



The economic consequences for the UK and the EU of completing the Single Market

Preliminary version - Not to be quoted

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The construction of the European Union has always relied first and foremost on a gradual economic integration process. Assessing the economic consequences of the European Union is therefore central to measure the benefits of the Union for its citizens and businesses.

At a time where EU countries are pulling together diplomatic resources in an attempt to better joined up foreign policies, and after more than 50 years of peace between the member of the European Union previously called the European Economic Community, economic benefits can certainly not be seen as the only reason for membership, but they remain a fundamental element of this choice.

Nowhere else than in the United Kingdom the discussion around European Union membership is more vivid. An accurate assessment of the consequences of the membership for the UK is therefore central for this discussion to take place on a robust basis. The purpose of the study is to contribute to such a sound assessment. It focuses on the consequences for the European Union and the United Kingdom of completing the European Single Market. It also assesses the result for a country like the UK not to take part in further steps of that process.

After a presentation of the context and the objectives of the study (section 1), a literature review presents the type of gains expected from the Single Market and details the previous analyses on this subject (section 2). The third section presents the methodology used building on the most advanced economic tools and databases available. The fourth section details the different scenario simulated with the General Equilibrium model MIRAGE. The last section comments in detail the results of the different scenarios for the EU and the UK economies.

1. Context and objectives

Since the Treaty of Rome in 1957, economic integration represents one of the core objectives of the European Economic Community later denominated European Union (EU). A lack of progress led the Community in the mid-1980s to consider a more thorough approach to the objective of removing trade barriers, with more effective methods: the Single Market Programme. This was primarily set out in the celebrated Commission White Paper of June 1985 and incorporated in the European Treaty by the 1986 Single European Act. Completed on 1st January 1992, the Single Market programme aimed at removing the remaining obstacles to trade inside the EU to foster economic growth through the creation of a large integrated market for goods and services. Following two recent enlargements, the Single Market now includes 27 Member States and also applies to the three European Economic Area (EEA) countries - Norway, Iceland, and Liechtenstein - and to some extent, to Switzerland and Turkey. Nowadays, The EU is the biggest trading area with a GDP of €11700bn for a population of more than 500 million people.

The Lisbon Strategy was conceived in the late 1990s when Europe, despite significant economic growth, experienced high structural unemployment, an underdeveloped services sector, and a growing productivity gap between the EU and the US. In response, European Member States agreed in 2000, in Lisbon, a broad 10-year strategic framework designed to

make the EU “the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion”. The resulting reforms have built support for advancing the Single Market in particular by starting to opening up the services, telecommunications and energy sectors.

Despite recent major achievements like the official start of the Services Directive implementation, in December 2009, the trade integration remains an unfinished agenda in Europe. This is the main reason why in October 2009, the European Commission President, Jose Manuel Barroso, entrusted Pr. Mario Monti with the mission to prepare a report on the re-launch of the Single Market. This report recently published could serve as a blueprint for the incoming European Commission.

In parallel, the successor to the EU’s 2000-2010 Lisbon Strategy for Growth and Jobs will set out later this year a structural reform programme where product market reforms, among others, will be instrumental to uphold the economic recovery. Indeed, given very constraint public finances across Europe, micro-economic reforms will have a centre role to play in the years to come to boost European economic growth potential. Therefore, the Single Market will certainly stay at the heart of the EU’s structural reform programme for the next ten years.

Would the UK be better off by not taking part of further European integration steps?

With the entry into force of the Treaty of Lisbon, on the first of December 2009, the possibility for a Member States to leave the European Union is not anymore a theoretical option. It is now clearly envisaged as a possibility by the Treaty in its article 49 A. Among the current Member States, The United Kingdom has for long experienced the most vivid debate on this issue. Since it joined the then European Economic Community in 1973 and despite a large positive vote in the subsequent 1975 referendum, the UK has traditionally retained the highest share of eurosceptics among its population.

In its February 2010 report, Eurobarometer still ranks the UK as the last among the 27 in terms of support to the very concept of a European Union. Indeed, among the respondents, only 30% consider that the EU membership is positive for the UK, against the same proportion expressing the reverse view. By comparison, these percentages are respectively 53% and 15% in average in the EU. Even more striking is the fact that 49% of British respondents consider that on balance their country has not benefited from its membership to the EU, against only 36% with the opposite view. Both percentages are the most extreme among EU countries, with an EU average of respectively 31% and 57%. It is however to note that a high proportion of British respondents express the view that the national media present EU action in a way which is unduly negatively biased.

The euroscepticism of a substantial share of UK population led in the last European elections to a surge in the share of the votes supporting two political parties openly opposing EU membership for the UK. The extreme right wing British National Party and the UK Independence Party (UKIP) have clearly made headways with respectively 6.2% and 16.5%. This was in a context of very low turnout in the UK, like almost everywhere in Europe. With a bit less than a quarter of the voters supporting political parties in favour of the UK resigning from its membership to the EU, this issue is however to be taken seriously.

Such euroscepticism is not limited to the UK. A large share of the population in other countries like Latvia and Hungary expresses strong concerns about the lack of benefits they see from the EU membership. These expressions of euroscepticism are however not limited to the periphery of Europe or to recently acceded Member States, as clearly shown by the two lost referenda on core European issues in founding Member States like France and The Netherlands. However, the UK is in a singular position. It is the only of the large Member States where two non marginal political parties prone explicitly an exit of the EU.

Many reasons preside to the fact that the three dominant British political parties support UK membership to the EU. The economic consequences have always been, however, at the very heart of the constantly reaffirmed British commitment to the European integration. For this reason, it is crucial to measure accurately the gains or losses for the UK economy implied by the EU membership.

In this perspective, the present study aims at assessing the importance of the potential economic benefits of market reforms to bring down the remaining obstacles to trade across Europe. Its aim is also to assess the consequences for the UK if it were to stay away from further integration steps in Europe.

2. Literature review

Various studies have, ex-ante or ex-post, assessed the gains attached to the Single Market programme. The economic analysis underpinning the Commission White Paper but published later in 1988, the Cecchini Report (Cecchini *et al.* 1988) estimated that, by making the allocation of resources more efficient, the Single Market programme would produce a 2.5-6.5% increase in the level of the European Community output. For his part, based on the Growth Theory, Richard Baldwin (1989) estimated that the dynamic effects coming from the improved resource allocation leading to additional investments could raise annual European Community growth rate by 0.2 percentage points over a period of 15 years. These gains would come in addition of the efficiency gains as measured in the Cecchini report.

Several other studies have focused on the gains of the Single Market in specific areas, in particular the services sector. This is the case in particular of the 2005 Copenhagen Economics study, which assesses the effects of the Services Directive aimed at fostering EU integration in this sector.

Ex post, a series of studies have aimed at assessing the degree of achievement of the Single market. For instance, in 2007, the European Commission estimated that the 1992 Single Market programme had in effect resulted in a 2.2% increase of the EU GDP in 2006 and the creation of 2.75 million additional jobs (Ilzkovitz *et al.* 2007).¹

Most of the ex-post studies conclude that only part of the expected gains has been achieved and that induced changes in trade patterns were more complex than forecasted in ex-ante studies. In particular, specialization did occur along product ranges, with a selective club of Member states specialising in top range, high-priced good (Fontagné *et al.* 1998). Indirect evidence on the completion based on deviations from expected trade patterns pointed to the resilience of non-tariff obstacles to intra-EU trade (Head and Mayer 2002). Similarly, the

¹ This last study builds on the European Commission's model QUEST.

lack of convergence of prices has brought indirect evidence of the incomplete achievement of the Single Market.

3. Methodology and databases

Quantifying a process of trade integration like the Single Market is an extremely difficult exercise as it covers multiple changes in policies in various fields, with wide and differentiated consequences on trade in almost all the countries and the sectors of the European economy. People and firms react and adapt to this new environment triggering complex linkages and large consequences on the structure of the EU economy.

For more than two centuries, many economists have dedicated their work to better describing and better understanding the underlying mechanisms behind the economic changes prompted by trade integration. Even if many aspects remain largely debated, our understanding of such mechanisms is now quite advanced. However, the quantification at the global and detailed levels, and for a wide variety of countries and sectors, of the consequences of such an agreement is still a very difficult exercise.

The computable general equilibrium (CGE) models are the most commonly used quantitative analytical techniques in this field. In essence, CGE models are computer-based simulations, which identify the sources of income gains or losses from further opening up to trade and show how these gains are distributed among countries or regions and what are the impact on the different categories of economic agents or on the different sectors of the economy. Such models contain a network of linkages between industries, countries and markets. They can thus explicitly take into account that a change of one economic variable in a given country and sector affect a wide range of other economic variables in other sectors and countries.

The present work is based on the MIRAGE dynamic general equilibrium model developed by the CEPII (Decreux and Valin 2007). This model builds on the GTAP database (Narayanan and Wamsley 2008) for the input-output flows, international trade flows, capital stocks, labour force, saving and elasticities. It draws also upon the MACMaps database (Bouët et al. 2008), which provides a very detailed measure of traditional trade barriers. The underlying dynamics of the world economy is built inter alia on UN and ILO information on the world demography.

After decades of economic and political integration, traditional trade barriers like tariffs and quotas have been entirely removed between the countries of the European Union. Therefore, since 1992, the Single Market programme has focused on reducing behind-the-border obstacles to trade, and in particular in the field of services trade. In this field, the study draws upon a newly developed database on obstacles to trade in services by Fontagné *et al.* (2009). With regards the crucially important non-tariff obstacles to trade in goods, the study relies on the best available database developed by Kee *et al.* (2008). However, the study complements this work by differentiating between intra-EU and extra-EU regulatory discrimination against foreign competition. To that aim the study builds on the estimations of border effects by De Sousa *et al* (2010). For each of these areas, the details on the different sources of data are given in annex.

Obstacles to trade in services

Given the share of the service sectors in the economy, it is increasingly important to measure adequately the obstacles business operators are facing in these sectors when operating

abroad. To that aim the study uses the most recent database available on obstacles to trade in services described in Fontagné *et al.* 2009. This database proposes tariff equivalents of barrier to trade in services, focusing on cross border trade (Mode I according to GATS definition). The authors follow the specification of Park (2002), improving the methodology and updating the data. The tariff equivalents are derived from a gravity equation, whereby importer fixed effects capture the average protection index, estimated at the sectoral level. This database builds on GTAP data for the year 2004. It provides tariff equivalents for nine different service sectors of the GTAP nomenclature (see list in Annex Table 1) and a larger set of countries (81) than what is available for instance in other service databases such as the OCDE one.²

Non-tariff obstacles to international trade in goods

The model integrates data on Non Tariff Barriers (NTB) for goods from Kee *et al.* (2009). This study proposes an estimation of ad valorem equivalent of NTB for each country at the six-digit level of the harmonized nomenclature. To that aim, the authors first estimate a gravity equation including a dummy variable that indicates the presence of a core NTB coming from UNCTAD database of non-tariff obstacles to trade (TRAINS). The coefficients of these dummies correspond to the quantity-impact of NTB on imports. This impact is then transformed into price effects using import demand elasticities computed by the authors in Kee *et al.* (2008). The ad valorem equivalents of NTB cover a wide range of product and countries, but do not comprise a bilateral dimension. Using this dataset means therefore assuming that non-tariff barriers in a given country are the same whatever the country of origin of the imported products. If this type of assumption is reasonable in most cases, this is clearly not the case between European countries where a deep harmonization process of product regulations has been implemented since the late 80's. In most sectors, this process has lead to a reduction of intra-EU in comparison to extra-EU obstacles to trade. The European Union is certainly the area of the world where most progress has been made in this field. In order to take due account of this situation, the study differentiates for each EU country between ad-valorem equivalent (AVE) of NTBs with other European countries and with the rest of the world.

This differentiation builds on the deviation of actual trade flows from a (domestic sales) benchmark and is accordingly based on border effect estimation. It relies on De Sousa *et al.* (2010): it is assumed that for each country i member of the European Union, the ratio between ad valorem equivalent of non tariff barriers AVE is equal to the ratio between the ad

valorem equivalent of the border effects BE^3 :
$$\frac{BE_{EU-EU}}{BE_{EU-ROW}} = \frac{AVE_{i-EU}}{AVE_{i-ROW}}.$$

The AVE that the country i applies to the European Union members and to the Rest of the World can be inferred from this assumption and by considering that the average AVE Kee *et al.* estimated is a weighted average of AVE applied to the EU and to the Rest of the World: $AVE_i = \sum_j x_{ij} AVE_{ij}$ with AVE_i average ad valorem equivalent of NTB estimated by Kee et al (2008), $j \in C(EU, ROW)$ and x_{ij} bilateral trade between i and j .

² The authors stress the shortcomings of using such a cross-sectional approach relying on a GTAP data. In absence of panel data for a sufficiently large set of countries, the associated estimates remain the best information available.

³ Border effect are transformed into ad valorem equivalent using MIRAGE elasticities for each sector

For countries that do not belong to the EU, the average AVE estimated by Kee *et al* (2009) applies to all sources of imports.

Representing the world economy through a general equilibrium model: MIRAGE

In comparison to other computable general equilibrium models, the main characteristics of MIRAGE concern the assumptions made about products quality ranges, imperfect competition, and macro-economic closure. The demand side is modelled in each region through a representative agent⁴. Domestic products are assumed to benefit from a specific status for consumers, making them less substitutable to foreign products than foreign products between each other. Secondly, products originating in developing countries and in developed countries are assumed to belong to different quality ranges. This is motivated by the fact that several empirical works have shown that unit value differences are able to reveal quality differences even at the most detailed level of products classification. This is likely to have direct consequences on the transmission of liberalisation shocks since the elasticity of substitution is lower across different qualities than across products within a given quality. Hence, the competition between products of different qualities is less tough than between products of similar quality. In the absence of systematic information suitable for incorporation in a worldwide modeling exercise such as the one undertaken here, vertical differentiation is modeled in an *ad hoc* fashion: developed countries and developing countries are assumed to produce goods belonging to two different quality ranges; substitutability is assumed to be weaker across these two quality ranges, than between products belonging to the same quality range⁵.

As regards the supply side of the model, producers use five factors: capital, labor (skilled and unskilled), land and natural resources. The structure of value added is intended to take into account the well-documented skill-capital relative complementarity. These two factors are thus bundled separately, with a lower elasticity of substitution, while a higher substitutability is assumed between this bundle and other factors. The production function assumes perfect complementarity between value added and intermediate consumption. The sectoral composition of the intermediate consumption aggregate stems from a CES function. For each sector of origin, the nesting is the same as for final consumption, meaning that the sector bundle has the same structure for final and intermediate consumption. Constant returns to scale and perfect competition are assumed to prevail in agricultural sectors. In contrast, firms are assumed to face increasing returns to scale (through a constant marginal cost and a fixed cost, expressed in output units) in industry and services. In those sectors, competition is imperfect. This modeling authorizes to capture to some extent the pro-competitive effect of trade liberalisation.

As regards the markets clearing and the macroeconomic closure, capital good has the same composition whatever the sector, but it cannot change its sector affectation once it has been

⁴ The utility function is intra-temporal, with a fixed share of the regional income allocated to savings, the rest used to purchase final consumption. Below this first-tier Cobb-Douglas function, consumption tradeoff across sectors is represented through a LES-CES function. Each sectoral sub-utility function is a nesting of CES functions, comparable to the standard nested Armington-Dixit-Stiglitz function, with two exceptions.

⁵ Practically, this is modelled by introducing in the demand nesting a tier corresponding to the trade-off between the two quality ranges. This tier is the first one in the consumer choice within each sector, before any other choice in terms of geographical origin. CEPII, Working Paper No 2006-10 21.

installed. It is accumulated every year as the results of investments in the most profitable sectors.

Natural resources are considered to be perfectly immobile and may not be accumulated. Both types of labour are assumed to be perfectly mobile across sectors, whereas imperfect land mobility is modeled with a constant elasticity of transformation function. Production factors are assumed to be fully employed. Accordingly, negative shocks are absorbed by changes in prices (factor rewards) rather than in quantities. All production factors are immobile internationally. With respect to macroeconomic closure, the current balance is assumed to be exogenous (and equal to its initial value in real terms), while real exchange rates are endogenous.

MacMaps

Based on a joint effort devoted by the International Trade Centre –ITC– (UNCTAD & WTO, Geneva) and the CEPII to systematically collect detailed and exhaustive information on the level of applied trade barriers, the MacMap-HS6 database computes an exhaustive and consistent ad-valorem equivalent measure of applied protection across the world, at the six-digit level of the Harmonized System (HS-6 level, 5,111 products). 166 reporting countries are covered, with 208 partners, in 2004. In so doing, the main original contributions of MacMap-HS6 are: (i) the exhaustive coverage of preferential trade arrangements across the world; (ii) the calculation of the AVE of specific duties, acknowledging the differentiated impact of such duties across exporters, depending on their export unit values; (iii) the incorporation of tariff-rate quotas both through the AVE of the resulting protection at the margin, and through the calculation of involved rents; (iv) an original aggregation methodology, using a weighting scheme based on reference groups of countries, and limiting the extent of the endogeneity bias inherent to the standard, import-weighted average protection.

A new version of the GTAP database

The study draws upon the last version of the GTAP database (version 7.1.). The particularity of this new version, which is of interest for our analysis, is the implementation of updated Input-Output table for the 27 EU countries. This version also proposes country-level information on different categories of payment for the EU agricultural domestic support, and revised estimates of production and domestic support for some sectors in the US.

4. Scenarios

Five scenarios are considered in the study, the details of which are explained below.

Scenario 1- Full implementation of the Single Market

The main scenario considered in this study is one of complete withdrawal of the remaining obstacles to trade across the EU. As discussed before, these obstacles take almost exclusively the form of non-tariff barriers on exchange of goods and discriminations against foreign competition in the field of trade in services. Scenario 1 is therefore a scenario of complete phasing-out of all remaining trade barriers within the European Union. It corresponds to the objective the soon to be agreed EU 2020 strategy should be aiming for.

Scenario 2 – UK opting out additional EU integration steps

Some commentators have suggested that the UK should renegotiate its relations with the EU. They often refer to the model of Norway, a member of the European Economic Area (EEA), or of Switzerland, a member of the European Free Trade Area (EFTA).

Norway is actually a member of both EFTA and the EEA. As such, it is not subject to EU tariffs and quotas and can benefit from the free movement of goods, services, people and capital. Nonetheless, Norwegian exports to the EU are still subject to customs requirements and a certificate of origin is needed, adding to the cost of exporting. As a member of the EEA, Norway is still subject to “horizontal” EU policies, such as consumer or environmental legislation, but it is not represented in the Council of Ministers and therefore has no input into the making of EU legislation. Norway still has to contribute to the EU budget – for example as part of the EEA-Enlargement Agreement.

Switzerland is a member of EFTA, but not of the EEA. Like Norway, it is subject to customs checks, although not to EU tariffs and quotas in the manufacturing sector. Switzerland also contributes to the EU budget under the Enlargement Agreement. Trade with the Single Market is governed by bilateral agreements. However agreements – for example in the field of aviation – often demand in effect that Switzerland applies EU laws. When that is the case, it has in effect little say in negotiating them. In effect, Switzerland only has limited access to the Single Market in specific areas like services and agro-food products when it decides not to apply EU regulations and therefore not to be part of the Single Market.

Scenario 2 builds on scenario 1 but considers that the UK would opt for the Swiss model and stay away from additional trade integration steps that may take place in certain areas. To achieve a Single Market without NTBs and obstacles to trade in services, EU Member States will have to agree changes in products and services regulations to suppress their domestic bias. Scenario 2 therefore assumes that the UK may chose not to incorporate in its legislation the changes of domestic regulation that will be required in the course of that process. It means that this scenario assesses the consequences of the EU 26 Member States suppressing the remaining obstacles to trade among them, while the UK retains and offers the same level of market access than is currently the case with the rest of the EU.

Scenario 3 – The UK resigns from the European Union

Some commentators or political leaders have suggested that the UK would be better off out of the EU. It would mean renegotiating the terms of the free circulation of goods, services, investments and people, the so-called four freedoms that have been agreed between European countries. Nobody can figure out with certainty what would be the outcome of this extremely

complex negotiation. In order to measure the order of magnitude of the economic consequences of such highly hypothetical scenario, the study assumes in the scenario 3 that the UK would face the same level of trade protection with the rest of Europe than it is currently the case between the EU and the rest of the OECD (and conversely for the EU exports to the UK market).

Scenario 4 – The UK opts out from further European integration steps and ties up with NAFTA

Some in Britain would argue that the UK would be better off by strengthening its ties with the US in place of a closer integration with the rest of Europe. Therefore, scenario 4 builds on scenario 2 but complements it by a free trade agreement between the UK and the three NAFTA countries.

Definition of scenarios

1	<i>Full implementation of the Single Market</i>	withdrawal of NTB and barriers in services within the EU
2	<i>UK opting out further EU integration steps</i>	withdrawal of NTB and barriers in services within the EU, excepting for the UK
3	<i>The UK resigns from the European Union</i>	scenario 2 + implementation of tariffs between UK and the rest of the EU 27
4	<i>The UK opts out from further European integration steps and ties up with NAFTA</i>	scenario 2 + free trade agreement between UK and NAFTA

5. Economic consequences

1. Consequences of further European integration (scenario 1)

The withdrawal of the remaining barriers to trade of goods and services inside the European Union would have a very strong positive impact on its members. After 10 years of implementation, EU national income would be 18.8% bigger (Fig. 1 and table 3 in annex). It means that production would be 24.4% bigger at constant price. The difference is explained by the fall in prices which would benefit consumers.

It would translate in 7.2% increase in national income in the case of the UK and 13.6% in the case of Italy. Most of the smaller Member States would benefit disproportionately with for instance Benelux national income increasing by 25.4%.

UK production in volume would rise by 13.4%. It would be 22.5% for Germany and up to 62.1% for Benelux countries. UK exports would increase by 47.3% against 38.3% for its imports, representing a total of \$640bn of additional trade. Wages of skilled people would increase in a range of 10.9% in the case of the UK to 37.3% in the “rest of Europe” region which comprises mainly central and East European countries (CEECs).

Figure 1. National income evolutions
Scenario 1, 2020
(% deviation from the baseline)

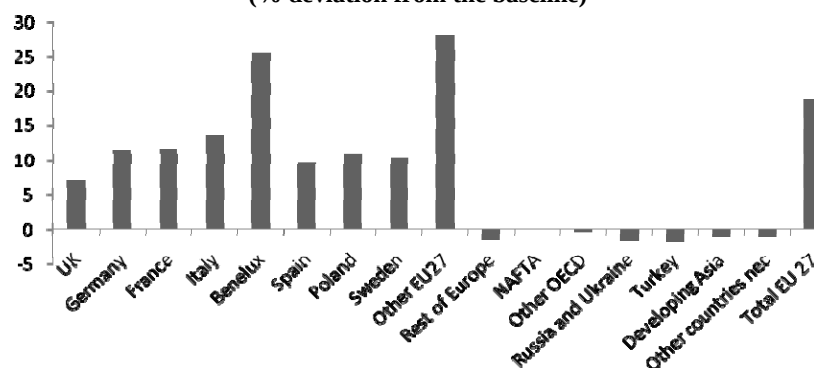


Figure 2. Changes in production in volume
Scenario 1, 2020
(% deviation from the baseline)

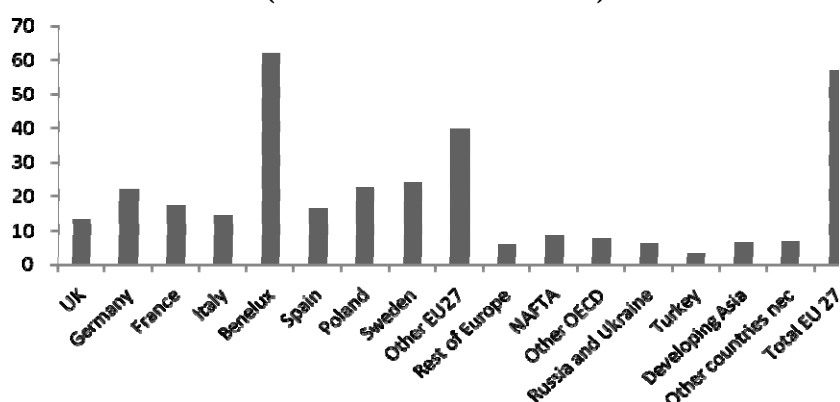


Figure 3. Changes in total exports in
Scenario 1, 2020
(% deviation from the baseline)

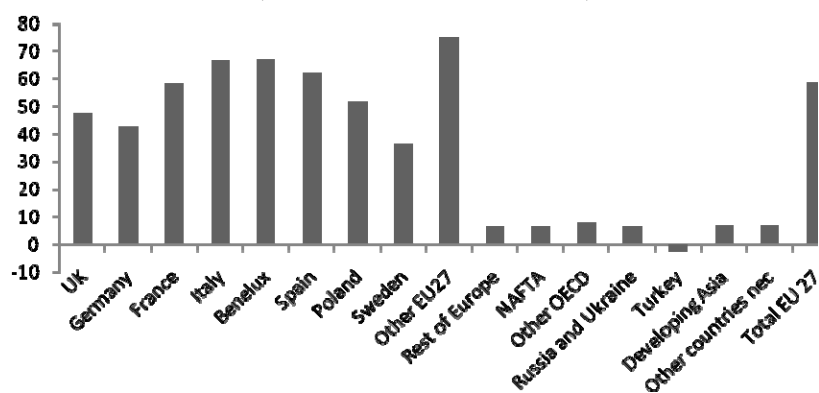


Figure 4. Changes in total imports
Scenario 1, 2020
(% deviation from the baseline)

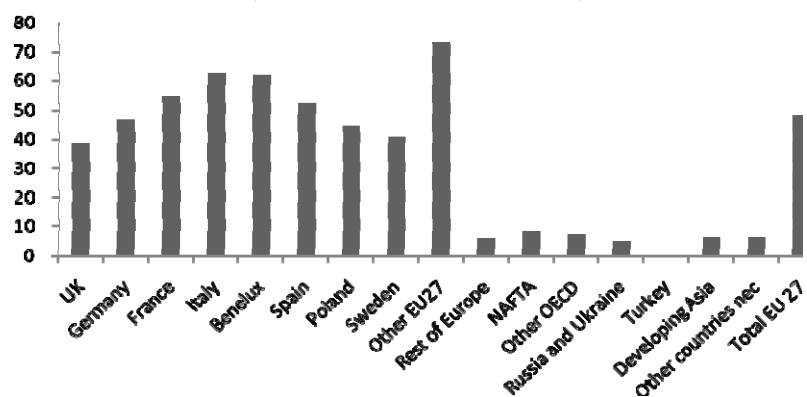
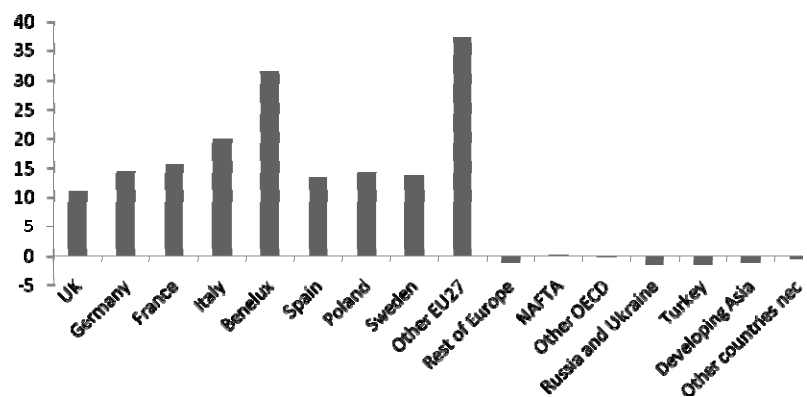


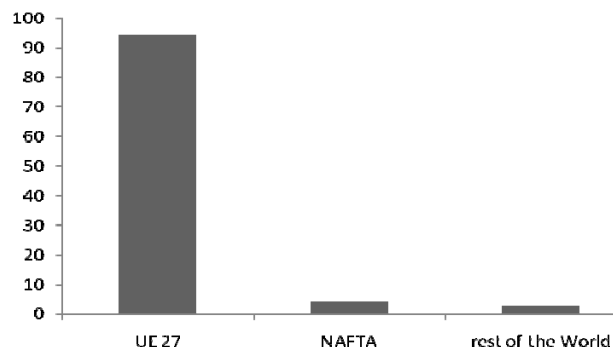
Figure 5. Changes in skilled real wage Scenario 1, 2020
(% deviation from the baseline)



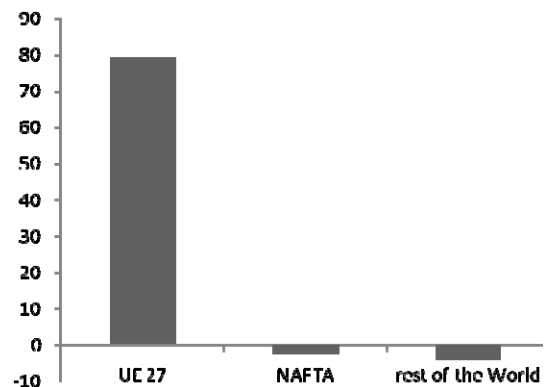
Trade would be mostly impacted within EU borders. For instance, UK exports to the rest of the EU would almost double (Fig. 6). In turn, UK imports from the rest of the EU would increase by a bit less than 80%. The main changes would take place with Italy, Spain and CECCs on the export side and with the same countries plus France on the import side (table 11 and 12 in annex).

This increase of trade between UK and the rest of the EU27 would hardly be at the expense of trade with NAFTA and the rest of the world. Indeed, positive and negative evolutions with trade partners outside the EU stay always below the 10% grade.

**Figure 6. Changes in UK exports by destination
Scenario 1, 2020
(% deviation from the baseline)**



**Figure 7. Changes in UK imports by origin
Scenario 1, 2020
(% deviation from the baseline)**



2. What would be the consequences of the UK not taking part in the next steps of European integration? (Comparison of scenarios 1, 2 and 3)

Potential important losses for the UK economy

The United Kingdom would clearly suffer an economic loss if it chooses to step back from future steps of European integration. If left out of the process, UK national income would be reduced by 7.4 percentage points under scenario 2 and 3 in comparison to scenario 1 (Fig. 8). Impact on production in volume would be of the same order of magnitude (Fig. 9).

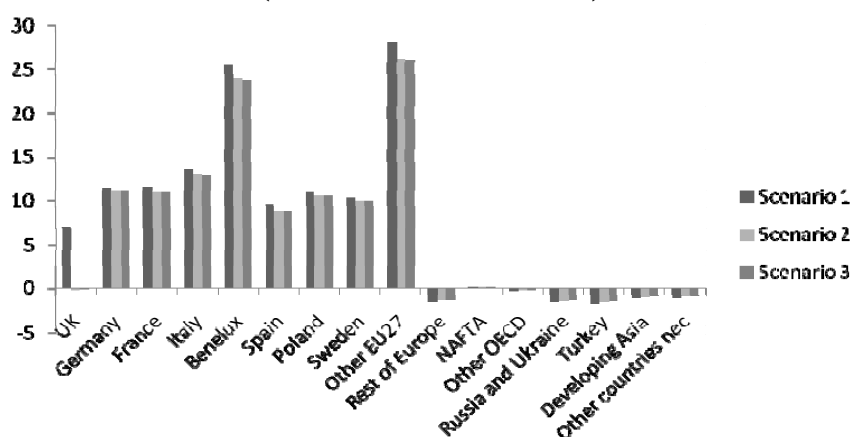
Total UK exports would increase by 3.2% in scenario 2 and decrease by 1.2% in scenario 3, against a rise by 47% in scenario 1 (Fig. 10). Wages would stay flat in both scenario 2 and 3, against an increase of 10.9% in case of further European integration.

Given the actual low level of EU external tariffs, the implementation of tariffs between UK and other EU members to the level of actual tariffs between the EU and the rest of the OECD (scenario 3) would have very similar consequences than scenario 2 overall.

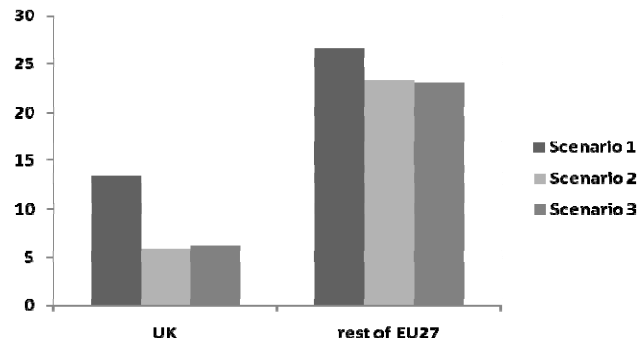
The rest of the EU would suffer if the UK were not to implement further integration steps

The non-participation of the UK in new integration steps in Europe would clearly reduce the gains for the other Member States (figure 8 to 11). In comparison to scenario 1, production would be reduced by 3.4 and 3.6 percentage points in the rest of the EU for scenario 2 and 3 respectively. For exports, it would be 5.7 and 6.2 percentage points respectively. France, CEECs and Benelux would be the most affected in terms of production (reduction between 3.5% and 7.1%).

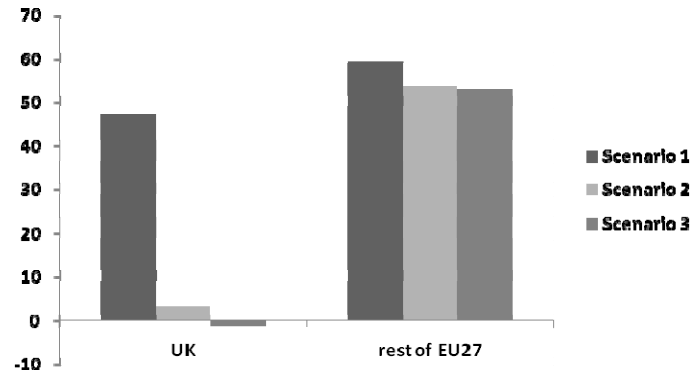
Figure 8. National income evolutions
2020
(% deviation from the baseline)



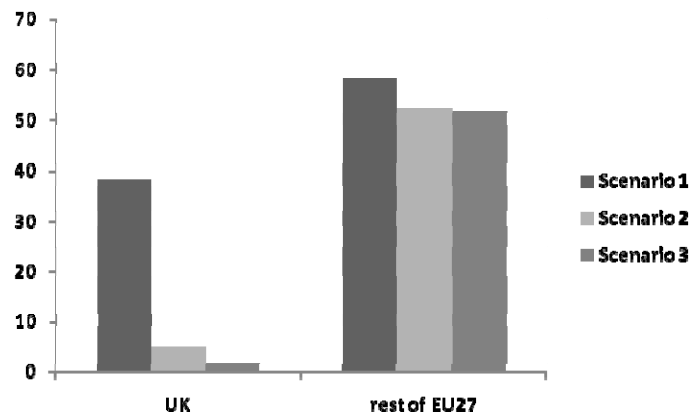
**Figure 9. Variation of production in volume
2020
(% deviation from the baseline)**



**Figure 10. Variation of total exports
2020
(% deviation from the baseline)**

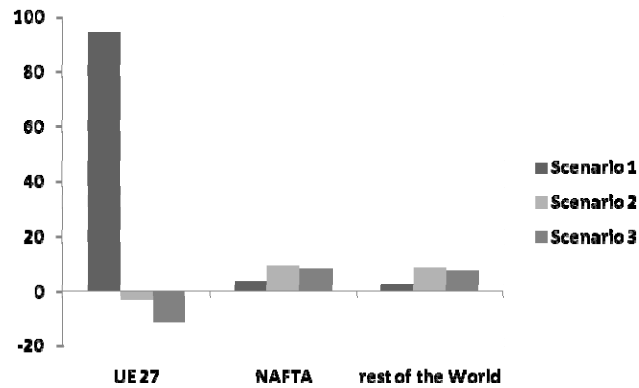


**Figure 11. Variation of total imports
2020
(% deviation from the baseline)**

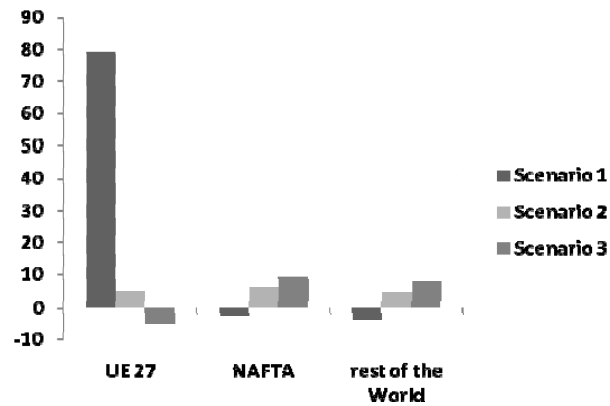


In comparison to the statu quo, exports from the UK to the rest of the EU27 would be reduced respectively by 3.3 and 11.3 percentage points in scenario 2 and 3 (figure 12). Germany and the Benelux would be the most affected by a reduction of their exports to the UK by 8% and 15% respectively for the Benelux and Germany in scenario 3.

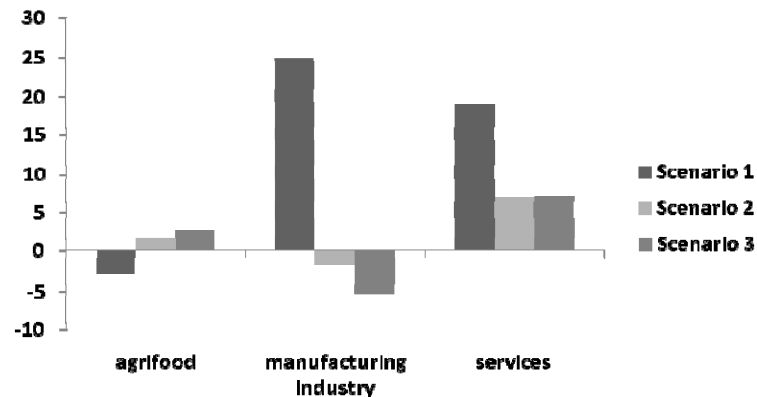
**Figure 12. Variation of UK exports by destination
2020
(% deviation from the baseline)**



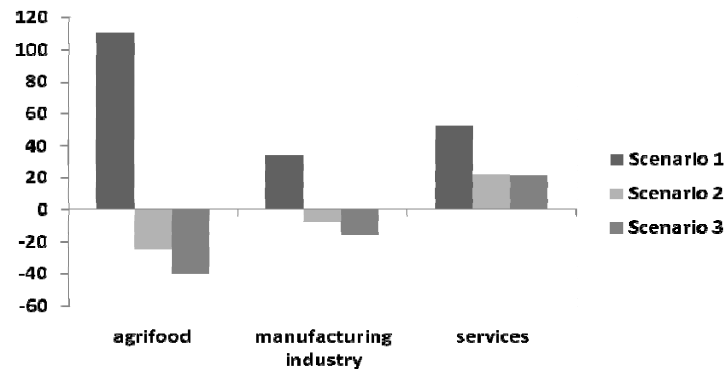
**Figure 13. Variation of UK imports by origin
2020
(% deviation from the baseline)**



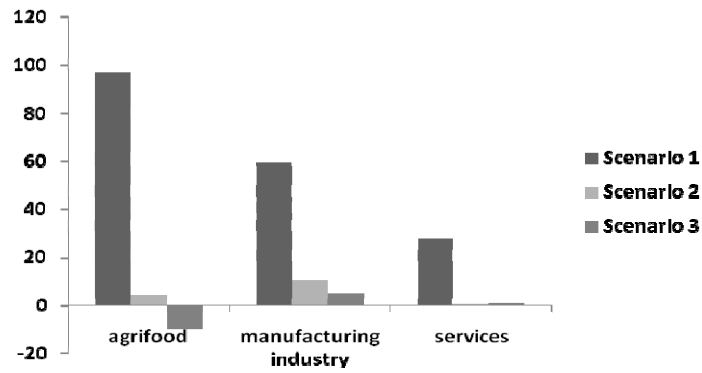
**Figure 14. Changes in UK value added by sector
2020
(% deviation from the baseline)**



**Figure 15. Changes in UK exports by sector
2020
(% deviation from the baseline)**



**Figure 16. Changes in UK imports by sector
2020
(% deviation from the baseline)**

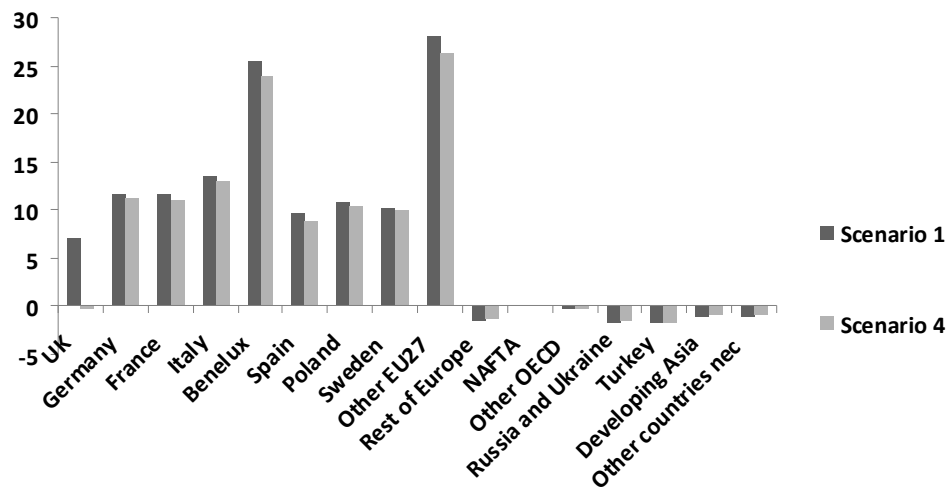


3. Is the integration with NAFTA a sensible alternative to the EU path for the UK? (Comparison of scenarios 1 and 4)

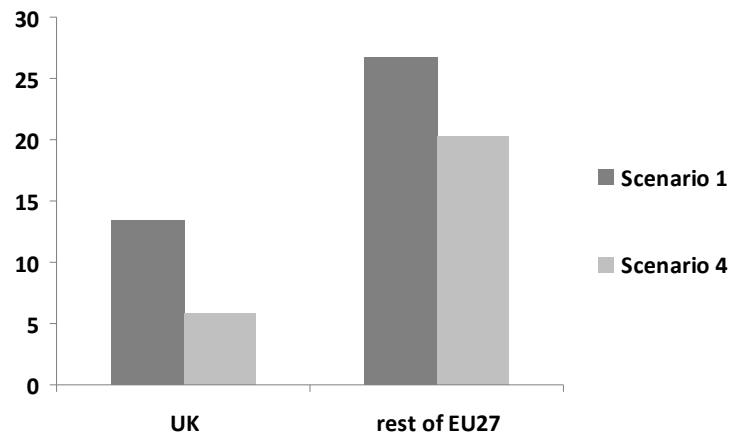
Closer economic integration with NAFTA would not compensate for looser UK links with the EU

UK national income would be negatively affected by 0.2% if the UK were to tie up the links with NAFTA instead of taking part in further EU integration. UK production in volume would increase in the same proportion than under scenario 2, by 5.9 percentage points, meaning that a free trade agreement with NAFTA could not compensate for a loosening of the ties with the rest of the EU.

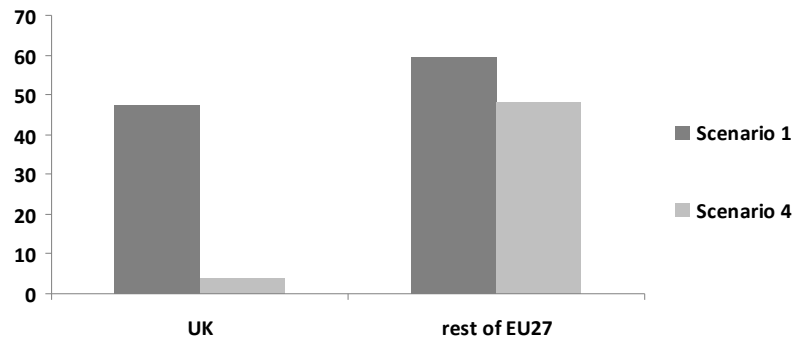
Figure 17. Changes in national income
2020
(% deviation from the baseline)



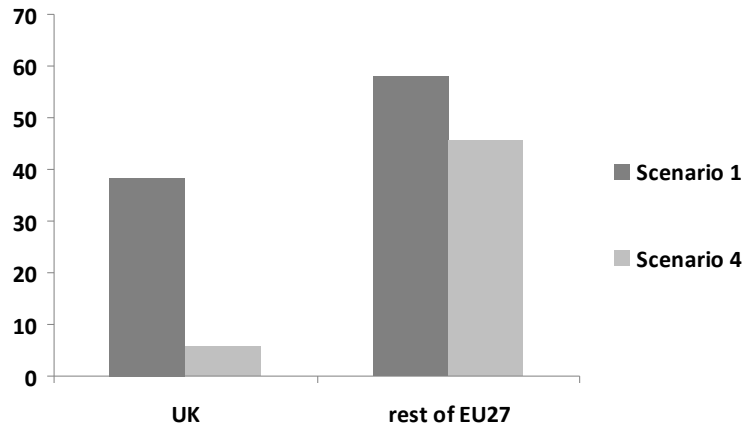
**Figure 18. Change in production in volume
2020
(% deviation from the baseline)**



**Figure 19. Changes in export
2020
(% deviation from the baseline)**

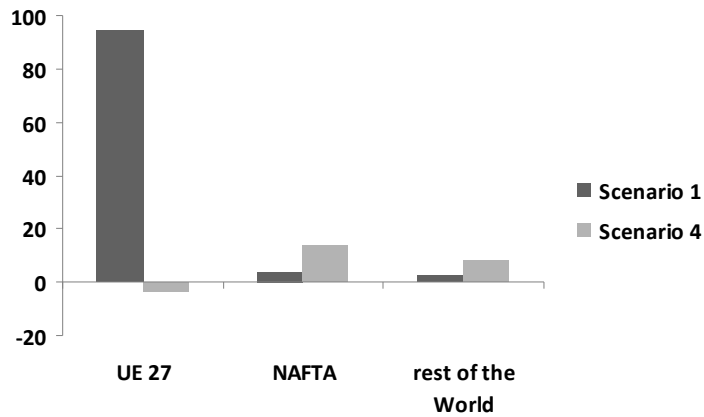


**Figure 20. Changes in imports
2020
(% deviation from the baseline)**

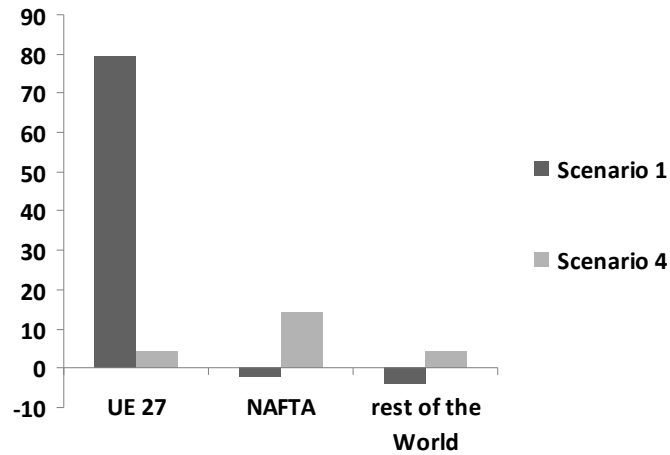


In terms of trade, its integration with NAFTA would increase UK exports and import with this region by 14% (figure 25). By contrast, exports with the rest of the EU would be reduced by 3.5% while imports would increase by 4.4%.

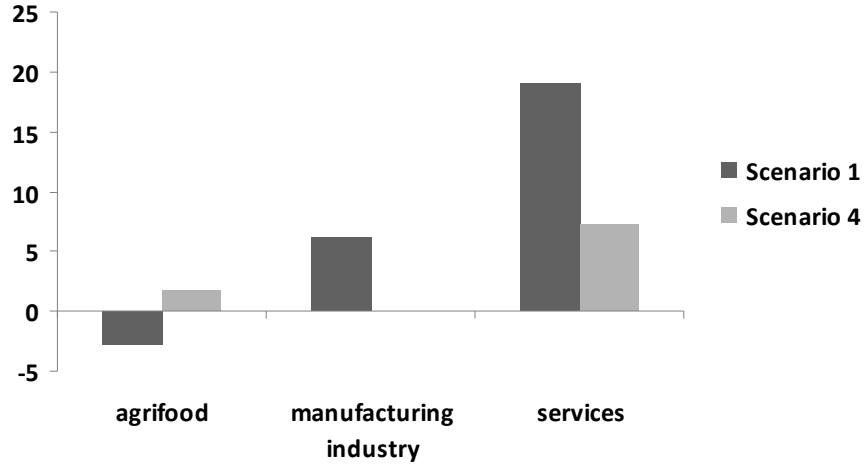
**Figure 21. Changes in UK exports by destination
2020
(% deviation from the baseline)**



**Figure 22. Changes in UK imports by origin
2020
(% deviation from the baseline)**



**Figure 23. Changes in UK value added by sector
2020
(% deviation from the baseline)**



Conclusion

As shown by this economic simulation, the gains for the European Union and each of its Member States to achieve the Single Market are very important. The results obtained in this study are higher than previous estimates due to new and more accurate data on obstacles to trade in services across Europe and to the use of a newly available database on behind the border obstacles.

In order to assess the reality of these gains, one has to keep in mind the following elements.

On the downside, the scenario assessed in this study is very ambitious as it assumes the complete elimination of obstacle to trade inside the European Union over a period of 10 years. This is certainly a very difficult and ambitious objective but the magnitude of the gains is such that the main conclusion of this work remains solid: achieving only half or a quarter of that objective has the potential to change substantially EU growth path for the years to come.

On the other hand, one has to keep in mind that the scenarios do not consider any reduction in the level of the regulation per se, but only a reduction of the bias domestic regulation in Europe may inadvertently have against competition originating in other European countries. This is an objective much more achievable than reducing the absolute level of regulation. However, if on top of this bias reduction, EU countries would achieve as well a reduction of the complexity of the rules and of the burden it creates for foreign and domestic producers, it has to capacity to represent an even more powerful boost to EU growth.

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ANNEX

Table1. sectors aggregation

Agrifood	Vegetal agriculture
	Animal agriculture
	Food industry and fishing
	Wood products
manufacturing industry	Paper Chemicals and Mineral products
	Oil and gas
	Petroleum products
	Metal products
	Other primary products
	Metals
	Textile Leather and Clothing
	Machinery and other equipment
	Cars and trucks
	Other transport equipment
	Electronic equipment
	Other manufactures
Services	Construction
	Maritime transport
	Transport
	Finance
	Insurance
	Business services
	Trade
	Communication services
	Public services
	Other services

Table 2. Country aggregation

UK
Germany
France
Italy
Benelux
Spain
Poland
Sweden
Other EU27
Rest of Europe
NAFTA
Other OECD
Russia and Ukraine
Turkey
Developing Asia
Other countries nec

Table 3. Change in national income - 2020

in %	Scenario 1	Scenario 2	Scenario 3	Scenario 4
UK	7.2	-0.3	-0.2	-0.2
Germany	11.6	11.1	11.1	11.1
France	11.7	11.0	10.9	10.9
Italy	13.6	13.0	13.0	13.0
Benelux	25.4	24.0	23.8	23.9
Spain	9.6	8.9	8.8	8.9
Poland	10.9	10.5	10.5	10.5
Sweden	10.3	10.0	10.0	10.0
Other EU27	28.1	26.2	26.2	26.2
Rest of Europe	-1.6	-1.4	-1.4	-1.4
NAFTA	0.1	0.1	0.1	0.1
Other OECD	-0.4	-0.3	-0.3	-0.3
Russia and Ukraine	-1.6	-1.4	-1.4	-1.4
Turkey	-1.8	-1.6	-1.5	-1.6
Developing Asia	-1.2	-1.0	-0.9	-1.0
Other countries nec	-1.1	-0.9	-0.9	-0.9

Table 4. Change in the volume of production - 2020

%	Scenario 1	Scenario 2	Scenario 3	Scenario 4
UK	13.4	5.9	6.2	5.9
Germany	22.5	19.8	19.6	19.8
France	17.5	14.0	13.8	14.0
Italy	14.7	12.0	11.8	11.9
Benelux	62.1	55.2	55.0	55.2
Spain	16.7	14.0	13.8	13.9
Poland	23.0	21.0	20.8	20.9
Sweden	24.4	22.1	21.9	22.0
Other EU27	39.8	35.9	35.7	35.9
Rest of Europe	5.9	4.4	4.4	4.4
NAFTA	8.7	6.8	6.9	6.9
Other OECD	7.4	5.8	5.9	5.8
Russia and Ukraine	6.1	4.7	4.7	4.7
Turkey	3.3	2.0	2.2	1.9
Developing Asia	6.4	5.1	5.1	5.1
Other countries nec	6.5	5.1	5.1	5.1
Total EU 27	24.4	20.3	20.2	20.2

Table 5. Change in production - 2020

in billions \$	Value	Initial		Change in value	
		Scenario 1	Scenario 2	Scenario 3	Scenario 4
UK	2 194	431	188	199	190
Germany	2 773	813	716	710	715
France	2 100	495	397	392	396
Italy	1 704	292	237	234	237
Benelux	990	860	765	761	764
Spain	1 075	276	231	228	231
Poland	246	106	97	96	97
Sweden	361	127	115	114	115
Other EU27	1 786	1 087	980	974	979
Rest of Europe	763	66	50	49	49
NAFTA	13 820	1 779	1 405	1 409	1 410
Other OECD	6 270	643	503	510	502
Russia and Ukraine	681	96	74	74	74
Turkey	322	21	12	14	12
Developing Asia	4 099	743	586	591	585
Other countries nec	8 535	1 355	1 061	1 069	1 060
Total EU 27	13 229	4 487	3 726	3 709	3 724

Table 6. Change in skilled real wages -2020

in %	Scenario 1	Scenario 2	Scenario 3	Scenario 4
UK	10.9	-0.3	-0.7	-0.2
Germany	14.5	14.0	13.9	14.0
France	15.5	14.7	14.7	14.7
Italy	19.9	19.2	19.2	19.2
Benelux	31.7	30.2	30.0	30.2
Spain	13.6	12.8	12.7	12.7
Poland	14.4	14.1	14.1	14.1
Sweden	13.9	13.5	13.5	13.5
Other EU27	37.3	35.1	35.0	35.1
Rest of Europe	-1.3	-1.2	-1.2	-1.2
NAFTA	0.3	0.2	0.2	0.2
Other OECD	-0.3	-0.2	-0.2	-0.3
Russia and Ukraine	-1.6	-1.4	-1.4	-1.4
Turkey	-1.5	-1.3	-1.2	-1.4
Developing Asia	-1.3	-1.1	-1.0	-1.1
Other countries nec	-0.6	-0.5	-0.5	-0.5

Table 7. Change in exports - 2020

in %	Scenario 1	Scenario 2	Scenario 3	Scenario 4
UK	47.3	3.2	-1.2	3.9
Germany	42.5	38.8	38.3	38.7
France	58.1	52.1	51.4	52.0
Italy	66.7	61.8	61.3	61.7
Benelux	67.1	60.0	59.1	59.8
Spain	62.1	55.6	54.6	55.5
Poland	51.8	47.6	47.5	47.6
Sweden	36.3	33.1	32.8	33.0
Other EU27	75.1	67.7	67.3	67.6
Rest of Europe	6.4	4.6	4.6	4.6
NAFTA	6.3	4.9	5.0	5.1
Other OECD	7.8	6.0	6.2	6.0
Russia and Ukraine	6.5	4.8	4.8	4.8
Turkey	-2.2	-3.1	-2.5	-3.1
Developing Asia	6.8	5.3	5.4	5.3
Other countries nec	6.8	5.2	5.3	5.2
Total EU 27	58.1	48.1	47.1	48.1

Table 8. Change in exports - 2020

in millions \$	value	Initial		Change in value	
		Scenario 1	Scenario 2	Scenario 3	Scenario 4
UK	456	292	20	-8	24
Germany	940	529	483	478	482
France	492	374	335	331	335
Italy	396	322	298	295	297
Benelux	535	466	417	411	416
Spain	249	218	195	191	195
Poland	76	66	60	60	60
Sweden	148	74	68	67	68
Other EU27	821	863	778	773	777
Rest of Europe	314	28	20	20	20
NAFTA	1 628	149	115	117	120
Other OECD	1 066	122	94	97	94
Russia and Ukraine	248	33	25	25	25
Turkey	87	-4	-5	-4	-5
Developing Asia	1 876	266	208	211	208
Other countries nec	3 344	445	346	350	345
Total EU 27	4 112	3 205	2 653	2 599	2 655

Table 9. Change in imports - 2020

in %	Scenario 1	Scenario 2	Scenario 3	Scenario 4
UK	38.3	5.1	1.8	5.7
Germany	46.4	42.5	42.1	42.5
France	54.9	49.1	48.4	49.0
Italy	62.3	57.5	57.1	57.5
Benelux	61.5	54.9	54.1	54.8
Spain	52.2	46.5	45.7	46.5
Poland	44.5	40.6	40.5	40.6
Sweden	40.7	37.3	36.9	37.3
Other EU27	73.3	66.1	65.7	66.0
Rest of Europe	6.1	4.3	4.3	4.3
NAFTA	8.3	6.6	6.6	6.7
Other OECD	7.5	5.8	6.0	5.7
Russia and Ukraine	5.1	3.7	3.7	3.7
Turkey	0.3	-0.8	-0.4	-0.9
Developing Asia	6.4	5.0	5.1	5.0
Other countries nec	6.3	4.9	5.0	4.9
Total EU 27	55.3	45.8	44.9	45.8

Table 10. Change in imports - 2020

in millions \$	value	Initial		Change in value	
		Scenario 1	Scenario 2	Scenario 3	Scenario 4
UK	588	321	42	15	47
Germany	851	512	469	464	469
France	523	383	342	338	342
Italy	423	328	303	300	302
Benelux	585	480	428	422	427
Spain	304	230	205	202	205
Poland	95	70	64	64	64
Sweden	128	71	65	64	65
Other EU27	843	871	785	780	784
Rest of Europe	293	25	17	18	17
NAFTA	2 232	278	220	222	225
Other OECD	971	106	82	84	81
Russia and Ukraine	180	21	15	15	15
Turkey	106	1	-2	-1	-2
Developing Asia	1 711	235	184	187	184
Other countries nec	3 006	382	296	300	295
Total EU 27	4 340	3 265	2 704	2 650	2 706

Table 11. Change of UK exports by destination - 2020

in %	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Germany	61.7	-2.7	-9.8	-3.0
France	82.3	-10.7	-19.3	-10.9
Italy	100.1	-14.4	-24.9	-14.4
Benelux	99.2	31.0	23.3	30.5
Spain	88.6	-5.6	-17.8	-5.6
Poland	81.6	-15.9	-23.5	-16.0
Sweden	52.5	7.1	-1.1	6.9
Other EU27	131.0	-22.5	-29.1	-22.7
Rest of Europe	2.9	9.1	7.5	8.9
NAFTA	3.9	9.3	8.3	14.2
Other OECD	3.8	7.8	7.0	7.7
Russia and Ukraine	3.7	8.5	7.2	8.3
Turkey	-8.1	-4.4	-6.0	-4.4
Developing Asia	3.2	9.2	8.5	9.0
Other countries nec	2.4	8.6	7.6	8.5
Total UE 27	94.5	-3.3	-11.3	-3.5

Table 12. Change of UK exports by destination - 2020

in millions \$	value	Initial		Change in value	
		Scenario 1	Scenario 2	Scenario 3	Scenario 4
Germany	48	35	-2	-6	-2
France	37	38	-5	-9	-5
Italy	19	20	-3	-5	-3
Benelux	44	58	18	14	18
Spain	22	25	-2	-5	-2
Poland	4	4	-1	-1	-1
Sweden	10	6	1	0	1
Other EU27	60	99	-17	-22	-17
Rest of Europe	13	0	2	1	2
NAFTA	83	5	11	10	17
Other OECD	27	1	2	2	2
Russia and Ukraine	6	0	1	1	1
Turkey	5	-1	0	0	0
Developing Asia	38	2	7	6	7
Other countries nec	89	4	13	12	13
Total UE 27	302	588	293	268	292

Table 13. Change in UK imports by origin - 2020

in %	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Germany	50	-6.6	-15.2	-7.1
France	82.1	9.3	-2.6	8.5
Italy	94	14.2	3	13.5
Benelux	103.9	-1.2	-12.2	-1.8
Spain	65.3	5.9	-3.6	5.3
Poland	58.9	4.7	-5.4	4.1
Sweden	40.1	-9.3	-15.4	-9.7
Other EU27	101.1	18.1	8.3	17.6
Rest of Europe	0.7	3.0	4.4	3.4
NAFTA	-2.4	6.1	9.3	14.4
Other OECD	4.2	7.7	17.6	7.0
Russia and Ukraine	1	6.2	7	6.3
Turkey	-28.4	-6	5.1	-6.7
Developing Asia	-4.2	4.7	6.8	4.6
Other countries nec	-4.5	4.6	7.3	4.5
UE 27	79.3	5	-5	4.4

Table 14. Change in UK imports by origin- 2020

in millions \$	value	Initial		Change in value	
		Scenario 1	Scenario 2	Scenario 3	Scenario 4
Germany	75	49	-6	-15	-7
France	50	53	6	-2	6
Italy	27	31	5	1	4
Benelux	54	71	-1	-8	-1
Spain	30	28	3	-2	2
Poland	4	4	0	0	0
Sweden	12	6	-1	-2	-2
Other EU27	63	89	16	7	15
Rest of Europe	24	0	1	1	1
NAFTA	71	-2	6	9	14
Other OECD	33	2	4	8	3
Russia and Ukraine	6	0	1	1	1
Turkey	7	-4	-1	1	-1
Developing Asia	78	-7	8	11	8
Other countries nec	130	-11	11	18	11
Total UE 27	308	540	314	282	312

Table 15. Change in UK exports by sector - 2020

in %	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Vegetal agriculture	174.7	-8.4	-38.1	-7.1
Animal agriculture	47.2	4.3	1.1	4.4
Food industry and fishing	109.7	-28.8	-43.7	-25.3
Wood products	39.7	0.8	-2.3	0.9

Paper Chemicals and Mineral products	93.4	-58.4	-59.0	-57.4
Oil and gas	12.6	16.9	17.0	16.7
Petroleum products	21.8	-17.7	-20.2	-14.1
Metal products	32.2	30.9	21.4	32.8
Other primary products	11.6	10.7	10.7	10.6
Metals	8.1	9.1	5.9	9.5
Textile Leather and Clothing	13.9	-62.2	-62.5	-57.8
Machinery and other equipment	27.4	21.2	14.7	22.8
Cars and trucks	15.0	5.2	-27.8	10.6
Other transport equipment	10.3	37.0	28.3	36.5
Electronic equipment	17.9	-8.1	-17.6	-8.3
Other manufactures	72.2	-12.8	-15.1	-12.0
Construction	32.8	7.6	7.2	7.5
Maritime transport	28.0	-2.6	-2.8	-2.7
Transport	25.4	10.6	10.2	10.4
Finance	109.9	37.9	36.8	37.4
Insurance	33.6	16.1	15.8	15.9
Business services	48.2	21.4	20.7	21.1
Trade	37.7	6.6	6.2	6.4
Communication services	53.5	23.5	22.9	23.2
Public services	32.9	20.0	19.8	19.7
Other services	16.4	26.4	25.8	26.1

Table 16. Change in UK export by sector - 2020

in millions \$	Initial	Change in value			
	value	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Vegetal agriculture	1.3	3.9	-0.2	-0.9	-0.2
Animal agriculture	1.1	0.9	0.1	0.0	0.1
Food industry and fishing	18.2	26.2	-6.9	-10.4	-6.0
Wood products	1.8	1.1	0.0	-0.1	0.0
Paper Chemicals and Mineral products	75.0	77.7	-48.6	-49.0	-47.7
Oil and gas	12.9	4.6	6.2	6.2	6.1
Petroleum products	6.8	2.5	-2.0	-2.3	-1.6

Metal products	6.8	2.5	2.4	1.7	2.6
Other primary products	8.0	2.3	2.1	2.1	2.1
Metals	15.4	1.4	1.6	1.0	1.6
Textile Leather and Clothing	9.9	1.4	-6.1	-6.1	-5.6
Machinery and other equipment	55.8	9.3	7.2	5.0	7.7
Cars and trucks	37.5	9.4	3.3	-17.4	6.6
Other transport equipment	10.1	1.3	4.8	3.7	4.8
Electronic equipment	31.3	5.0	-2.3	-4.9	-2.3
Other manufactures	6.5	7.2	-1.3	-1.5	-1.2
Construction	0.8	0.5	0.1	0.1	0.1
Maritime transport	3.2	1.5	-0.1	-0.2	-0.1
Transport	19.5	7.8	3.2	3.1	3.2
Finance	25.6	51.6	17.8	17.3	17.6
Insurance	12.9	8.5	4.1	4.0	4.0
Business services	63.3	46.2	20.5	19.8	20.2
Trade	9.5	4.9	0.9	0.8	0.8
Communication services	5.8	3.9	1.7	1.7	1.7
Public services	8.3	5.4	3.2	3.2	3.2
Other services	8.1	2.0	3.2	3.1	3.1

Table 17. Change in UK imports by sector - 2020

in %	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Vegetal agriculture	18.3	0.3	-5.8	2.2
Animal agriculture	0.0	-4.5	-6.4	-2.9
Food industry and fishing	129.2	6.1	-11.2	7.7
Wood products	5.2	0.5	-0.6	0.8
Paper Chemicals and Mineral products	94.6	15.6	13.0	16.3
Oil and gas	11.2	-2.6	-2.7	-1.3
Petroleum products	20.2	18.4	17.0	18.7
Metal products	12.5	-4.5	-8.0	-2.9
Other primary products	7.1	4.5	4.4	4.6

Metals	12.3	9.7	7.0	10.5
Textile Leather and Clothing	44.8	12.3	5.9	12.6
Machinery and other equipment	13.4	-1.8	-2.9	-0.9
Cars and trucks	15.2	5.0	-4.9	5.4
Other transport equipment	16.9	-5.6	-6.1	-4.3
Electronic equipment	15.7	6.3	5.8	6.4
Other manufactures	99.3	5.7	5.8	6.5
Construction	112.1	5.4	5.9	5.5
Maritime transport	14.2	5.3	5.3	5.4
Transport	16.9	2.5	2.9	2.7
Finance	5.2	-6.7	-6.4	-6.4
Insurance	42.7	-3.8	-3.4	-3.6
Business services	40.8	-0.9	-0.4	-0.7
Trade	53.3	4.8	5.4	5.1
Communication services	26.6	0.5	0.9	0.7
Public services	24.7	-2.8	-2.5	-2.5
Other services	16.0	0.7	1.1	0.9

Table 18. Change UK imports by sector

in millions \$	Initial	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Vegetal agriculture	12	2.5	0.0	-0.8	0.3
Animal agriculture	1	0.0	-0.1	-0.1	0.0
Food industry and fishing	34	49.0	2.3	-4.3	2.9
Wood products	14	0.9	0.1	-0.1	0.1
Paper Chemicals and Mineral products	86	116.7	19.3	16.1	20.1
Oil and gas	10	1.7	-0.4	-0.4	-0.2
Petroleum products	6	2.2	2.0	1.8	2.0
Metal products	12	2.2	-0.8	-1.4	-0.5

Other primary products	11	1.2	0.8	0.7	0.8
Metals	19	3.0	2.4	1.7	2.6
Textile Leather and Clothing	37	25.7	7.0	3.4	7.2
Machinery and other equipment	66	14.0	-1.9	-3.1	-0.9
Cars and trucks	65	15.0	4.9	-4.9	5.4
Other transport equipment	10	2.4	-0.8	-0.9	-0.6
Electronic equipment	59	12.7	5.1	4.7	5.2
Other manufactures	13	20.8	1.2	1.2	1.4
Construction	1	0.9	0.0	0.1	0.0
Maritime transport	6	1.2	0.5	0.5	0.5
Transport	32	8.0	1.2	1.4	1.3
Finance	13	0.7	-0.9	-0.9	-0.9
Insurance	2	1.2	-0.1	-0.1	-0.1
Business services	36	18.0	-0.4	-0.2	-0.3
Trade	13	11.2	1.0	1.1	1.1
Communication services	6	2.3	0.0	0.1	0.1
Public services	14	4.3	-0.5	-0.4	-0.4
Other services	11	2.5	0.1	0.2	0.1

Table 19. Change in UK volume of production by sector

in %	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Vegetal agriculture	2.9	2.7	4.8	1.6
Animal agriculture	-10.9	-3.1	-2.2	-3.0
Food industry and fishing	-13.9	-3.1	-1.0	-3.1
Wood products	-1.1	3.7	3.7	3.4
Paper Chemicals and Mineral products	-13.7	-24.3	-23.3	-24.2
Oil and gas	2.1	1.7	1.7	1.5
Petroleum products	-0.3	-10.9	-11.1	-10.3
Metal products	2.5	7.7	6.2	7.7
Other primary products	-0.0	1.0	0.9	1.0
Metals	-1.0	7.1	4.2	7.2

Textile Leather and Clothing	-49.0	-25.6	-17.3	-24.9
Machinery and other equipment	11.0	12.3	9.6	12.4
Cars and trucks	7.4	1.3	-5.2	3.3
Other transport equipment	0.3	13.8	11.4	13.3
Electronic equipment	7.5	-10.2	-17.5	-10.4
Other manufactures	-13.2	-2.3	-2.5	-2.3
Construction	4.7	-0.1	-0.0	-0.0
Maritime transport	6.5	-3.6	-3.9	-3.7
Transport	0.4	0.2	0.2	0.2
Finance	39.7	11.8	11.3	11.6
Insurance	7.1	1.9	1.9	1.8
Business services	4.5	1.8	1.8	1.8
Trade	2.8	0.1	0.2	0.1
Communication services	4.7	2.3	2.3	2.2
Public services	2.7	0.3	0.5	0.3
Other services	0.7	-0.1	0.1	-0.1

Table 20. Change in production by sector - 2020 in millions \$

in millions \$	Initial	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Vegetal agriculture	9	0.4	0.4	0.6	0.2
Animal agriculture	13	-1.9	-0.5	-0.4	-0.5
Food industry and fishing	135	-23.2	-5.2	-1.7	-5.2
Wood products	14	-0.2	0.7	0.7	0.7
Paper Chemicals and Mineral products	191	-32.7	-58.0	-55.6	-57.7
Oil and gas	27	1.2	1.0	1.0	0.9
Petroleum products	32	-0.1	-5.6	-5.6	-5.3
Metal products	53	1.6	4.9	4.0	5.0
Other primary products	9	0.0	0.2	0.2	0.2

Metals	31	-0.3	2.3	1.3	2.3
Textile Leather and Clothing	31	-16.0	-8.3	-5.6	-8.1
Machinery and other equipment	119	15.8	17.6	13.8	17.8
Cars and trucks	73	5.7	1.0	-4.0	2.5
Other transport equipment	36	0.1	6.5	5.3	6.2
Electronic equipment	39	2.6	-3.5	-6.0	-3.5
Other manufactures	35	-6.7	-1.2	-1.3	-1.2
Construction	281	18.3	-0.3	-0.1	-0.2
Maritime transport	5	0.5	-0.3	-0.3	-0.3
Transport	210	1.2	0.6	0.5	0.6
Finance	110	61.8	18.3	17.6	18.0
Insurance	80	8.3	2.2	2.3	2.2
Business services	699	43.0	17.2	17.2	16.9
Trade	410	17.2	0.4	1.4	0.4
Communication services	93	5.7	2.8	2.8	2.8
Public services	680	26.7	3.0	5.1	2.9
Other services	184	1.8	-0.1	0.2	-0.2

Table 21. Change in UK value added by sector

in %	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Vegetal agriculture	11.4	8.4	9.7	6.9
Animal agriculture	-1.3	1.8	2.9	2.0
Food industry and fishing	-4.6	0.9	2.2	1.1
Wood products	12.0	9.0	9.0	8.9
Paper Chemicals and Mineral products	-10.0	-24.7	-23.8	-24.5
Oil and gas	9.9	7.9	7.8	8.0
Petroleum products	14.6	-6.3	-6.5	-5.4
Metal products	17.9	13.7	12.2	14.0
Other primary products	10.5	9.1	8.9	9.1
Metals	12.9	12.3	9.4	12.6

Textile Leather and Clothing	-44.7	-24.7	-16.5	-23.7
Machinery and other equipment	25.2	18.1	15.3	18.5
Cars and trucks	23.3	6.6	-0.1	9.1
Other transport equipment	14.7	20.4	17.8	20.0
Electronic equipment	18.2	-6.4	-14.1	-6.5
Other manufactures	-2.6	2.4	2.1	2.4
Construction	18.9	6.0	6.1	6.1
Maritime transport	16.2	7.0	6.9	7.1
Transport	15.0	6.4	6.4	6.5
Finance	55.0	19.6	19.1	19.5
Insurance	22.8	8.3	8.4	8.4
Business services	17.6	8.3	8.3	8.3
Trade	17.5	5.9	6.1	6.0
Communication services	19.5	8.7	8.7	8.7
Public services	19.7	6.2	6.4	6.3
Other services	15.1	6.2	6.4	6.2

Table 22. Equivalent ad valorem of Non tariff barriers for EU exporters, average by importers and sector

	UK	Germany	France	Italy	Benelux	Spain	Poland	Sweden
Vegetal agriculture	38.1	43.9	48.9	28.0	49.0	31.9	22.6	34.4
Animal agriculture	16.0	32.0	18.1	18.4	38.1	21.2	23.5	14.9
Food industry and fishing	63.4	66.0	71.5	63.6	63.9	64.9	52.2	59.4
Wood products	-	-	-	-	-	-	-	-
Paper Chemicals and Mineral products	77.0	84.6	109.5	107.2	81.9	83.3	16.1	58.2
Oil and gas	-	-	-	-	-	-	-	-
Petroleum products	-	-	-	-	-	-	14.4	0.0
Metal products	-	-	-	-	-	-	-	-
Other primary products	-	-	-	-	-	-	-	-
Metals	-	-	-	-	-	-	-	-
Textile Leather and Clothing	41.3	44.6	49.4	51.8	43.5	44.5	17.2	41.2
Machinery and other equipment	-	-	-	-	-	-	26.7	-
Cars and trucks	-	-	-	-	-	-	14.9	-
Other transport equipment	-	-	-	-	-	-	24.8	-
Electronic equipment	-	-	-	-	-	-	-	-
Other manufactures	66.4	54.5	63.0	57.0	59.2	63.7	11.8	51.3
	Other EU27	Rest of Europe	NAFTA	Other OECD	Russia and Ukraine	Turkey	Developing Asia	Other countries nec
Vegetal agriculture	41.1	29.3	24.2	28.3	30.7	-	36.5	33.6
Animal agriculture	27.9	29.3	41.5	28.8	16.8	-	46.1	39.6
Food industry and fishing	60.7	52.0	60.2	62.6	49.8	-	55.6	55.9
Wood products	34.5	24.4	27.5	41.6	51.6	62.4	49.3	58.9
Paper Chemicals and Mineral products	61.8	26.9	29.9	42.6	45.7	53.9	42.9	43.8
Oil and gas	-	-	141.9	145.0	129.9	-	124.2	131.0
Petroleum products	25.7	122.8	35.4	20.5	45.7	-	47.8	34.8
Metal products	18.7	14.0	41.4	14.8	34.5	34.9	30.4	54.1
Other primary products	-	27.5	9.5	39.2	20.9	-	29.4	40.1
Metals	22.7	24.0	32.8	76.4	45.9	34.5	29.6	35.1
Textile Leather and Clothing	47.9	34.2	37.1	27.2	30.8	90.1	47.8	44.6
Machinery and other equipment	33.1	26.1	38.5	39.4	54.1	39.5	41.8	41.4
Cars and trucks	16.5	24.6	21.3	13.8	26.8	19.7	29.0	34.3
Other transport equipment	30.5	37.3	36.2	21.9	43.2	50.2	34.3	42.4
Electronic equipment	34.4	28.0	26.6	34.9	45.3	34.0	38.5	49.3
Other manufactures	46.8	63.1	19.4	29.1	33.9	67.8	50.2	47.1
- missing								

Table 23. Equivalent ad valorem of Non tariff barriers, for non-EU exporters , average by importers and sector

	UK	Germany	France	Italy	Benelux	Spain	Poland	Sweden
Vegetal agriculture	40.7	46.8	52.2	30.1	52.2	34.1	24.3	36.9
Animal agriculture	17.4	34.3	19.7	20.0	40.6	23.0	25.6	16.2
Food industry and fishing	68.0	70.7	76.6	68.2	68.6	69.6	55.6	63.8
Wood products	-	-	-	-	-	-	-	-
Paper Chemicals and Mineral products	79.5	87.2	112.8	109.1	84.5	85.4	16.1	59.5
Oil and gas	-	-	-	-	-	-	-	-
Petroleum products	-	-	-	-	-	-	-	-
Metal products	-	-	-	-	-	-	-	-
Other primary products	-	-	-	-	-	-	-	-
Metals	-	-	-	-	-	-	-	-
Textile Leather and Clothing	41.7	45.0	49.9	52.3	43.9	45.0	17.8	41.6
Machinery and other equipment	-	-	-	-	-	-	32.5	-
Cars and trucks	-	-	-	-	-	-	22.8	-
Other transport equipment	-	-	-	-	-	-	36.6	-
Electronic equipment	-	-	-	-	-	-	-	-
Other manufactures	78.0	64.0	74.0	66.9	69.5	74.7	13.8	60.2
	Other EU27	Rest of Europe	NAFTA	Other OECD	Russia and Ukraine	Turkey	Developing Asia	Other countries nec
Vegetal agriculture	44.0	29.3	24.2	28.3	30.7	-	36.5	33.6
Animal agriculture	30.2	29.3	41.5	28.8	16.8	-	46.1	39.6
Food industry and fishing	65.0	52.0	60.2	62.6	49.8	-	55.6	55.9
Wood products	34.5	24.4	27.5	41.6	51.6	62.4	49.3	59.0
Paper Chemicals and Mineral products	63.9	26.9	29.9	42.6	45.7	53.9	42.9	43.7
Oil and gas	-	-	141.9	145.0	129.9	-	124.2	131.0
Petroleum products	33.2	122.8	35.4	20.5	45.7	-	47.8	34.7
Metal products	20.3	14.0	41.4	14.8	34.5	34.9	30.4	54.1
Other primary products	0.0	27.5	9.5	39.2	20.9	-	29.4	40.1
Metals	23.7	24.0	32.8	76.4	45.9	34.5	29.6	34.9
Textile Leather and Clothing	48.4	34.2	37.1	27.2	30.8	90.1	47.8	44.5
Machinery and other equipment	40.3	26.1	38.5	39.4	54.1	39.5	41.8	41.4
Cars and trucks	25.1	24.6	21.3	13.8	26.8	19.7	29.0	34.4
Other transport equipment	45.0	37.3	36.2	21.9	43.2	50.2	34.3	42.4
Electronic equipment	43.5	28.0	26.6	34.9	45.3	34.0	38.5	49.4
Other manufactures	55.0	63.1	19.4	29.1	33.9	67.8	50.2	47.1

- missing

Source: Kee *et al.* 2009

Table 24. Equivalent ad valorem of Barriers in services, average by importers and sector

	UK	Germany	France	Italy	Benelux	Spain	Poland	Sweden
Construction	65.7	12.1	29.0	26.9	22.5	68.3	34.8	32.0
Maritime transport	5.0	8.8	16.4	19.7	15.9	27.3	35.7	15.1
Transport	30.3	30.4	32.5	34.6	53.7	61.5	50.3	36.5
Finance	15.8	24.4	40.1	51.0	11.2	37.9	50.6	30.2
Insurance	36.0	39.3	61.7	39.9	29.9	41.2	27.6	40.6
Business services	24.7	13.5	28.4	26.1	11.4	23.4	38.2	10.8
Trade	27.6	15.2	33.4	23.4	22.4	46.4	66.4	29.6
Communication services	18.5	18.0	30.0	18.2	12.3	31.2	27.4	18.2
Public services	13.0	19.1	31.7	26.8	20.0	44.6	46.9	28.7
Other services	-	-	-	-	-	-	-	-
	Other EU27	Rest of Europe	NAFTA	Other OECD	Russia and Ukraine	Turkey	Developing Asia	Other countries nec
Construction	43.0	93.6	77.7	65.6	35.6	81.4	60.2	91.6
Maritime transport	26.6	22.2	21.1	18.3	16.6	41.9	25.2	28.0
Transport	46.7	72.4	76.3	35.3	111.4	55.9	54.7	66.2
Finance	44.9	61.8	36.3	51.4	55.9	38.0	61.2	57.9
Insurance	46.5	54.8	20.2	51.1	37.2	63.2	35.6	39.6
Business services	35.2	50.5	53.1	36.6	30.7	88.1	40.1	53.1
Trade	40.9	48.2	42.9	43.0	34.7	52.7	38.7	56.1
Communication services	33.7	45.9	31.7	32.2	38.1	64.3	59.0	45.1
Public services	32.3	33.9	22.3	34.6	33.4	39.5	33.0	32.1
Other services	-	-	-	10.7	-	-	10.9	9.4

Source: Fontagné *et al.* 2009

Table 25. Equivalent ad valorem of Tariffs, weighted average by importers and sector

	UK	Germany	France	Italy	Benelux	Spain	Poland	Sweden
Vegetal agriculture	12.6	11.9	12.3	12.9	12.5	13.0	13.0	12.8
Animal agriculture	2.1	3.3	0.8	0.5	1.4	2.2	1.1	0.6
Food industry and fishing	23.3	15.1	9.8	23.6	16.5	9.9	10.8	16.0
Wood products	0.9	0.5	0.4	0.5	1.0	0.4	0.9	0.3
Paper Chemicals and Mineral products	1.5	1.4	1.1	1.1	1.7	1.1	1.4	1.2
Oil and gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Petroleum products	1.8	1.2	1.3	1.0	1.5	1.7	0.4	0.6
Metal products	2.0	1.6	1.9	1.8	2.2	2.0	1.8	1.7
Other primary products	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Metals	0.4	0.8	0.7	0.3	0.9	0.4	1.8	0.5
Textile Leather and Clothing	5.8	4.8	4.7	4.2	5.9	5.2	6.5	6.0
Machinery and other equipment	1.4	1.1	1.1	1.2	1.3	1.1	1.4	1.0
Cars and trucks	6.1	6.2	4.8	6.0	6.3	7.1	3.8	4.9
Other transport equipment	1.4	1.2	1.1	1.6	2.1	1.6	0.5	1.1
Electronic equipment	1.4	1.0	1.4	2.0	1.5	2.3	1.0	1.8
Other manufactures	1.1	1.1	1.1	1.4	1.0	1.5	1.9	1.5
	Other EU27	Rest of Europe	NAFTA	Other OECD	Russia and Ukraine	Turkey	Developing Asia	Other countries nec
Vegetal agriculture	13.2	46.4	3.2	53.3	9.6	16.1	21.3	11.3
Animal agriculture	1.3	9.6	1.7	5.8	5.5	1.5	8.9	5.8
Food industry and fishing	22.2	25.9	6.3	23.7	15.5	20.1	17.9	14.1
Wood products	0.8	1.1	0.4	2.1	15.3	0.6	5.5	11.3
Paper Chemicals and Mineral products	1.7	1.0	1.3	2.8	8.8	1.1	7.2	7.6
Oil and gas	0.1	0.4	0.2	1.5	0.0	0.2	3.5	2.7
Petroleum products	1.5	1.7	1.3	2.6	2.8	0.2	6.7	8.3
Metal products	2.5	1.3	2.0	3.1	11.3	0.7	8.9	11.5
Other primary products	0.1	0.8	0.3	0.4	1.4	0.2	4.3	2.0
Metals	1.8	0.4	0.6	1.7	4.2	3.0	5.8	6.0
Textile Leather and Clothing	7.1	3.2	8.3	10.0	14.0	3.4	11.6	15.3
Machinery and other equipment	1.4	0.9	1.1	2.7	6.9	0.4	5.7	7.4
Cars and trucks	7.0	1.2	1.4	4.9	12.2	1.3	23.5	12.9
Other transport equipment	1.2	0.3	0.7	0.6	10.1	0.7	4.0	6.1
Electronic equipment	0.9	0.9	0.4	0.4	8.3	1.0	1.5	6.2
Other manufactures	1.8	0.7	1.4	2.7	16.7	1.3	6.7	8.0

Source: MacMaps