Y ECONOMÍA**

**CERTAINTIES AND UNCERTAINTIES AROUND THE BREXIT**

**Álvaro Guillén Blanco**

**DIRECTOR**

**María del Mar Rubio Varas**

**Pamplona-Iruña**

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## **ABSTRACT**

The Brexit has been one of the most important events last year due to its global implications. It supposed a hard hit to the European Union and a novel object of analysis due to its economic disintegration nature. This process has also been surrounded of interested propaganda and has lacked formal economic consensus. The purpose of this paper is to extract clear economic facts on trade, foreign direct investment and immigration in order to obtain objective conclusions of what can happen from now. In order to do that, integration theory is used to later assume a pure disintegration process will have inverse effects. After this, different new possible trade scenarios are put on the table and the most convenient for the UK are analysed to obtain the final conclusion; the more control of immigration, the less beneficial free trade agreements the UK will be able to achieve.

## **KEY WORDS**

Tariff barriers, Non-tariff barriers (NTBs), Trade, Immigration, Foreign direct investment (FDI).

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## 1. INTRODUCTION

Even though it may be too ambitious, the scope of this paper is to extract clear economic conclusions about the exit process of the UK out of the EU, commonly called Brexit. Although the focus of the analysis is on the economic fields of trade, immigration and foreign direct investment (in a lower extent) it is very important not to forget the socio-political context that surrounds this topic. It is vital to understand this process would have never happened fifteen years ago and why it is happening now.

As many other socio-political conflicts throughout history, we can find the cause of the Brexit in the economy. Once the financial crisis started almost ten years ago, we have seen how the mentality of the people also started changing all around the western world. People lived in a very comfortable and stable welfare state that seemed unchangeable. But many things were changing although the majority of the developed world population did not notice. A huge financial bubble was going to explode in the US and no one could expect its social outcomes (like in the happy 20s).

Declining salaries combined with deterioration of the working conditions and increasing unemployment made expectations of the people fall drastically. Add this to the fact that governments have proven unable to boost the economy by themselves (given that “country isolated” policies are not effective in a global market) and you have the perfect scenario for populisms and radicalisms to appear and have a strong impact on population.

Since Brexit is very recent, there is lack of empirical studies on the topic. Moreover there is not a global disintegration theory since previous studies have just studied integrating processes (such as the EU integration). Instead, there are separated studies analysing concrete fields of the British economy. Given that some studies affirm the Brexit is going to create benefits for the UK and some state it is going to decrease economic welfare, it is not easy to form a clear conclusion around it just by looking at them separately.

In order to rely on facts and not to fall in conclusions not backed with data, this paper firstly analyses the effects integration has had in the EU’s trade and investment in order to check if integration benefits have outweighed its costs. Then it is assumed disintegration will have opposite effects on average and this intuition is checked with actual studies on the possible impact of Brexit on trade, finding in general, support with this idea.

After this, different trade possibilities for the UK are analysed finding there is a trade-off between full single market access and full immigration control.

Finally implications of increased immigration control and the subsequent immigration reduction are studied based on previous studies on immigration to see if it effectively damages the British economy and if reducing it would entail some benefits.

## 2. CURRENT SITUATION IN THE UK

The first main point of the index of the White Paper on Brexit, *The United Kingdom's exit from and new partnership with the European Union*, (2017) quotes “Providing certainty and clarity” and this is not by chance. The main worry of the government nowadays is to solve the turbulent political and economic situation the UK is living. If this plight lasts too much, Great Britain will be in real trouble.

### 2.1 Economic situation

Looking at the economy the UK is going to suffer another long run shock (apart from the one it is suffering now).

The actual shock is derived from the result of the referendum and it is affecting the financial sector.

Figure 1: USD / GBP quotations



Source: <http://www.finanzas.com/divisas/gbp-usd/>

Figure 2: GBP / Euro quotations



Source: <http://www.finanzas.com/divisas/eur-gbp/>

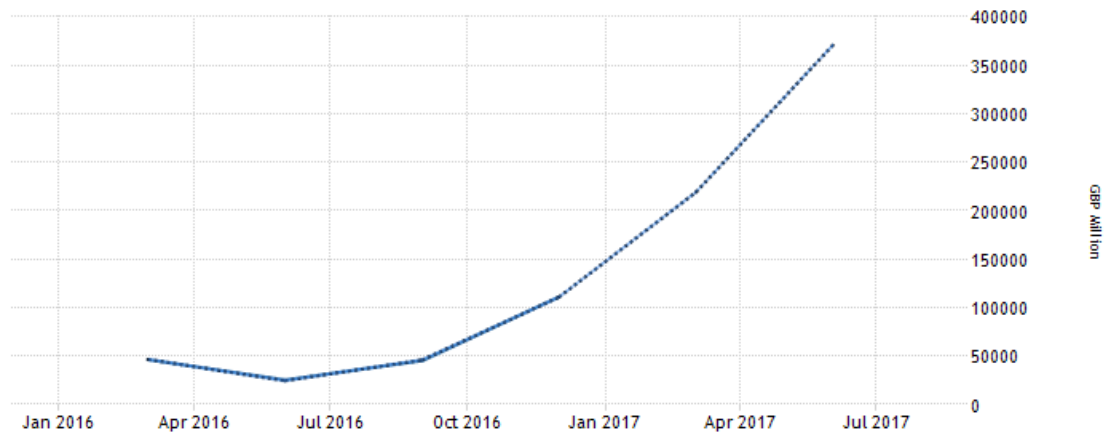
Figures 1 and 2 show how the GBP collapses after the referendum date (June the 23<sup>rd</sup>).

This shock was predictable given the uncertainty situation the UK is living today. Investors do not like uncertainty. That is why investment, and more concretely, FDI is likely to decrease. This would be so harmful for the UK current account (which has actually a deficit of 4.5%).

Figure 3 shows the evolution of the UK net FDI. This investment is composed by two flows. Outward investment flows, coming from the UK to the rest of the world, and inward investment flows from the rest of the world (to the UK). The first flows are considered assets while the second are considered liabilities. Net FDI flows are the composition of outward FDI minus inward FDI.

Net FDI increases can be due to an increase of outward flows, a decrease of inward flows or both effects. Brexit effects on investment will be discussed later but for the moment, it is important to have in mind the process has a strong effect on investment.

Figure 3: UK Net Foreign Direct Investment



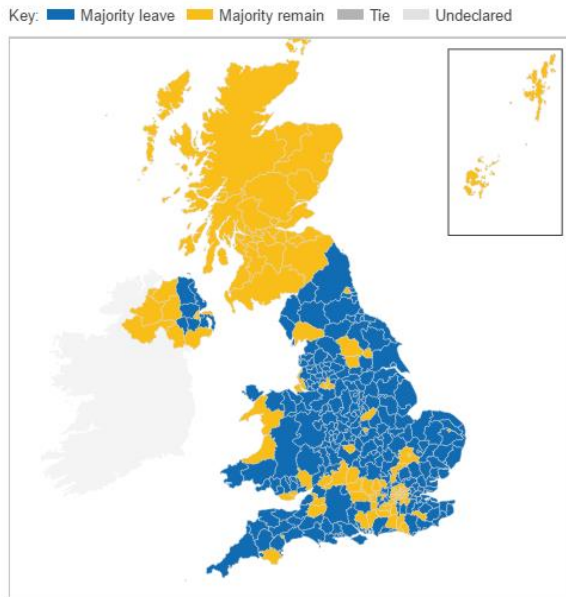
Source: <http://www.tradingeconomics.com/united-kingdom/foreign-direct-investment/forecast>

The other long run shock is coming and it will depend on the result of negotiations between the UK and the EU. The best picture for the UK is maintaining the access to the Common European market while having complete control of immigration. This situation is hard to imagine although many Tory politicians affirm the UK can achieve it. The problem is they cannot negotiate anything till they abandon the EU so everything said till that day is just a declaration of intentions. In the case GB would not be able to negotiate a beneficial trade agreement for them they would have to follow WTO rules and that would be the worst situation. The financial sector would be the one injured the most and the City of London would probably be dethroned as the main financial centre of the world (since the UK would lose the free service trade benefit).

## 2.2 Political situation

About 72% of the population in the UK voted in the Brexit referendum according to the BBC ("EU Referendum Results - BBC News", 2017). Only the 52% of them wanted to leave the EU whereas the 48% voted to stay. The “leave” was dominant just in small population regions of England but big cities of England and the whole Northern Ireland and Scotland voted “remain”.

Figure 4: Brexit referendum result by region



Source: <http://www.bbc.com/news/uk-politics-36616028>

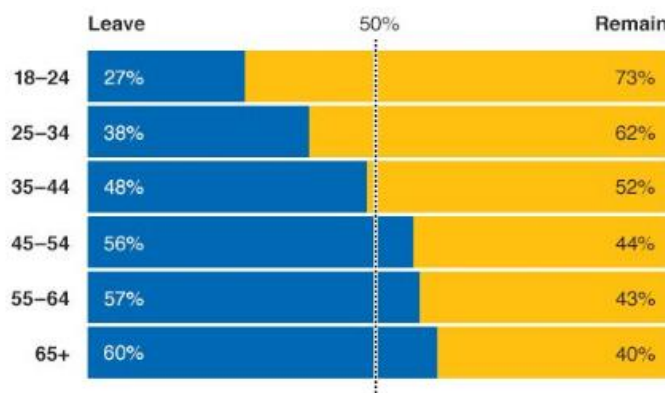
Although this fact seems unimportant it hides a deep division problem in the UK. Figure 4 shows the two first social trends.

Firstly, Scotland has historically been a pro-independence region since it belongs to the UK. If added to this problem is the one of the disagreement on being part of the Single Market, differences and tensions between England and Scotland will increase.

Secondly, the referendum has revealed two ways of thinking in the same country (the city vs the countryside way of thinking).

Thirdly, younger people (from 18 to 49) voted remain while elder people (some of them not working age population) voted exit as Figure 5 shows.

Figure 5: How different age groups voted



Source: <http://www.bbc.com/news/uk-politics-36616028>



This brings a very unstable situation since in some years we could see Scotland demanding to exit and many people asking for another referendum that might bring a “comeback” result.

With these facts been discussed, it is too daring for the government to pretend it can provide certainty and clarity to the situation. They are unable to provide a certain level of clarity since the situation does not depend just on them (the UK government) but on many parts.

### **3 TRADE POLICY**

Trade policy is one of the main worries, both for the UK government and the EU institutions, around Brexit. Depending on what trade policy the UK negotiates (together with the immigration policy) with the EU and countries abroad, it will obtain better or worse political relationships in the long run.

It is also important not to forget that changing trade policy gives important changes to the economy of a country. Given that studies on disintegration have not been developed until now, the focus is going to be the other way around. Economic effects of integration are going to be explained and analysed to see if the positive ones outweigh the negative.

After that analysis, it is assumed the same effects but with opposite sign are going to appear due to disintegration. All the integration effects quoted in this point have been summarized from chapter five of the book Jordán Galduf, Tamarit Escalona, & Antuñano Maruri, (2013), *Economía de la Unión Europea*. Additional information used is referenced in each concrete part based on it.

#### **3.1 Static effects of Integration theory**

It is important to say a methodical, structured and trustful economic integration theory does not exist yet. This is due to the huge quantity of interrelated fields that exist in economy having different effects when two countries integrate. Instead there are partial studies focused on determined fields. The most famous ones are those focused on trade liberalization and financial and monetary integration.

From 1973 till now the UK has been part of a common economic area. The process was tough but it finally came with results. One of them was the customs union. A customs

union basically means no tariffs for trade inside the common custom area and a common external tariff to protect from countries outside this custom area.

### 3.1.1 *Tariff barriers*

Eliminating tariff barriers between partners and adopting a common external tariff triggers a set of different short run and long run effects. The ones studied the most (due to its simplicity) have been the two static effects trade creation and trade diversion. They are called static since invariable factor endowment is assumed.

Trade creation causes an increase in welfare given that Home country will specialize in producing its most competitive products and will stop producing its less competitive products to buy them to another country inside the customs union (the EU in this case) that produces them more efficiently (and cheaper).

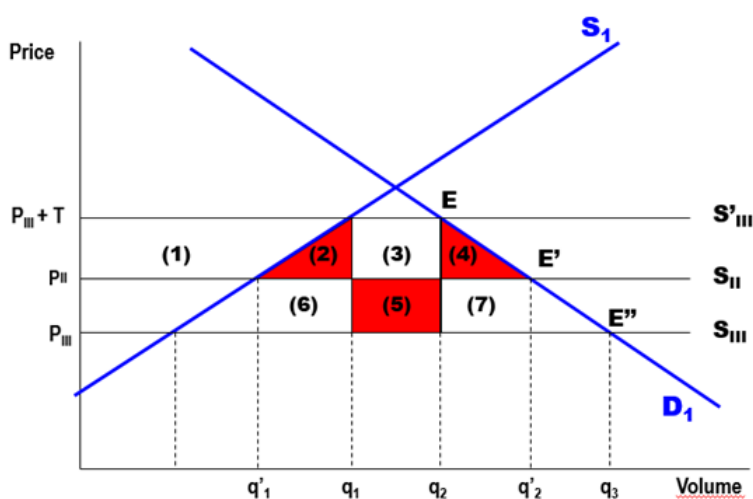
Trade diversion will cause a negative welfare effect since there is going to be an import substitution between more competitive non-customs union country products (having higher price only due to tariffs) and a product from a less competitive country belonging to the customs union (with no tariffs).

Depending on the predominant effect there is going to be an increase or a decrease on welfare. The first one studying these effects was Jacob Viner (1950). To do it he posed several assumptions:

- There are three countries, one good and two productive factors. Country one (C1) is the most inefficient producing good X. Country three (C3) being the rest of the world is the most efficient producing that good. Country two (C2) being the custom partner of country one, has an intermediate efficiency. Its respective prices for the product are  $P_{iii} < P_{ii} < P_i$ .
- Perfect competition: price = unitary cost.
- Factors of production are homogeneous and can be substituted (it does not take into account resource reassignment).
- Perfect factor mobility inside the country but immobile between countries.
- Constant return to scale (it is not possible to develop economies of scale in a bigger market).
- Government's unique intervention is the one eliminating or imposing tariffs.

- No transport costs and non-tariff barriers.
- Technic efficiency (resources and production factors are optimally used).
- Perfect compensation between sectors inside the same country (it does not take into account adjustment costs).
- Country 1 is small, so to say, his import's demand cannot affect world prices, so terms of trade are unchanged. This implies supply curves of good X are totally elastic (horizontal) for countries 2 and 3.

Figure 6: Static effects of creating a custom union



Source: Jordán Galduf, J., Tamarit Escalona, C., & Antuñano Maruri, I. (2013). *Economía de la Unión Europea* (1st ed., p. 161). Cizur Menor (Navarra): Civitas.

In Figure 6 trade creation and trade diversion are analysed at two levels. First, variation of trade flows due to change in relative prices are showed on the horizontal axis. Second, numerated areas show welfare effects on C1.

Initial equilibrium is on point E. Country 1 imposes a tariff of T on imports of good X. Given that country 3 is the most efficient producing good X,  $P_{ii}+T > P_{iii}+T$ . This makes country 3 the unique exporter of the good to country 1, having the supply curve  $S'_{iii}$  and supplying  $q_1q_2$ . Price will be the one in country 3 plus the tariff ( $P_{iii}+T$ ).

Forming a customs union between country 1 and 2 will change the equilibrium point. New equilibrium will be on point E'.

If the common outside tariff is equal than the previous tariff applied in country 1 (T), the final price of country 2 will be lower than the final price of country 3 plus such common external tariff ( $P_{ii} < P_{iii}+T$ ). Now the relevant supply curve will be  $S_{ii}$ , being country 2 the

unique supplier of good X, supplying  $q^1q^2$ .

Compared to the previous situation, the price is lower in country 1. This makes home producers produce less. More concretely the reduction of production goes from  $q_1$  to  $q^1$ .

This reduction of production in home is substituted for imports from country 2. This is called the production effect, and is part of the trade creation one.

The reduction in price will also increase demand from  $q_2$  to  $q^2$ . This demand will be supplied exclusively by imports of the partner country, producing a further increase on trade. This is the consumption effect, also part of trade creation.

Finally there is a trade diversion effect, a substitution of imports from country 3 ( $q_1q_2$  at a cost of  $P_{iii}$ ) to country 2, at a higher cost. There is an efficiency loss.

With respect to welfare effects for country 1, there are different effects:

Increase in consumer surplus due to the reduction in price (the sum of areas (1)+(2)+(3)+(4)).

Decrease in producer surplus: area (1).

Decrease in public income due to the elimination of tariffs: area (3)+(5).

Net benefits are only represented in areas (2) and (4). Area (2) corresponds to the production effect. There is an increase in efficiency since country 1 (being inefficient) stops producing good X in favour of country 2.

Area (4) represents the increase in consumer surplus that comes from the consumption effect due to the reduction in price.

These net benefits must be compared with net losses coming from trade diversion. Previous imports from country 3, generated tariff incomes of (3)+(5). Although these incomes are not perceived anymore, area (3) does not represent a loss since it is compensated with the reduction in price for consumers in country 1<sup>1</sup>. But area (5) is not compensated with any gain. Instead, it is part of the price demanded for country 2<sup>2</sup>, so the area represents a resource transfer to the trade partner.

Efficiency improvement will depend on the magnitude of those effects. If trade creation is higher than trade diversion ( $(2)+(4)>(5)$ ), efficiency will improve.

Empiric evidence in the case of countries of the EU proves trade creation effects clearly

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<sup>1</sup> So to say the difference between  $P_{iii}+T$  and  $P_{ii}$ .

<sup>2</sup> More concretely it is the difference between  $P_{iii}$  and  $P_{ii}$ .

outweigh trade diversion effects (although evidence is less strong for agricultural products).

It is necessary to include another effect in this model. Depending on some factors, the customs union can positively influence its terms of trade. More concretely if the customs union is able to decrease external import demand, terms of trade of the customs union will improve. This will compensate efficiency losses from trade diversion.

Since terms of trade of an economic area are the total price of its exports divided by the total price of its imports ( $P_x/P_i$ ), a smaller volume of imports from third countries outside the customs union will push import's price down. This will happen if:

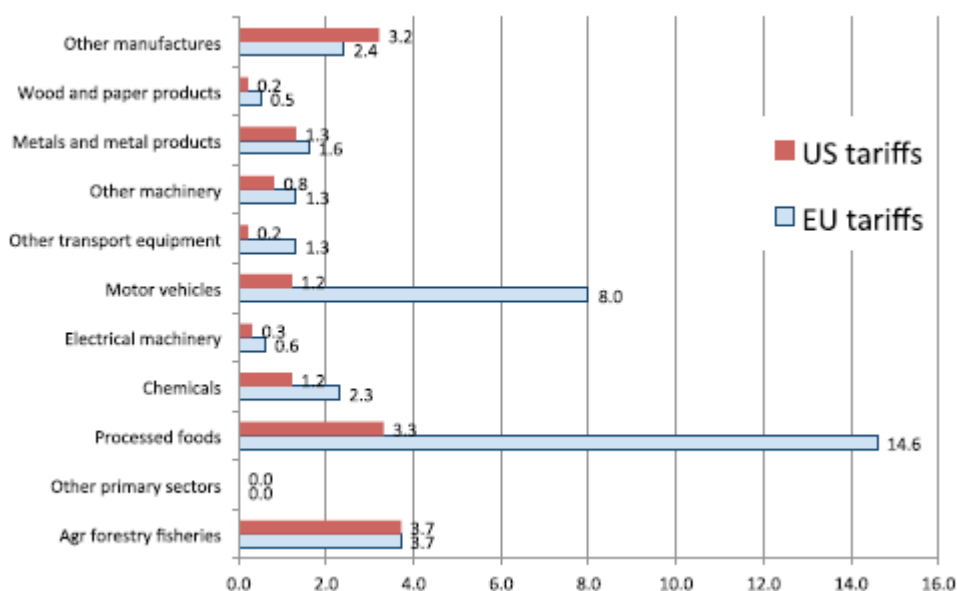
- a) The customs union is big
- b) The common external tariff is high
- c) Tariffs of third countries are low

With respect to point a), the bigger the customs union, the more it can improve terms of trade. The EU is considered big enough to affect import prices.

The two last points b) and c) need a further analysis. Theoretically the higher common external tariff the more terms of trade can be improved. Conversely, the lower tariffs from third countries are, the more gain for the customs union terms of trade (higher export prices can be applied).

It is true that EU tariffs are generally quite low, but here it is more useful to compare them with tariffs from another country. Since the US is the main EU's export partner, it seems logical to compare both tariff levels. In the graph below, tariffs are divided by main sectors.

Figure 7: Trade Weighted Applied (MFN)<sup>1</sup> average tariff rates 2007



Source: [http://trade.ec.europa.eu/doclib/docs/2013/march/tradoc\\_150737.pdf](http://trade.ec.europa.eu/doclib/docs/2013/march/tradoc_150737.pdf) (pg. 14)

Total average of all sectors in Figure 7 is 1.54 for the US and 3.63 for the EU. This means the tariff level of the EU more than doubles that of its main commercial partner. Moreover, the UK's top ten exports, according to Workman (2017) analysis are:

- 1°) Machinery including computers: US\$60.3 billion (14.7% of total exports)
- 2°) Vehicles: \$51.7 billion (12.6%)
- 3°) Pharmaceuticals: \$32.6 billion (8%)
- 4°) Gems, precious metals: \$27.5 billion (6.7%)
- 5°) Electrical machinery, equipment: \$27.1 billion (6.6%)
- 6°) Mineral fuels including oil: \$26.2 billion (6.4%)
- 7°) Aircraft, spacecraft: \$20.7 billion (5.1%)
- 8°) Optical, technical, medical apparatus: \$17.2 billion (4.2%)
- 9°) Plastics, plastic articles: \$11.2 billion (2.7%)
- 10°) Organic chemicals: \$10.8 billion (2.6%)

Taking into account the second main UK export are vehicles and the EU's tariff of motor

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<sup>1</sup> Most Favoured Nation

vehicles is a little bit less than eight times the one of the US, it can be affirmed the UK benefits from terms of trade improvement given that the Common External Tariff is relatively high compared to the average US tariff level.<sup>1</sup>

### 3.1.2 Non-tariff barriers (NTB's)

The previous model only analysed the static effects (effects on allocative efficiency and terms of trade) which are the less strong ones.

Moreover, it does not take into account adjustment costs, which can vary a lot depending on the type of trade, that can be inter industry trade (trade of goods from different industries) or intra industry trade (trade of goods belonging to the same industry).

Adjustment costs for the first type of trade are much higher than adjustment costs for intra industry trade. This is logical since it is easier (and cheaper) for a firm to change production from trucks to cars than changing it from trucks to flowers.

The previous effects are not the only ones we find. There are a set of effects called “dynamic effects” that have stronger and longer impact on the economy of an integrated market. Note here that the analysis is expanded from a custom area to an integrated market. This is because of the existence of a different type of trade barriers called non-tariff barriers. A general classification of these barriers, according to Alan Deardorff (John W. Sweetland Professor of International Economics, Professor of Economics and Public Policy at the University of Michigan) is:

Table 1: Classification of non-tariff barriers (NTB's) to trade.

Type of policy	Purpose	Examples
Protectionist	Helping domestic firms at the expense of other countries	Import quotas, local content requirements, public procurement practices.
Assistance	Helping domestic firms without hurting other countries	Domestic subsidies, antidumping laws, industry bailouts.
Non-protectionist	Protecting society and environment	Licensing, packaging and labelling requirements, sanitary rules, food inspections...

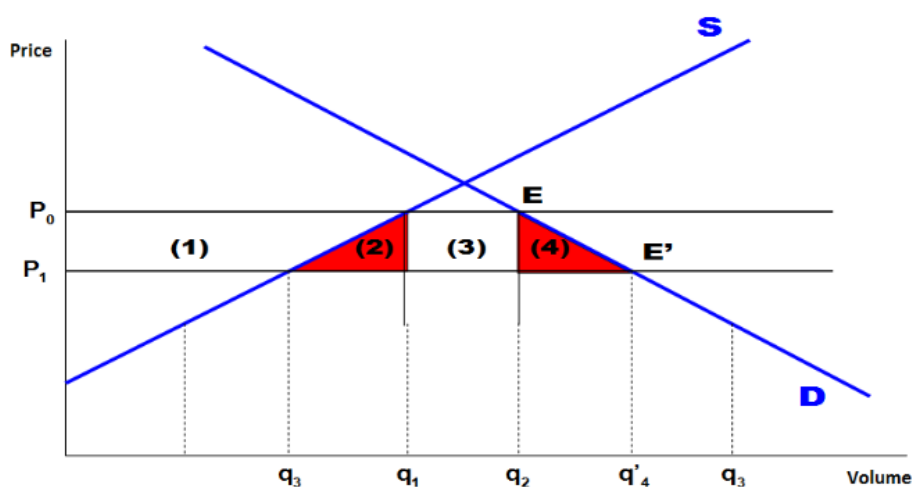
<sup>1</sup> Empiric analysis of the effects over the terms of trade of the European Community customs union with respect to the rest of the world was developed by Petith (1977) and supports obtained conclusions.

Source: [https://en.wikipedia.org/wiki/Non-tariff\\_barriers\\_to\\_trade](https://en.wikipedia.org/wiki/Non-tariff_barriers_to_trade) and own modifications.

The problem of these type of barriers is its complexity of measurement. More concretely, those barriers belonging to the non-protectionist group, are the hardest and most important ones to eliminate. These barriers are imposed looking for a social protection or improvement. Many of them were already imposed when forming the EU and standardizing them all around the unique market was a main priority. The UK took part on this process as well.

Standardizing regulations has many (and counteracting) effects, both static and dynamic and it is important to point out full integration benefits will not be reached if the market is not fully integrated (with the absence of tariff and non-tariff barriers to trade).

Figure 8: Static effects of the elimination of non-tariff barriers to trade



Source: Jordán Galduf, J., Tamarit Escalona, C., & Antuñano Maruri, I. (2013). *Economía de la Unión Europea* (1st ed., p. 170). Cizur Menor (Navarra): Civitas.

Static effects on welfare of removing non-tariff barriers are similar than those produced when tariffs are removed but higher, as Figure 8 shows. Since tariffs create costs but generate incomes too, getting rid of them could decrease welfare. In the case of non-tariff barriers, they do not generate an explicit income<sup>1</sup>. Total welfare gains would be higher (the sum of areas (2)+(4)+(5)) since the area of income from tariffs that was lost in the previous customs union static effects analysis (figure 6) is not lost here.

If this NTB's elimination is made inside a customs union, positive effects on welfare are even bigger due to two facts:

<sup>1</sup> Although NTB's can generate certain types of benefits. E.g. polluting regulations generate a benefit to the extent of the reduction of health and social costs.



There is a common external tariff. The decrease in import prices is not countered by a loss in tariff incomes (although this is not totally true since countries lose their right to impose the tariff level they desire in each sector).

Price reductions affect not only internationally tradable goods but all cost structure of production of the internal market.

Consequences for third countries are generally negative since trade diversion makes their export's volume decrease, pushing export price down and worsening their terms of trade. The only positive effect is standardized regulations in the integrated market make an easier adaptation to regulations to third countries firms, reducing their costs.

These static effects are derived from the elimination of tariffs and the standardization and harmonization of regulations to trade (non-tariff barriers). But a further analysis is needed to cover a set of long run effects harder to study but with a stronger impact. These are the so called dynamic effects and it was possible to study them thanks to the investigation of Helpman and Krugman (1985) on imperfect competition and international trade, which create a model (the Helpman-Krugman model) that introduces monopolistic competition in the assumptions.

### **3.2 Dynamic effects of Integration theory**

Dynamic effects of economic integration are more complex to measure as said before. Any mechanism emerged because of integration and with an incidence over potential production growth is considered a dynamic effect. These effects can be grouped into two main groups with respect to their transmission mechanisms (although these two groups are generally interrelated).

#### *3.2.1 Increase in market size*

The increase in market size enables firms to increase its production due to the increase in demand. This generates two complementary situations.

a) Creation of economies of scale and learning economies: those economies resulting in decreasing unit costs as production increases.

According to Corden (1972) it is necessary to introduce two more effects apart from those of trade creation and trade diversion. These effects are reduction in costs and trade

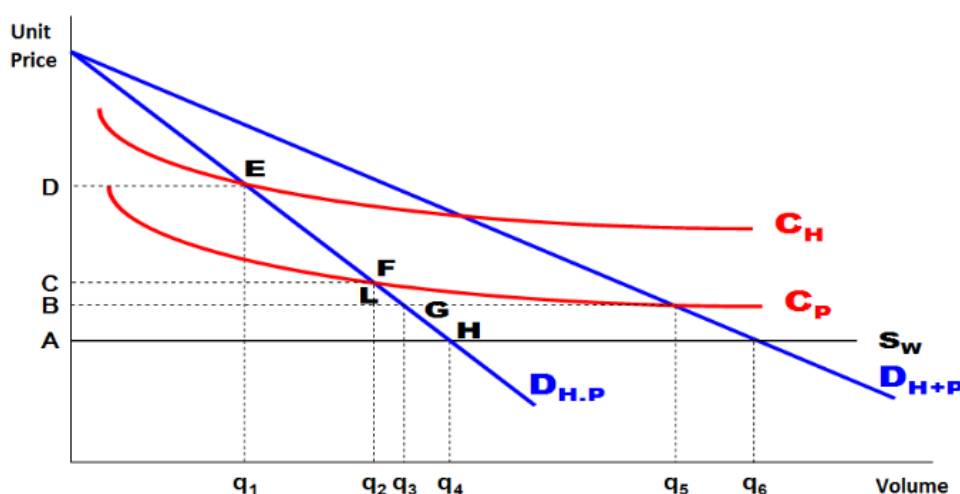
suppression.

The assumptions of the model are the two integrating countries are similar, with identical demand curves and with the existence of economies of scale. There is also a third external country. Country one is more efficient than country two. The external country is the most efficient one but with constant average costs (it has not economies of scale).

If country one captures all the production of the market, its average costs will decrease. Total costs of producing that good will also decrease for the whole union because of specialization.

If country two captures all the production instead, it will push the most efficient country (country one) production out and suppress trade since imports will be substituted by internal production.

Figure 9: Effects of creating a customs union with economies of scale



Source: Jordán Galduf, J., Tamarit Escalona, C., & Antuñano Maruri, I. (2013). *Economía de la Unión Europea* (1st ed., pg. 175). Cizur Menor (Navarra): Civitas.

Looking at Figure 9, it can be assumed that in free trade total consumption ( $C_P + C_H$ ) will be totally satisfied with imports from the rest of the world ( $S_w$ ), being the volume  $q_6$ , ( $q_4$  for each country).

Before the customs union, it is assumed each country puts tariffs in order to stimulate internal production and cover the whole internal consumption. For country P, the volume of consumption-production will be on point  $q_2$  whereas for country H it will be  $q_1$ . The tariffs levied would be represented by segments AC and AD respectively.

When forming a customs union, demand will increase ( $D_{P+H}$ ) and countries P and H will

impose a common external tariff represented on segment AB. Volume of production will be on point  $q_5$  at a price of B. Point  $q_3$  represents half the volume of  $q_5$ , so to say, the volume consumed by each country.

Country H will eliminate its production and will import from country P obtaining a gain on consumer surplus represented on area BDEG. There is a trade creation effect. Country P will also improve its welfare since it will also increase its consumer surplus (area BCFG) due to the reduction in price from C to B. The reduction in costs is represented by area BCFL.

The problem comes when the assumption of identical demand curves in both countries is eliminated. Taking the previous example, if the demand curve of country H is higher than that of country P, although it is more inefficient it could absorb the whole production since it could produce more efficiently in a first place (although country P had a higher economies of scale potential). The result is undetermined but the important idea of this model is welfare gains under economies of scale are bigger than welfare gains under the absence of them.

Moreover the concept of “learning economies” or “experience economies” complements this idea. These kind of economies do not depend on the volume produced but on the accumulation of its production. The more they produce the more they learn and the more efficiently they can produce. Implementing these economies implies a fast production grow. This is easier if cooperation and mutual learning between complementary enterprises is facilitated, which turns easier with a proper integration.

#### b) Effects on investment and foreign direct investment (FDI)

The increase on market size plus the increasing competition creates the need of production investment and promotes mergers and acquisitions. The correct exploitation of economies of scale demands investment to restructure the productive process and to increase the firm size. Furthermore the increase in competition forces firms to look for new ways of reducing costs, which also needs investment. But not all effects of integration on investment are good. It also causes disinvestment since less competitive firms will disappear. Because of this it is necessary just to measure net investment.

There are serious measurement problems with this topic since investment is subject to more variables than those exposed on the integration process. To measure pure integration effects on investment it would be necessary to create a counterfactual universe, so to say, a similar situation with no integration process.

On the other hand there is FDI both between countries inside the common economic area (intra communitarian investment) and between a country inside with another country outside it (extra communitarian investment).

Intra communitarian investment causes two effects:

First, defensive FDI is reduced due to elimination of barriers to trade. This FDI is made to overpass existing trade barriers (a firm invest in another country in order to place another plant there and avoid increased costs). Since these barriers are very low, it does not need to make a defensive FDI.

Second, restructuration of the location of FDI to productive areas in those cases where trade creation change production location. In this case there is an increase in FDI.

With respect to extra communitarian FDI, it produces a clear increase on investment. First, in those sectors with high tariffs, a defensive FDI is found. Second, there is also an offensive FDI from non-communitarian countries since the increased market creates huge opportunities for multinationals that change their strategies to have a stronger impact on the region.

Empiric analysis has proved economic integration in Europe has boosted FDI (Brenton, Di Mauro, & Lücke, 1999).

In the first stage of integration (from the 60's to middle 80's) there was a clear predominance of extra communitarian FDI (from the USA and Japan) mainly concentrated in central countries of the old European Communities.<sup>1</sup>

In the second stage (from middle 80's) intra communitarian FDI has overpassed extra community investment and decentralized a little bit (although main FDI flows are still in central Europe).

### 3.2.2 *Increase in competition*

The liberalization of the market causes an increase in competition since once the market is open more firms have access to new markets in new countries. Imagine a monopoly situation in which two monopolistic firms of different countries have all the national market power due to its high national protection.

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<sup>1</sup> Yannopoulos (1992) calculates extra communitarian FDI supposed 2/3 of total FDI.

Of course these firms will face no competition inside their own market but one of these two firms (suppose they are competing in the same industry) should be at least a little bit more competitive than the other (maybe due to its national market size or a higher scarcity of resources that forces it to be more efficient).

Now, if these countries integrate each other these two monopolistic firms will compete between each other and that competition will provoke different effects.

- Reduction in the difference of prices between countries:

Once the markets are opened, most competitive firms find arbitrage possibilities (they buy at a low price in one market and sell at a higher price in another). This makes price distortion to be reduced.

In practice, price differences between European countries have been slightly reduced, although they are still high (about 22% standard deviation with respect to average EU price). But still, even inside the same country prices vary around regions so it is not realistic to think prices will fully converge.

Price differences can be explained due to costs of transport, non-tradable goods and services, consumer preferences for national products, differences in the cost of energy, different labour regulations, etc.

- Pressure on cost-price margins:

Given that the market is integrated, many internal production is going to be substituted for cheaper imports. If national producers want to remain in the market they must reduce their benefit margins at first, before they tend to improve their efficiency and try to reduce their production costs to be more competitive.

This relation between competition and price margins is widely supported by empiric evidence.

- Reduction of internal inefficiency:

Before integration it is assumed firms do not achieve their top efficiency, which tends to be true since competition is lower than in integration. Due to this lower competition firms do not optimize their inputs and they face redundant processes that do not generate any benefit, inefficient resource allocation and an exploitation under the production possibility frontier (in contrast with the traditional international trade theory that assumes efficient firms producing just on the PPF).

Increased competition generates incentives for enterprises to further improve efficiency by reducing unnecessary expenses.

- Increase in innovation:

This is the last contrasted dynamic effect of competition. Theoretically most competitive markets generate a stimulus to innovation since firms are forced to think about new ways of producing and commercialize to give the final client a better service. Moreover, proper positive integration measures promote firms' communitarian firm cooperation with the objective of avoiding production redundancies and splitting research and development expenses.

The problem of this affirmation is the high expenses research in innovation implies.

- On the one hand, competition is necessary to innovate. But innovation needs huge volumes of finance that are more accessible for monopolistic firms (since they can assume higher risks).
- On the other hand, a firm would not innovate if the expectation is that innovation is not going to increase its profitability. In order to do that firms need to feel they are going to be the only ones exploiting that advantage and that is easier being an oligopolistic/monopolistic firm.

The only solution to this is having a good patent system but still, it is harder in a high competitive market.

To sum up, several integration (static and dynamic) effects have been exposed to give a background of why European countries decided to start the EU deeper integration process. Some of them have been highly supported by empiric investigation, some of them have a thinner empiric base but it has been proved in economic expansion periods countries as a whole have grown a lot.

To this fact it is necessary to add all countries (and the UK even more) have been involved in an adaptation process to let these dynamic effects act in a higher extent. Going out after more than thirty years of adaptation will imply a new counter adaptation for the UK that can be devastating for their economy. It all depends on how they negotiate their different investment, immigration and trade possibilities.

In order to have a global view of the possible effects of disintegration, an equal but reverse effects impact is going to be assumed. This implies a fully protectionist situation for the UK. It is important to remark this situation is hardly realistic in the current global economy and the most probable outcome is going to be between a fully integrated UK and a protectionist UK.

Under this theoretical extreme situation, several effects would happen.

With respect to static effects, the first and most clear consequence is the increase in prices and costs due to tariff and non-tariff barriers increase. Internal production would increase at the expense of economic efficiency. Domestic firms would start producing more but at a higher cost than imported production.

The increase of tariffs would increase income for HM Treasury that could be used to counter the loss in efficiency, although based on the increase in welfare that integration caused, it can be said the loss in income was smaller than the efficiency gain derived from integration. So again assuming the effect would be the same but with opposite sign, it is logical to think income gain from tariffs would not be enough to counter the whole efficiency loss.

The increase of non-tariff barriers would increase both UK and EU costs of doing business between each other. If the UK starts adopting its own regulations, firms would have to adapt to new standards, making them less competitive. This would also hurt third country firms already established in the UK (looking at the particular case of the financial sector in the City of London, if those third country firms lose the financial passport they would be forced to reallocate their activities in another European country in order to be able to export their services).

Dynamic consequences do not look good either if a good agreement is not reached. The disintegration would reduce the market size for the EU and at a much higher extent for the UK. That would make more difficult for firms to take advantage of economies of scale.

FDI would probably decrease since many enterprises (mostly from the US and Japan) invested in the UK using it as a gate to the EU. Before Brexit it was a good country to invest since its stable economic and political situation, the language, business culture and more predominantly the full access to the Single Market.

This situation is different nowadays due to the huge uncertainty around Brexit, the inability of the British government to draw a clear strategy and the doubt of the future possibility of

easy access to the Single Market.

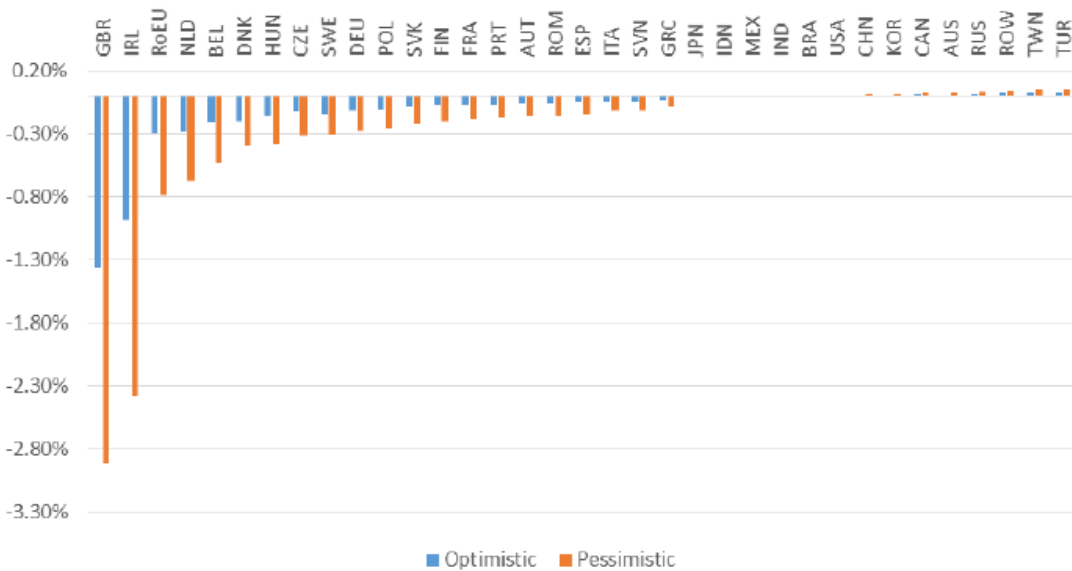
Finally, competition would be reduced if foreign companies start skipping the UK to reallocate their production outside. This could be good for small and medium size firms that would lower their pressure and would be able to increase their price margins.

But this situation is hard to maintain in the long run since the lower competition would increase domestic UK inefficiency. The research and development pace would be reduced compared to that of external countries that would create more competitive technologies and producing methods, would attract more investment and finally would be able to compete with domestic UK production (since their price would be cheaper even with the tariff increase).

Because of the absence of empiric evidence on disintegration, it is impossible to back these conclusions with real data. It is almost clear that the UK government will try to avoid the proposed situation and will try to obtain a favourable trade treaty. What is important here is not the amount but the direction of the disintegration effects on trade.

According to the Dhingra et al, (2016) calculations from the Centre for Economic Policy these are the results of two possible (optimistic and pessimistic) scenarios for Brexit.

Figure 10: The effects of Brexit on living standards across countries



Source: Dhingra, S., Ottaviano, G., Sampson, T., & Van Reenen, J. (2016). The consequences of Brexit for UK trade and living standards, pg. 17



Table 2: The effects of Brexit on UK living standards

	Optimistic	Pessimistic
Trade effects	-1.37%	-2.92%
Fiscal benefit	0.09%	0.31%
<b>Total change in income per capita</b>	<b>-1.28%</b>	<b>-2.61%</b>
<b>Income change per household</b>	<b>-£850</b>	<b>-£1,700</b>

Source: Dhingra, S., Ottaviano, G., Sampson, T., & Van Reenen, J. (2016). The consequences of Brexit for UK trade and living standards, pg. 16

In Figure 10 it can be seen the UK is the most negatively affected country. In Table 2 it can be clearly seen negative trade effects will outweigh positive fiscal effects (income coming from tariffs). Added to this it should be taken into account immigration reduction can decrease fiscal contribution so net effects would even be more negative.

### 3.3 Trade possibilities for the UK

Once the UK decided to leave the EU, uncertainty invaded people’s mind. A new set of options appeared for Great Britain and while some of them could improve their economy, the majority of them can worsen it.

Table 3 summarizes the different situations Great Britain can face plus its current situation and the situation of an average EU country. As it can be seen, the UK is currently more independent than a normal European country such as Spain.

Most positive (or less harmful) treaties are analysed in more detail in the following paragraphs to see if they fit British demands.

Table 3: Current trade situation and trade possibilities for the UK

	Access to the single market			Obligations		Influence
	Free tariff trade	Custom union and foreign trade	NTB’s	Other policies and regulations	Economic contributions	Vote on EU rules
<b>EU</b>	Total	Total. No custom costs. Access to EU FTA’s	Total	Full obligations	Full obligations	Total

<b>Current UK situation</b>		Total	Total. No custom costs. Access to EU FTA's	Total	Full obligations (but monetary independence)	Full obligations (but with the UK rebate)	Total
<b>EEA (Norway)</b>		Tariffs for agricultural and fishery products	None. Custom costs. No access to EU FTA's	Agricultural and fishery products are not substantially covered	Accepts the majority EU rules (free movement of people included).	Partial contributor	None
<b>Bilateral treaties</b>	Switzerland	Certain tariffs on agricultural products	None. Custom costs. No access to EU FTA's	Minimizes NTB's. Limited service coverage. No financial passport	Accepts the majority EU rules (free movement of people included).	Partial contributor	None
	Turkey	Only on manufactured goods and processed agricultural products.	No tariff costs on manufactured products. Obligation of trade policy alignment.	Elimination of NTB's for most goods trade. No service passport.	Adoption of EU rules on products and equivalent competition rules.	Recipient of EU aid.	None
	Canada	Certain tariffs on agricultural products and transition tariffs on manufactured goods.	None. Custom costs. No access to EU FTA's	Partial service liberalization. No financial passport	Accomplishment of EU rules for trading firms.	None	None
<b>WTO</b>		Common External Tariff	None. Custom costs. No access to EU FTA's	International rules. No financial passport.	Accomplishment of EU rules for trading firms.	None	None

Source: <http://www.libremercado.com/2016-06-30/las-cuatro-opciones-de-reino-unido-tras-el-brexit-noruega-suiza-turquia-o-canada-1276577406/> and own modifications.

One of the main claims favouring Brexit was they wanted to be more independent from European regulations justifying many regulations are useless and limits British economic capacity. The truth of this quote is only partial. Whereas it is true some regulations limit trade with other outside EU countries, they also eliminate many of the previously cited NTB's as the table shows. This benefits all countries in the EU.

It is true in crisis Europe has not reacted properly due to the complexity of arriving to an agreement between 28 countries. But still, Britain has a precious economic countercyclical tool which is its independent monetary policy. They can better react to economic shocks given that the monetary policy can be modelled to exactly fit economic purposes for the country.

Another argument against staying in Europe was the need of contributing to the EU budget. Again, many propaganda (sometimes fake propaganda) was made around this topic. While many countries contribute the same to the European budget, Great Britain has what is called the "UK rebate", a financial mechanism that reduces the UK contribution to the European budget to 2/3 of Britain net contribution. This was created since Great Britain received proportionally less financing than the rest of the countries since most of the EU budget was destined to finance the Common Agricultural Policy (CAP). In addition, the UK VAT base was originally higher and the UK originally exported more to outside EU countries than its partners. This made the contribution for Great Britain proportionally higher.

But it is important to note the CAP budget contribution has been reduced and UK exports are more EU oriented than in the past so current contributions to the EU budget are more compensated than before so saying Great Britain would be favoured from exiting the EU just because they save that money is forgetting those facts plus the benefits incurred after paying it (free trade in Europe plus European funds received).

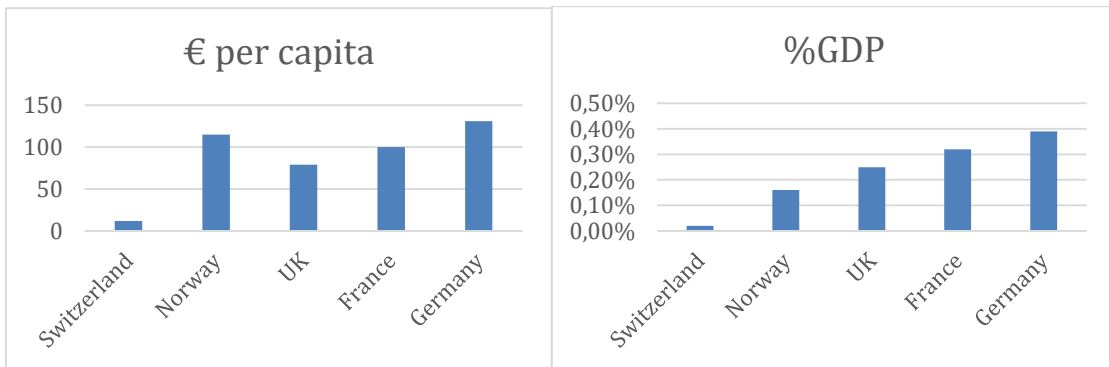
What the actual British wants to do is to negotiate a tailored free trade agreement with the European Union, with all the benefits and no added costs. But it is hard to believe Europe is going to easily accept that.

The apparently most beneficial agreements would be the Norwegian or the Swiss one since they have a high grade of integration with the EU absorbing most of the benefits of countries being in it. But both economies are partial contributors to the EU's budget and

they cannot vote on EU rules. They just accept them as they come. This situation is not favourable for the UK.

Figure 11 and Table 4 show contributions to the European budget for the case of Switzerland, Norway, UK, France and Germany in terms of its weight on GDP and euros per capita. It can be clearly seen the UK is proportionally contributing less than France and Germany and even less than Norway if looking at the right side figure.

Figure 11: Contributions to EU's budget in terms of GDP percentage and euros per capita



Source: own calculations from table 4

Table 4: Contributions to EU's budget in terms of GDP percentage and euros per capita<sup>1</sup>

Country	%GDP	€ per capita
Switzerland	0,02%	12
Norway	0,16%	115
UK	0,25%	79
France	0,32%	100
Germany	0,39%	131

Source: <http://blogs.lse.ac.uk/brexit/2016/07/20/how-much-do-non-eu-countries-give-up-for-access-to-the-single-market-more-than-brexiters-will-like/> and own calculations

Added to this fact, is the one of free movement of people. While the UK is not in the Schengen treaty, Switzerland and Norway are. The British government would have to accept this clause if they want to replicate one of those agreements.

<sup>1</sup> Average of 2008-2014 for EU countries, average of 2014-2015 for non-EU countries.

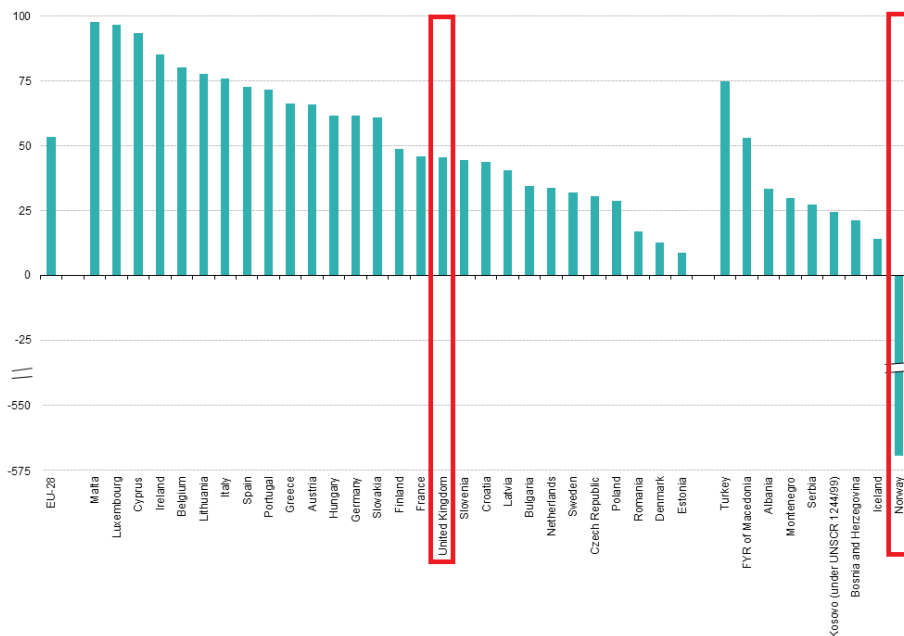
It is also necessary to take two country particular features into account<sup>1</sup>:

- In the Swiss case, location matters. Switzerland is located between France, Germany and Italy. The strategy of the Swiss government has been lowering corporation taxes to attract FDI and make corporations move to its country.
- On the other hand, Norway has energy surplus since the population density is very low and their natural resources high in proportion. This enhances economic benefit for the country without making them dependable from external energy.

British characteristics are way more different from those of Switzerland and Norway. Firstly, Great Britain is an island, which makes logistics more complex (not necessarily more expensive but definitely slower). Secondly it is highly populated and with a deficit in energy and food supply. The UK needs to import basic resources from third countries.

Compared to Norway, while it has an energetic surplus (negative dependency rate close to -575%) the UK has approximately a 50% energetic deficit as Figure 12 shows.

Figure 12: Energy dependency rate (2014) (net imports divided by the sum of gross inland energy consumption plus bunkers)



Source: [http://ec.europa.eu/eurostat/statistics-explained/index.php/Energy\\_production\\_and\\_imports](http://ec.europa.eu/eurostat/statistics-explained/index.php/Energy_production_and_imports)

<sup>1</sup> (Sentance, 2017)

Although these two treaties look similar, they are not. The Norwegian model implies being in the European Economic Area (EEA). This means the UK would accept EU regulations without the possibility of voting them. The Swiss option gives Great Britain more freedom compared to the previous treaty but it adds one complication. Swiss trade relation with the EU implies more than 120 treaties that had to be negotiated once the Single Market was launched in 1993. This trade deal was not agreed until 1999 (6 years later) and it did not come into effect until 2002. This would imply a total of 9 years in “no-man’s land” talking about trade in contrast to the British government timetable which affirms an agreement will be reached for 2019.

To sum up there are two possible Brexit scenarios speaking about trade with the EU:

1) Negotiations succeed.

This scenario implies the UK comes to an agreement with the EU. In such a case it is very probable the UK would agree a model similar to one of the two previously explained models. If the government is loyal to what it said, it seems the treaty would be more similar to the Swiss one but adapted to British needs.

Although this is possible in theory, it is complicated in practice since the former Swiss treaty is considered a failure for the EU. Allowing Great Britain on doing this could cause a calling effect for other countries to do the same and Europe leaders want to avoid this situation.

2) Negotiations fail.

This is the most probable scenario based on declarations of political leaders at the moment. Neither the British government nor the EU ruling institutions want to give up any demanded condition. Agreeing one of the previous treaties would imply not accomplishing all promises of the Brexit campaign.

Assuming British leaders will be loyal to what they said, negotiations will fail and the UK would start following WTO rules in year 2019. After that date Great Britain would start negotiating treaties with different countries on its own (remember it cannot negotiate treaties being in the EU so they would have to wait until year 2019). This obviously implies a really bad short run situation for the UK where nothing is clear. During that time the UK would start decreasing in economic terms.

After that and if right decisions are chosen, the country could start growing again in the medium run. For that recover to happen Great Britain would have to open to the world (copying Canada or Singapur strategies). They should attract qualified labour and FDI to boost their economy (most probably lowering corporate taxes). But this scenario is just an option. Added to this there is the Southern Irish competition (the “Celtic Tiger” has been following this strategy since the second half of the 90’s) which has years of advantage and the access to the European market.

#### 4. IMMIGRATION POLICY

This section is based on the book *Brexit Beckons: Thinking ahead by leading economists* (Baldwin, 2016). In this book several economists give their opinion about the possible outcomes of Brexit on different economic fields. This section tries to summarize the main possible outcomes on immigration and the options Great Britain currently has.

According to Jonathan Portes from the National Institute of Economic and Social Research (NIESR) immigration was probably the major factor determining the Brexit vote. It was a claim for taking back immigration policy control. From the economic point of view this is not logical since there are strong evidences of the positive effect of immigration (Baldwin, 2016) (Portes, 2016). In fact there is no evidence of significant negative economic impacts on UK workers in terms of jobs and wages while immigration has benefited public finances due to tax contribution (Wadsworth et al. 2016).

The areas that voted Leave are those in which immigration has significantly grown in recent years whereas the Remain vote was dominant in historical immigration areas, where UK born population has had more time to adapt to immigration (Carozzi 2016). Pro-Brexit politicians should theoretically accomplish their voter’s wills. On the other hand there is a general consensus of the necessity of not fully losing the access to the Single Market. But at the moment the complete fulfilment of these two purposes is impossible. It seems highly improbable the EU will let the UK access the Single Market without the free movement of people between the two territories. If an agreement is arranged, negotiations will be about the control of immigration and the degree of access to the European market. The most probable outcome will be on a point in between full immigration control and full access to the Single Market.

While it seems reasonable that current EEA nationals living in the UK will still be able to stay, it is not clear what will happen to those Europeans wanting to live in Britain.

#### 4.1 Visa controlling

The question is how the UK would control EEA nationals and non-EEA national's immigration. There are two main ways of doing this:

- To oblige EEA nationals who want to work legally to apply for a work visa, as for non-EEA nationals, but with less restrictive rules (higher quotas for EEA national's visas, no restrictions on intra-company transfers, higher variety of job occupations, etc).

The problem of this option is it would require extra resources and would make labour market more inflexible increasing business costs.

- To restrict the issuance of new National Insurance numbers to EEA nationals with a top ceiling. Once the ceiling is hit the remaining EEA nationals that could not obtain a National Insurance number would have to apply for a visa with the non-EEA national's rules.

The disadvantage of this option is it just imposes a limitation on the quantity of immigration but not on the quality (low skilled immigration would continue entering the UK). The positive thing of this system is it implies lower administrative costs and it is simpler to negotiate.

The final outcome will depend on the stronger or weaker negotiating positions of both parts and the political will on arriving to an agreement.

#### 4.2 Implications of Brexit for wage inequality

According to Brian Bell and Stephen Machin (2016) from the CEP, Brexit will cause a negative trade shock due to the restriction of access to the Single Market. This shock is going to affect more on the manufacturing sector due to its high dependence of international trade. These are sectors that have already suffer globalisation effects (cheaper imports substitute internal production, especially imports from China) suggesting they are more affected from trade than other sectors. The only short-run competitive advantage is



the one of the lower value of the pound. The net effect however seems more negative for this industries (mostly placed on “leaving vote” regions).

If reductions in migration occur, two effects may appear. First, a reduction in the number of EU students in British universities. There may be labour supply problems on high skilled sectors.

Second the UK has taken advantage of immigrant job supply for unskilled jobs. If migration is reduced there may be a lack of labour supply on those low skilled jobs that will push the national minimum wage up.

There is a critical sector that is going to be strongly hit by Brexit and that is the financial sector (mostly placed in the City of London). The long run situation will depend on negotiations and there is going to be a clear trade-off between the degree of Single Market access and the level of immigration restriction. If the UK is not able to reach an agreement that includes the financial passport the financial sector will be highly damaged creating costs to the economy, the taxation and the employment. It will presumably reduce FDI due to the previous financial entering gate role to the EU that Great Britain had (it could lose its EU financial centre condition).

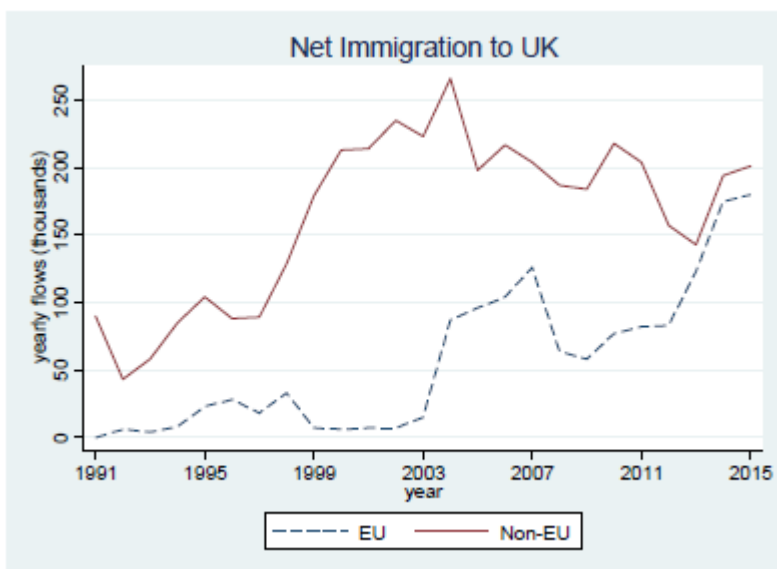
All these likely consequences of Brexit would decrease GDP growth causing a decline on average wages (although the minimum wage could increase as said before). The structure of wages will probably be changed due to the decrease in labour supply the reduced migration would cause (labour intense sectors in which wages were lower will probably lack labour supply forcing an increase in wages).

### **4.3 Implications of Brexit for the UK labour market**

This point is based on the investigation performed by Barbara Petrongolo cited here from Baldwin (2016)

Arguments against immigration were used in the Leave campaign but the fact is free movement of labour has a positive effect on UK’s fiscal budget and productivity. An uncertain environment is bad for the labour market. The first Brexit consequence on labour markets was a hiring freeze once the result was known. The week after the referendum there was a nearly 50% drop in online job adverts (normal fluctuations tend to be between 5 and 10%). According to the Confederation of British Industry business confidence has fallen to peak crisis levels in 2009.

Figure 13: Net Immigration to the UK, 1991-2015



Source: Wadsworth, J. S. Dhingra, G. Ottaviano and J. Van Reenen (2016), *Brexit and the Impact of Immigration on the UK* Brexit Analysis No. 5, London: Centre for Economic Performance.

As said before, the trade-off will be between free trade and labour mobility. If the UK wants to control immigration it will be at the expense of trade conditions. To know if it is worth to sacrifice trade and fiscal contribution of immigrants in exchange to full immigration control it is necessary to analyse if immigration has harmed UK economy.

The recent growth of immigration in the UK has been carried out by immigrants of the EU (mostly after 2004 when eastern countries joined the Single Market). EU immigrant working age population has grown from 1.8% to 6.3% in the last 20 years.

Table 5: Education and immigrant status (working age population) 2015

Age finished education	UK-Born	EU immigrants	A8 immigrants	All immigrants
High (21 or older)	23%	43%	36%	45%
Medium (17-20)	33%	42%	55%	36%
Low (16 or under)	44%	15%	9%	19%
All	100%	100%	100%	100%

Source: Wadsworth, J. S. Dhingra, G. Ottaviano and J. Van Reenen (2016), *Brexit and the Impact of Immigration on the UK* Brexit Analysis No. 5, London: Centre for Economic Performance.

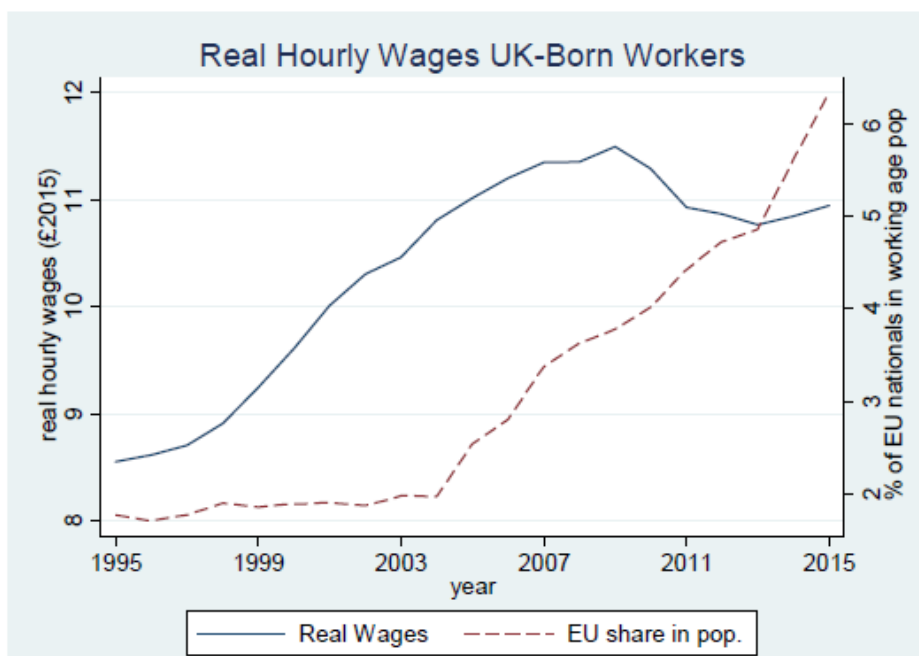
Table 6: Employment, unemployment, students and economic inactivity by immigrant status (working age population) 2015

	UK-born	EU immigrants	A8	All immigrants
<i>% of whom:</i>				
<b>Employed</b>	72.5%	78.2%	81.9%	69.9%
<b>Unemployed</b>	3.3%	3.2%	2.65%	4.2%
<b>Student</b>	7.7%	7.1%	5.1%	7.6%
<b>Inactive</b>	16.5%	11.6%	10.5%	18.3%

Source: Wadsworth, J. S. Dhingra, G. Ottaviano and J. Van Reenen (2016), Brexit and the Impact of Immigration on the UK Brexit Analysis No. 5, London: Centre for Economic Performance.

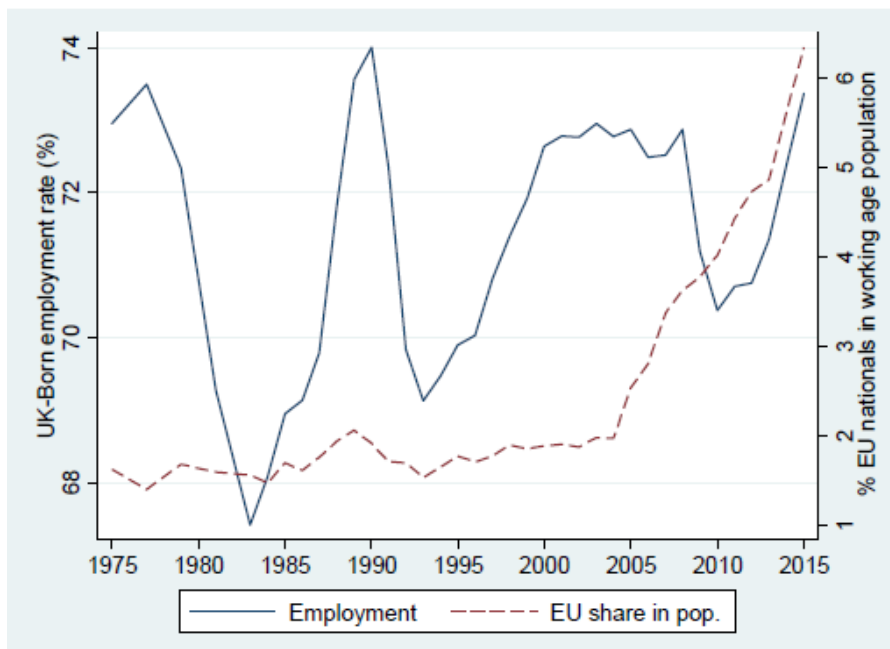
As Tables 5 and 6 show, EU immigrants are more educated and more able to work than the UK population. Eastern EU immigrants (A8 immigrants) are less educated than the whole EU immigration but still more educated than UK-born population. Moreover, almost the 82% of eastern European immigrant population is employed (compared to the 72.5% of British population).

Figure 14: Median real hourly wages for the UK born, 1995-2015



Source: Wadsworth, J. S. Dhingra, G. Ottaviano and J. Van Reenen (2016), Brexit and the Impact of Immigration on the UK Brexit Analysis No. 5, London: Centre for Economic Performance.

Figure 15: Employment rate of UK born and EU immigration, 1975-2015



Source: Wadsworth, J. S. Dhingra, G. Ottaviano and J. Van Reenen (2016), Brexit and the Impact of Immigration on the UK Brexit Analysis No. 5, London: Centre for Economic Performance.

Wadsworth et al. (2016) studied immigration impact in the UK economy and the studies were not able to find negative effects. Given that immigration increased in recession years, it was easy to blame employment and real wages decreased due to the increase of immigration but in fact, these two variables started recovering to pre-Crisis levels while immigration kept increasing as Figures 14 and 15 show. From these two figures we can affirm there is no correlation between immigration and wages or employment of UK natives in general.

Note here these are general conclusions. It could still be possible that immigration would have affected more on those sectors with a higher immigrant incidence. But when looking at a more concrete analysis of Manacorda et al. (2011) it is found the only group that suffers from the arrival of new immigrants is the group of pre-existing immigrants while UK natives working in these high immigration proportion markets do not suffer negative consequences for employment or wages. This is probably produced because previous immigration was a poorer substitute of UK born population than new (and more educated and skilled) immigration.

To end up, it is vital to take into account new immigrants contribute more than old ones to the fiscal budget since they tend to work in better paid, high skilled jobs.

Given that no negative economic effects are found, it can be said it is not worth to sacrifice trade conditions in order to have a higher control on immigration. In fact, it is logical to think the sectors that will suffer the most from a reduction in immigration will be those that already have a high percentage of immigrants working in them (more concretely in sectors such as low-tech manufactures, hotels, restaurants, higher education and finance).

## 5. CONCLUSION

When talking about Brexit it can be thought it is a good decision to leave Europe since there are many requirements to fulfil that are not directly beneficial for the society, such as concrete European regulations or free movement of people. But after revising the different points of this paper it seems improbable to expect a positive economic outcome for the UK.

Pro-leaving politician's arguments lack empirical demonstration (e.g. saying immigrants lower wages can be true for some industries but it is false when referring to the whole economy) Moreover they lack a defined strategy and what has been presented as an strategy (*The United Kingdom's exit from and new partnership with the European Union*, 2017) is just a declaration of intentions.

The fact is time runs as the UK uncertainty increases, leaving them in a bad position for starting negotiations (the longer this situation is maintained the further expectations on the UK will fall). The strongest intuition obtained from this analysis is the UK will have to give a certain single market access up in exchange for increased immigration control. While the first implies a decrease in economic welfare in the short run, it is not clear the second could increase economic welfare.

The only alternative that would leave the UK in a better place would be a further opening to the world, through signing several new free trade agreements with old trade partners. This seems difficult taking into account the Brexit motivation was to close their doors to foreign people. In addition the negotiation power is weaker than the EU's since its trade volume is way smaller so the ability to reach better conditions than before is reduced.

Conclusions extracted from this paper imply strong game theory assumptions such as the one that the EU will not allow full single market access if the UK imposes strong controls on immigration. These conclusions may change if negotiation outcomes do not move into

the proposed payoff range (immigration control in exchange to single market access).

What is clear is the UK is living a situation that is not good for their economy and it needs to be solved. When and how depend on facts that have not occurred yet and only time will decide.

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