European Parliament

Contribution to Growth:

Free Movements of Goods

Delivering Economic Benefits for Citizens and Businesses

Free Movements of Goods	Custom Union
€ 386 bn	€ 189 bn

EN

Contribution to Growth:

Free Movement of Goods.
Delivering Economic Benefits
for Citizens and Businesses

Abstract

This study summarizes the current literature on the economic benefits of the free movement of goods in the EU Single Market. A theory-grounded sectoral gravity model has found that EU Single Market increased real income in the European Union by approximately 6,43%. Furthermore, we discuss ex-ante analyses of the benefits of legislation that enhances European Market integration.

This document was commissioned by the Policy Department A at the request of the European Parliament's Committee on Internal Market and Consumer Protection (IMCO)..

This document was requested by the European Parliament's Committee on Internal Market and Consumer Protection (IMCO).

AUTHORS

Panu POUTVAARA, Ph.D., ifo Institute

Carla RHODE, ifo Institute

Tanja STITTENEDER, ifo Institute

Madhinee VALEYATHEEPILLAY, ifo Institute

ADMINISTRATOR RESPONSIBLE

Mariusz MACIEJEWSKI

EDITORIAL ASSISTANT

Irene VERNACOTOLA

CONTENTS

LIST OF BOXES

LIST OF FIGURES

LIST OF TABLES

EXECUTIVE SUMMARY

The Single Market has led to substantial gains in terms of trade flows, output and real income. In 2014, the internal market has had a positive impact on intra-EU trade flows of 569 billion euros, which is made up of a positive trade effect of 547 billion euros for the manufacturing sector and 22 billion euros for the agricultural sector (see Figure 3). The aggregate effect that the Single Market has brought in terms of output amounts to 386 billion euros in total, with 19 billion in agriculture and 367 billion in manufacturing. In comparison, the benefits from the Customs Union amount to 189 billion euros in total, with 176 billion euros arising in the manufacturing and 13 billion euros in the agricultural sector. In 2014, the combined benefits of free movement of goods in the Single Market and the Customs Union amounted to 575 billion euros (see Figure 1).

The effects of the Single Market in terms of income per capita include goods and services. A further distinction on a sectoral level is not possible due to the applied methodological approach. For the whole population in EU Member States, the total real income benefit accounts for approximately 903 billion euros in 2014. On average, individuals in the EU Member States have benefitted 1,782 euros in 2014 from the Single Market (see Table 1). There is substantial variation in the magnitude of gains, with small Member States and Eastern European countries potentially gaining the most. The extrapolated benefits of the Single Market are positive and increasing. On average, the EU Member States experienced an increase in income per capita of 1,930 euros in 2017 (see Table 2). Between 2014 and 2017, the real income benefits increased by 148 euros on average across Member States, excluding Ireland (see Figure 10). On average, in the EU, the real income benefits relative to the GDP per capita increased by 0.53% between 2014 and 2017 (Figure 11). Estimating the total increase in real income due to the Single Market for the whole population of the EU Member States yields 987 billion euros in 2017. Two correlation coefficients were calculated to look at the relationship between per capita income and income gains resulting from the Single Market. The correlation coefficient between income per capita in 2014 in euros and the income gains in euros from 2014 to 2017 is 0.17. The correlation coefficient between income per capita in 2014 and income gains between 2014 and 2017 as a percentage of GDP per capita in 2014 is -0.37. Thus, even though euro gains are larger for richer and old EU countries, poorer countries and new EU Member countries gain proportionally more.

While there is consensus among experts that European integration has a positive influence, the estimated magnitude of the benefits varies widely. This variation can be explained by differences in the methodological approaches and underlying data. Furthermore, an in-depth assessment of the benefits of specific legislations proves difficult due to limited data availability and a lack of legislation-specific ex-ante and ex-post impact analyses.

Nevertheless, unreaped potential benefits of the free movement of goods can be identified for a number of areas. The current legislation on mutual recognition, for example, has not yet achieved its full potential. New proposed legislation could help to achieve the full GDP gains of 1.8% resulting from a successful implementation of mutual recognition. A complete elimination of all intra-EU non-tariff barriers would entail potential unreaped export benefits of approximately 6%.

Figure 1:   Annual Benefits of Free Movement of Goods in Terms of Output

Note: The figure displays benefits accumulated in the manufacturing and agricultural sector. Benefits arising from the services sector are not considered.

1. INTRODUCTION

Trade flows play an important role in the economic prosperity of EU Member States. In 2017, intra-EU goods (services[1]) exports amounted to 3,280 (1,137) billion Euro (Eurostat, 2018). In total, EU countries exported goods (services) for a value of 5,159 (2,021) billion Euro. Thus, total trade flows are accounted for a large share by intra-EU trade.

As seen in Figure 2, in 2017 all EU Member States experienced greater intra-EU than extra-EU trade except for the United Kingdom and Cyprus (Eurostat, 2018). In recent years, the ratio of intra-EU exports to total EU GDP revolves around 21%, only showing a decrease to 18% in the aftermath of the 2008 crisis and during the European debt crisis.

When comparing Member States and their respective share of Intra-EU trade a big variety is observed. The percentage of intra-EU exports within total EU country exports varies between 38 and 84%, as can be seen in Figure 2. This implies that for some countries the benefit of the EU trade and thus of the Single Market might be substantially bigger than for others.

Figure 2: Share of Intra- and Extra-EU Exports by Member State (%)

Source: Eurostat (2018). © ifo Institut
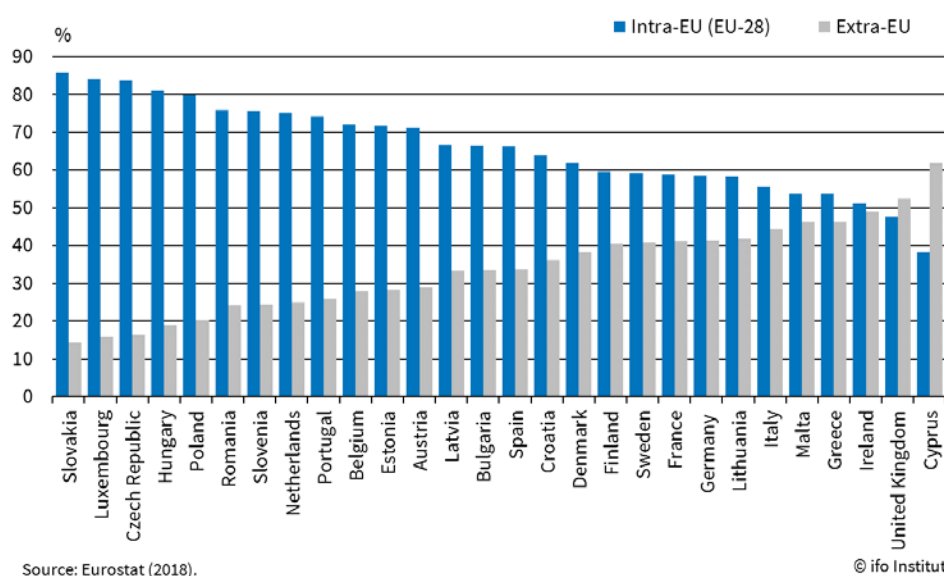
The objective of this report is to identify and quantify the benefits of free movement of goods (hereafter: EU Single Market) on European trade flows and output/welfare. The EU Single Market entails multiple aspects, such as: standardisation, removing trade barriers, public procurement, and proceedings following infringements (European Commision, 2018).

---

[1] Although both papers discussed in this report include the service sector as part of their analysis, this report focuses on the benefits accumulated in agriculture and manufacturing. The benefits arising in the service sector will be excluded, except for section 2.1.4. and 2.2.

We will present results of Felbermayr et al. (2018) and Mayer et al. (2018) in Section 2, which estimate the effects of various trade-related agreements, including the EU Single Market, on bilateral trade and subsequently total trade patterns, output and real income. Both papers infer the benefits of the Single Market by estimating what the effects would be of a counterfactual of disintegrating the Single Market.

Although the estimates of Felbermayr et al. (2018) and Mayer et al. (2018) show large benefits of the EU Single Market, further economic EU integration is an ongoing process. To further address dynamic benefits of the free movement of goods, Chapter 3 depicts the gains in real income per capita between 2014 and 2017. Chapter 4 critically discusses the difficulty to quantify the effects of recent legislative changes as well as the future potential benefits of full integration.

2. BENEFITS OF THE FREE MOVEMENT OF GOODS

KEY FINDINGS

- The Single Market has led to substantial gains in terms of trade flows, output and real income.

- The internal market has had a positive impact on **intra-EU trade flows** of 569 billion euros, which is made up of a positive trade effect of 547 billion euros for the manufacturing sector and 22 billion euros for the agricultural sector.

- The aggregate effect that the Single Market has brought in terms of **output** amounts to 386 billion euros in total, with 19 billion in agriculture and 367 billion in manufacturing. In comparison, the benefits from the Customs Union amounted to 189 billion euros in total, with 176 billion euros arising in the manufacturing and 13 billion euros in the agricultural sector. In 2014, the combined benefits from the Single Market and the Customs Union amounted to 575 billion euros.

- For the whole population in EU Member States the total **real income** benefit of the Single Market accounts for approximately 903 billion euros in 2014. Due to data limitations, this estimate encompasses income effects arising from free movement of goods and services. Gains from the services sector account for about half of the total effects in terms of output or trade flows. On average residents in the EU Member States have benefitted 1,782 euros in 2014.

- There is substantial variation in the magnitude of gains, with small Member States and Eastern European countries potentially gaining the most.

In this Section, we will evaluate the benefits of the Single Market in terms of export flows, output and real income. Sections 2.1 and 2.2 outline the results of Felbermayr et al. (2018) and Mayer et al. (2018), respectively. Both papers estimate the effects of the EU Single Market (among other trade-related agreements) on trade flows, output and real income, by using a counterfactual analysis and estimating what the effects would be of removing the Single Market (or other trade agreements). This in turn acts as a counterfactual estimation of benefits of the EU Single Market and free movement of goods. The analysis will focus on statistically significant results, putting emphasis on the economic relevance of the findings. For the purpose of this report, we will mainly focus on reporting estimates for the goods sector.

2.1   Sectoral Analysis of Effects on Trade Flows, Output and Income

The model depicted in Felbermayr et al. (2018) estimates economic effects for 43 countries, namely old EU Member States, new EU Member States as well as non-EU Countries.[2] The selected non-EU countries include Australia, Brazil, China, India, Indonesia, Japan, Korea, Mexico, Norway, Russia, Switzerland, Turkey and Taiwan. In addition, all countries not represented in the non-EU countries group are summarized into a "Rest of World" country.

To study the benefits of the EU Single Market, Felbermayr et al. (2018) employ a counterfactual analysis in which they research the effects of immediate dissolution of the EU Single Market. Firstly, they estimate the influence of various steps of integration (Customs Union, Single Market, Euro, Schengen, and Regional Trade Agreements) on bilateral trade in a so-called sectoral gravity model. This sectoral gravity model assumes bilateral trade is linear to the GDP of both countries and linear to the share of expenditures of the importing country in a specific sector in the exporting country. This share depends on the trade costs.

Secondly, after obtaining estimates for the various trade agreements on this share for 43 countries and 50 goods- and services sectors[3], Felbermayr et al. (2018) define six different scenarios. One is particularly interesting for this context, namely the removal of the Single Market, which hinges on the estimate for EU participation in the bilateral trade model. The scenarios take effect directly after the end of the data set in 2014, since the sectoral data is necessary to compute the new steady-state situation.

By constructing a model which incorporates the intermediate and final goods market in 50 sectors in 43 countries, with the use of the estimates of the effects of the trade agreements (and market integration), Felbermayr et al. (2018) numerically calculate the new equilibrium situation in terms of trade flows and prices on the markets for all sectors under different disintegration scenarios. However, this does not consider the phase-in and dynamic effects. This is especially important for non-tariff trade barriers (such as the EU Single Market). Evidence on free trade agreements suggests that in addition to the instantaneous effect, the dynamic effect in 10 years is approximately similar in size (Jung, 2012).

2.1.1.   Effects on Trade Flows

Under the counterfactual scenario also trade flows between old EU, new EU and non-EU countries would be affected due to less accessible gains from trade. Ending the Single Market would reduce intra-European trade by approximately 30% (see Figure 3). This in turn means that the Single Market has had a positive impact on intra-EU trade of 569 billion euros (manufacturing and agriculture),[4] which is made up of a positive trade effect of 547 billion euros for the manufacturing sector and 22 billion euros for the agricultural sector.

---

[2]   Felbermayr et al. (2018) make a distinction between old and new EU countries since the new EU countries enter the EU after the starting of the data set employed in 2014.

[3]   The estimations use yearly data covering the years 2000-2014 from the World Input-Output database (WIOD) described by Timmer et al. (2015).

[4]   All euro values are calculated using the ECB reference exchange rate for 2014.

As shown in Figure 3, the effect is smaller for exports to old EU countries, while it is larger for exports to new EU countries. Differences between old and new EU Member States may originate, since new EU countries are relatively more dependent on intra-EU trade. Since they are smaller economies, and often landlocked, it is more difficult for them to trade with countries further away. For new EU Member States, exports to fellow EU countries account for 80% of total exports and 19% of total production.

In general, the loss of intra-European trade significantly exceeds the magnitude of trade gains from exports to non-European countries. These trade gains make up 1.75% for old and 2.74% for new EU countries exporting to non-EU countries. Also, positive trade gains between non-European countries (1.10%) are smaller in magnitude than intra-European trade losses. When accounting for trade flows from the EU to both other Member States as well as countries outside the EU, the total benefit of the Single Market amounts to 769 billion euros.

Figure 3:   Change in Gross Trade Flows under the Counterfactual Scenario without the Single Market

Source: Felbermayr, Gröschl and Heiland (2018).   © ifo Intitute
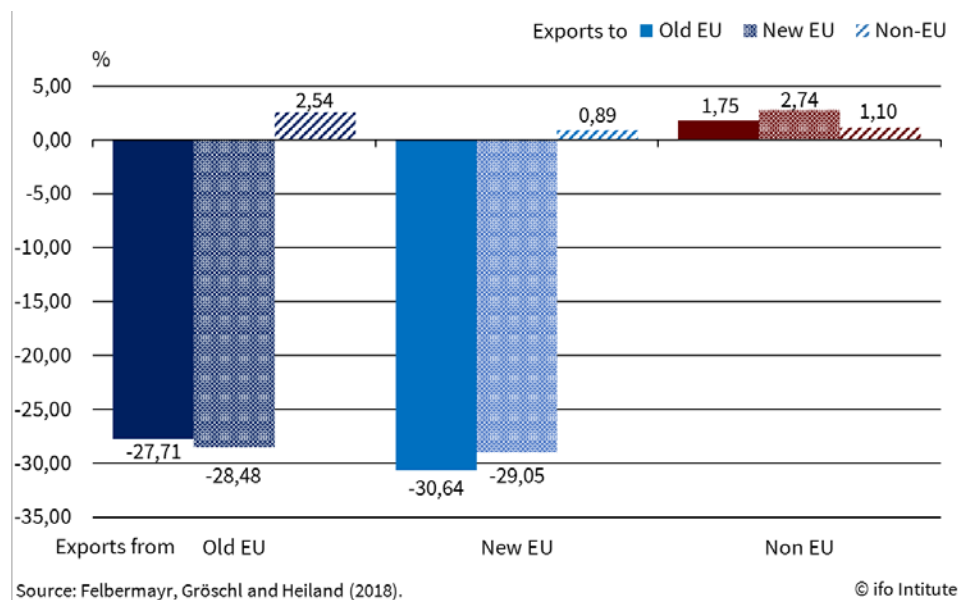
Given the prevalence of global value chains and the usage of intermediate goods in production, it is important to consider the value added within an economy. To capture this, we consider changes in value added exports, focusing on the VAX-ratio. The VAX-ratio is the ratio of value added exports to total exports. A higher VAX-ratio implies that trade flows have a higher relative importance in their underlying products' value chains, and thus the "domestic content" of exports is larger.

For intra-European trade, the share of value added exports within gross exports increases (see Figure 4), such that value added itself decreases by a smaller degree than gross exports. The VAX-ratio thus increases by approximately 3.5-5.5 %-points. For exports to non-EU countries, the VAX-ratio decreases by 0.96-2.81%-points. This means that the value-added increases by less than the gross exports, such that the ratio declines. This results from a substitution effect from trade in less labour-intensive to more labour-intensive products.

Figure 4: Change in VAX under the Counterfactual Scenario without the Single Market

Source: Felbermayr, Gröschl and Heiland (2018).   © ifo Institute
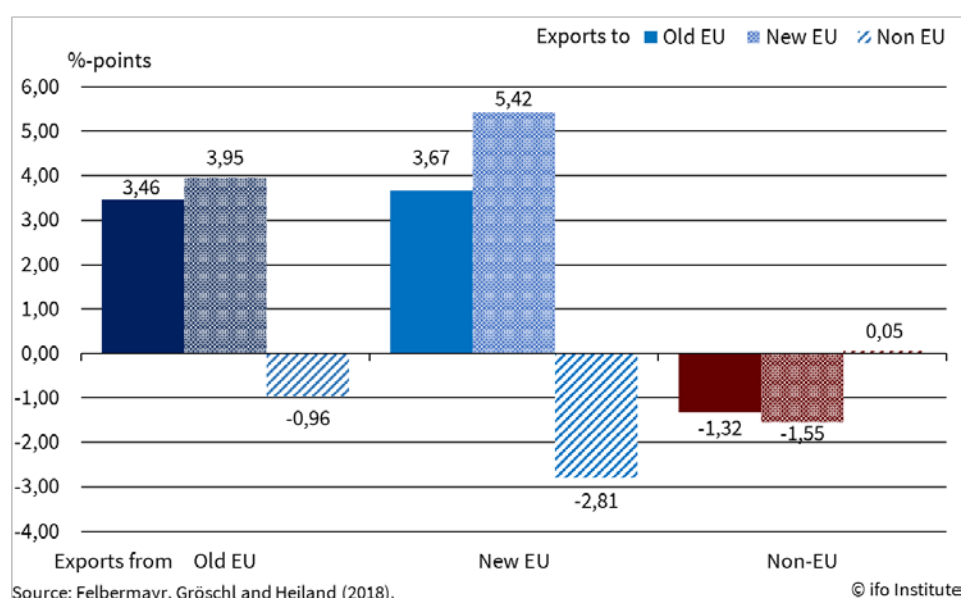
2.1.2. Effects on Output

When evaluating the effects under the counterfactual scenario on aggregate output, losses prevail for all EU countries, with the effect on non-EU countries being positive (see Figure 5). Output losses are substantially more important for new EU countries, with a reduction of gross output of 7.54%. For old EU countries, the reduction of gross output amounts to 3.40%. The existence of the Single Market has thus led to positive effects on output both to new and old EU countries. The aggregate effects that the Single Market has brought in terms of output (agriculture and manufacturing), amounts to 386 billion euros in total, with 77 billion euros for new and 309 billion euros for old EU countries. The aggregate benefits of the free movement of goods amounts to 19 billion in agriculture and 367 billion in manufacturing. The difference between old and new EU countries can be explained by the higher share of intra-EU trade as well as higher gains from trade due to the sectoral composition within new EU countries. Non-EU countries experience a gain in output of 1.11%. In comparison, the benefits arising from the Customs Union are also positive, but smaller in size, amounting to 189 billion euros in total, with 176 billion euros arising in the manufacturing and 13 billion euros in the agricultural sector. In 2014, the combined benefits from the Single Market and the Customs Union amounted to 575 billion euros in terms of output.

Figure 5: Change in Aggregate Output under the Counterfactual Scenario without the Single Market

Source: Felbermayr, Gröschl and Heiland (2018).   © ifo Institute
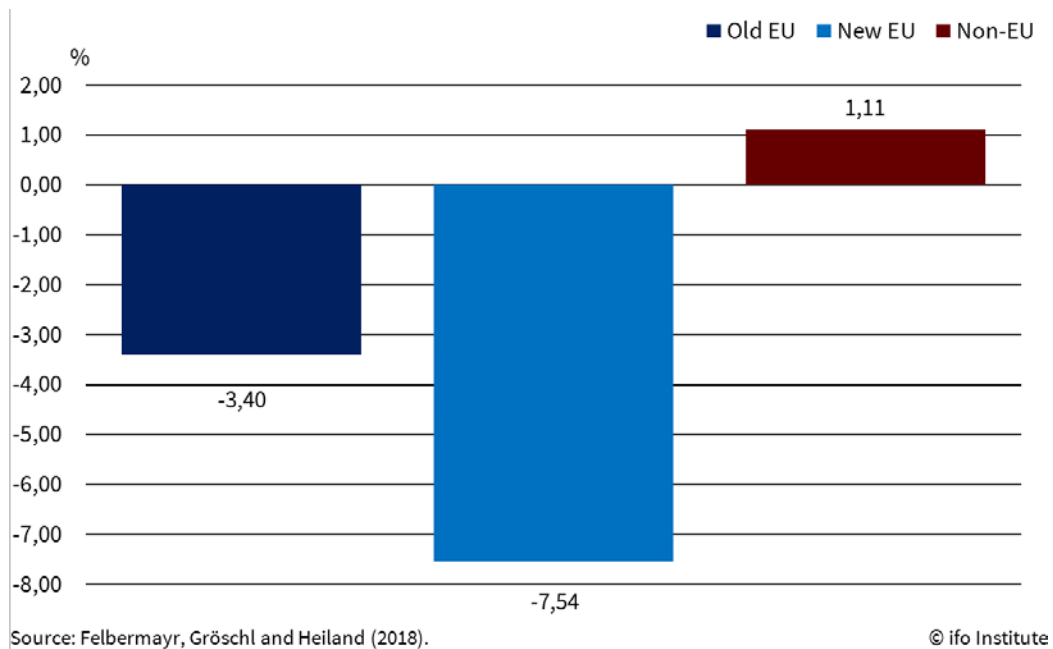
Similarly, to the VAX-ratio, Felbermayr et al. (2018) also analyse domestically sourced value added (VA) as a share of gross output (VA/output). Looking at the figures, the effects on value added are slightly smaller in magnitude than the effects on gross output.

The counterfactual scenario would imply a rise in trade costs, which consequently results in a shift of production towards more value intense sectors. This is because once trade costs and barriers rise, trade flows in sectors with little added value will become too costly to uphold, whereas trade flows with large added value will remain. Thus, more production factors will be assigned to value added intensive sectors. As such, we find a positive effect on value added as a share of output for both old and new EU Member States. For non-EU countries, the effect is negative. Figure 6 illustrates the relative size of the impacts. Quantifying these effects as annual totals for all EU Member States results in a benefit of 46 billion euros value added due to the free movement of goods. Distinguishing between old and new EU countries shows that 85% of the total effect is driven by old EU countries.

Figure 6:   Change in Value Added/Output under the Counterfactual Scenario without the Single Market

Source: Felbermayr, Gröschl and Heiland (2018).   © ifo Institute
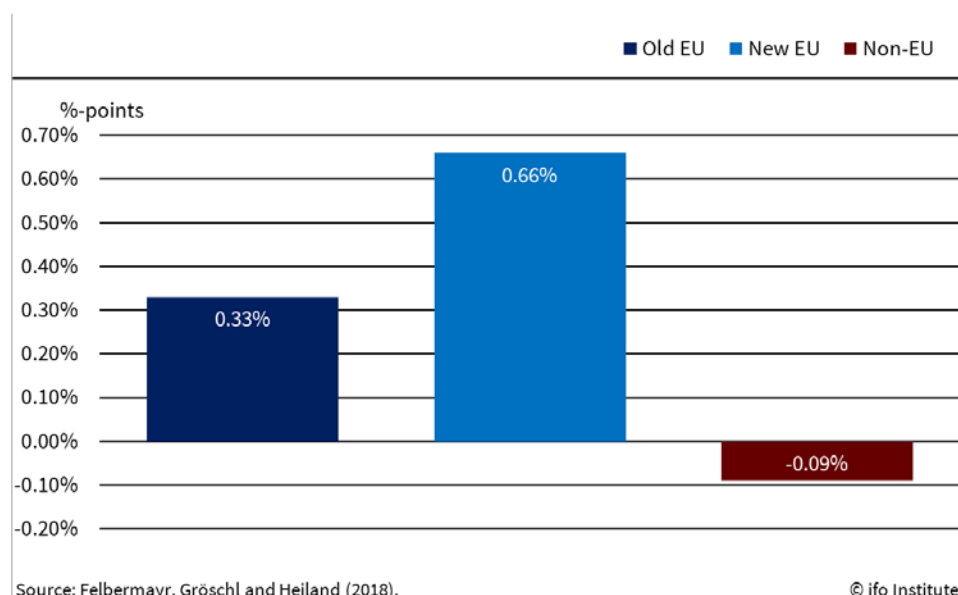
2.1.3.   Effects on Trade Flows and Output in the Manufacturing Sector

The previous findings indicate a decline in both trade flows and output for old and new EU Member States under the counterfactual scenario. For a deeper analysis of these patterns, a distinction at the sectoral level is crucial to understand the underlying mechanisms.

In the following we will present results for the manufacturing sector, while also considering the agricultural sector. Data on 50 sectors are classified into the three categories according to the International Standard Industrial Classification revision 4 (ISIC Rev. 4). Table A1 in the Annex illustrates the individual sectors summarised within these three groups.

Among the categories, the dependence on imported intermediate goods varies. Complex manufacturing industries rely to a large extent on intermediate goods, while agricultural and services industries are rather labour intensive and require little intermediate goods. This makes the manufacturing sector particularly responsive to changes in trade costs, since most intermediate goods are sourced from within the EU. As labour costs would be depressed in the EU due to lower demand for goods and services, sectors with large cost shares for labour (agriculture and services) would become more competitive relative to non-EU countries. Those sectors' trade flows would be less depressed than that of less labour-intensive sectors (manufacturing).

Exports to EU Member States would experience a decline from both old and new EU countries. The manufacturing sector would experience a sharp decline, with a reduction of approximately 28% (28,1% from new EU countries and 28,4% from old EU countries). The service sector would experience a similar decline, while the agricultural sector would experience a smaller decline. Nonetheless, it is interesting to observe that due to the strong dependency on intermediate goods, the manufacturing sector would benefit least from trade to non-EU countries. The positive effect amounts to 0,94% for old EU countries and 1,24% for new EU countries.

When looking at exports to the world per sector, all industries would experience a decline in gross exports. According to Felbermayr et al. (2018), the manufacturing sector would experience the largest reduction in export volume, with a reduction of 15-20%.

New EU countries would experience a decline in exports by 20% and old EU countries by 15%. The agriculture and services sectors would respond less.

Figure 7 illustrates the changes in value added at the sectoral level, under the counterfactual scenario without the Single Market. The effects range from 1.8% for furniture and other manufacturing to 9.0% for basic metals.

Figure 7: Changes in Value Added under the Counterfactual Scenario without the Single Market at the Sectoral Level

Quelle: Felbermayr, Gröschl and Heiland (2018).   © ifo Institute
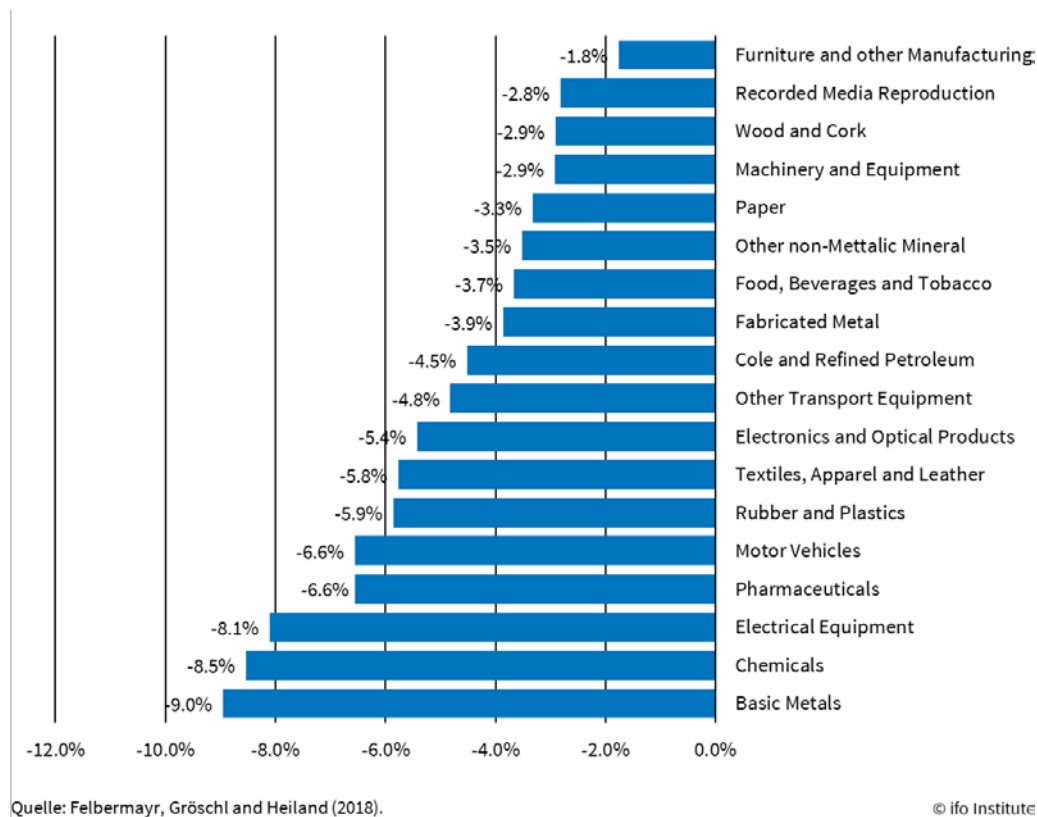
2.1.4.   Effects on Real Income per Capita

Looking beyond the trade flows and sectoral analysis, it is important to look at effects on the individual level. To do so we study the effects of the counterfactual scenario of not having the Single Market on real income per capita. Figure 8 displays the losses in real income per capita experienced throughout the EU. The greatest losses of real income would be experienced in Luxembourg with a decline of 19.73% and Malta with 14.33%. On average, income per capita would decline by 6.43%. The smallest declines below 3% are found in Greece, the United Kingdom, Italy, Spain and France. Minor gains or no effects are found in several countries outside the EU. A general analysis within the EU concludes that on average smaller economies experience larger negative effects on income relative to larger economies. It is important to note that these effects include benefits arising from the services sector. Excluding these effects is unfortunately not possible due to data limitations.

Figure 8:   Loss in Income per Capita under the Counterfactual Scenario without the Single Market (%)
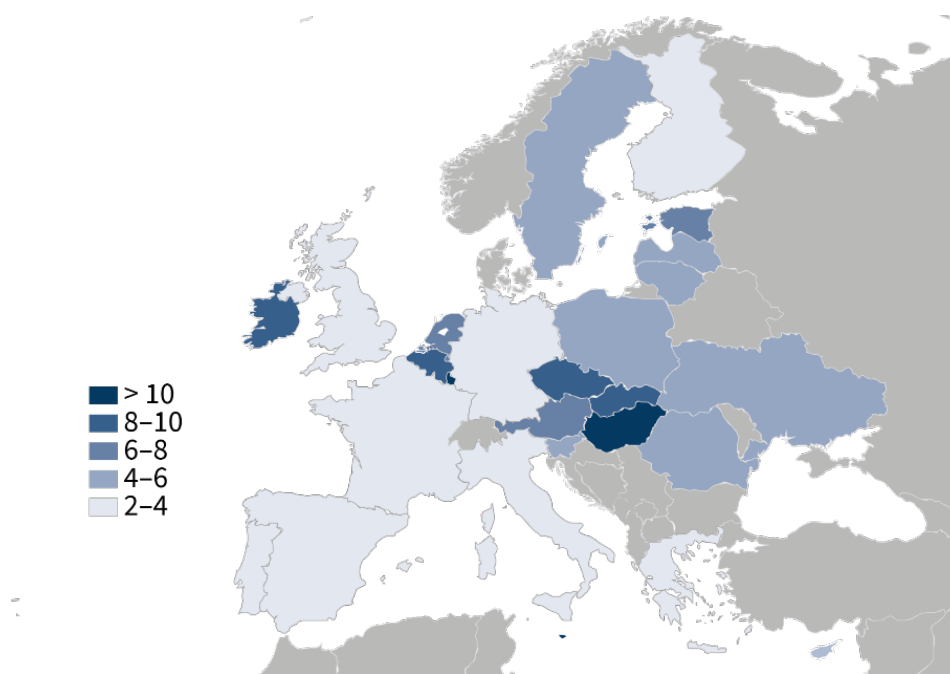
Quelle: Felbermayr, Gröschl und Heiland (2018).   © ifo Institut

Table 1 summarises the contribution of free movement of goods and services to real income per capita in euros. Benefits are shown for 2014. In 2014 the change in income per capita ranges from 335 euros in Romania to 17,599 euros in Luxembourg. On average individuals in the EU Member States have benefitted 1,782 euros in 2014 from the free movement of goods. For the whole population in EU Member States the total real income benefit accounts for approximately 903 billion euros in 2014.

Table 1: Gains in Income per Capita in Euros from the Single Market (2014)

Country	Change in income per capita in euros (2014)
Austria	2,406
Belgium	2,936
Bulgaria	335
Croatia	504
Cyprus	1,047
Czechia	1,411
Denmark	2,303
Estonia	1,178
European Union	1,782
Finland	1,421
France	943
Germany	1,419

Country	Change in income per capita in euros (2014)
Greece	354
Hungary	1,138
Ireland	3,927
Italy	673
Latvia	683
Lithuania	694
Luxembourg	17,599
Malta	2,809
Netherlands	2,886
Poland	635
Portugal	647
Romania	344
Slovakia	1,247
Slovenia	1,398
Spain	569
Sweden	1,886
United Kingdom	825

Source: Own calculations based on Felbermayr, Gröschl and Heiland (2018) and Eurostat (2018).

Figure 9 shows the losses and gains of real income per capita experienced by EU Member States following various counterfactual disintegration measures. The figure differentiates between a disintegration of the Single Market, Schengen, the Euro, other trade agreements and the most favoured nation tariff (MFNT). The relative comparison shows that for all countries the disintegration of the Single Market would result in the greatest negative effects on overall welfare. On average, the losses attributed to the disintegration of the Single Market, would make up approximately 75% of the overall losses following a complete collapse of the EU. Like the effects on income per capita, smaller economies would tend to experience greater losses in comparison to the larger economies. This, in turn, can also be interpreted to mean that smaller economies have particularly gained and benefited from the European integration over the last decades.

Figure 9: Changes in Real Income per Capita under the Counterfactual Analysis of Removing Various Steps of European Product Market Integration

Source: Felbermayr, Gröschl and Heiland (2018).   © ifo Institute
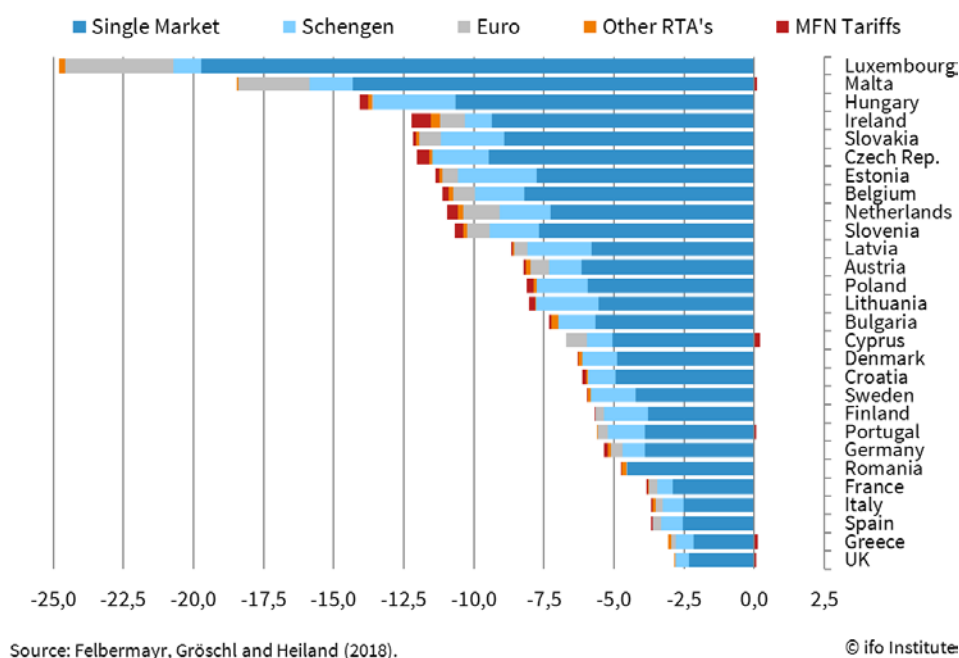
2.2. Further Evidence Using Long-Run Data

In this section, the results by Mayer et al. (2018) are compared with those by Felbermayr et al. (2018). Using techniques of structural gravity estimation, Mayer et al. (2018) provides an evaluation of the costs of un-doing the achievement of all the years of European integration. The model which computes the new equilibrium situation (in case of EU disintegration) with sectoral data, is similar to that of Felbermayr et al. (2018). The authors focus on static gains and their results support those of Felbermayr et al. (2018). Although the results point to trade-related welfare gains from the European single market as Felbermayr et al. (2018), the magnitude of the results differs.

The dissimilarity in magnitude mainly originates from the different dataset used and the different period covered. The analysis in Mayer et al. (2018) relies on bilateral country level dataset covering the period of 1950 until 2012. Furthermore, the authors only consider three sectors, namely goods, tradeable services and non-tradeable services as opposed to 50 goods and services sectors considered by Felbermayr et al. (2018). In addition, while Felbermayr et al. (2018) considers exports as the main outcome variable, Mayer et al. (2018) uses imports as a measure. Another difference emerges from the preferred estimation of Mayer et al. (2018), which uses ordinary least square (OLS) rather than a Poisson pseudo-maximum-likelihood (PPML) estimation. The difference between using OLS and PPML is that PPML assigns more weight to countries with large trade levels. Yet another distinction is that Mayer et al. (2018) creates an EU single market dummy starting from post 1992 while Felbermayr et al. (2018) uses variation in new EU countries in order to evaluate the trade-related gains from the European single market.

A two step-analysis is conducted to obtain estimates on the trade-related welfare gains from the European single market. In the first instance, the authors compute the estimates of EU integration effects on trade employing gravity estimation. In those regressions, they split the EU agreements from the rest of regional trade deals, and estimate the surplus of trade flows that are due to various sides of the EU process (the Single Market, Schengen, and the euro notably).

As a result, the analysis produces a set of parameters that spur the direct trade effects of the EU. In a second instance, the authors conduct a counterfactual analysis to assess the gains from the European Single Market, for instance having a Regular Tariff Agreement (RTA) or, in an extreme counterfactual scenario, the return to World Trade Organization (WTO) rules which implies the application of MFN tariffs.

The results show that the gains from the European Single Market are substantial: the impact of the Single Market on trade is more than three times larger than that of a regular RTA. The result of their simulation shows that the European Single Market has increased trade between Member States by 109% on average for imports of goods. Although the average welfare gains from EU trade integration is 4.4% for the average Member State, some states benefit more in terms of both welfare gains and trade increases. Welfare gains are high for small open economies, such as Czech Republic, Hungary, and Slovakia. While trade effects are also very high for Eastern European countries, the benefits are more diffused across Member States compared to welfare gains. In the counterfactual case of RTAs with consideration of intermediate goods, Hungary for example would lose 17.7% of real GDP and only 4% when assuming the exclusion of intermediate goods. The trends are similar for other Eastern European countries, which emphasizes the trade flows in intermediate goods and input-output linkages in the European Single Market.

Computing the counterfactual scenario of having a regular RTA compared to the Single Market illustrates that the European Union significantly promotes trade. Imports of goods by EU Member States increase by 36% on average. This effect is close to 50% for Central and Eastern European Member States, while peripheral countries, like Greece, Cyprus, or Malta, benefit less from the EU Single Market. Overall, the cost of returning to such agreement depends on the country specific characteristics like size and initial openness to trade.

When looking at the real GDP gain for EU countries due to the Single market, as opposed to RTA with intermediary inputs and no free movement of labour counterfactual, results show that the European Single Market has generated an average weighted 4.4% permanent real GDP gain for EU countries. Looking at the gains across countries, small open economies benefited the most, and therefore would bear the largest costs in the case of disintegrating the EU: Hungary would lose 5 to 17% of real GDP depending on the scenario existing in non-EU (RTA or MFN), while Greece only 0.8 to 2.4%.

3. BENEFITS OF THE SINGLE MARKET BETWEEN 2014 AND 2017

KEY FINDINGS

- The research summarised in this chapter includes the effects of the Single Market, including goods and services. A further distinction on a sectoral level is not possible due to the applied methodological approach.
- The extrapolated benefits of the Single Market are positive and increasing. On average, the EU Member States experienced an increase in income per capita of 1,930 euros in 2017 (see Table 2).
- Between 2014 and 2017, the real income benefits increased by 148 euros on average across all Member States (see Figure 10). On average, in the EU, the real income benefits relative to the real income level increased by 0.53% between 2014 and 2017 (Figure 11).
- Estimating the total increase in real income due to the Single Market for the whole population of the EU Member States yields 987 billion euros in 2017.
- The correlation coefficient between GDP per capita in 2014 and the income gains from 2014 to 2017 in euros is 0.17. The correlation coefficient between GDP per capita in 2014 and income gains from 2014 to 2017 relative to GDP per capita is -0.37. Thus, even though euro gains are larger for richer and old EU countries, poor countries and new EU Member countries gain proportionally more.

In this section, we illustrate the benefits of free movement of goods and services that arose from 2014 to 2017[5]. Given the limited data availability for trade flows and output after 2014, we will focus our dynamic analysis on real income per capita. We will extrapolate the effects of the Single Market on real income per capita under the assumption that the percentage changes estimated for 2014 remain the same in 2015-2017. The aim will be to display the progress that has been achieved, depicting the dynamic gains arising over time.

Table 2 gives the extrapolated benefits of the free movement of goods and services on real income per capita for 2014, 2015, 2016 and 2017. All EU Members recorded positive and increasing income effects throughout the period. In 2017, the income gains range from 361 euros in Greece to 18,270 in Luxembourg. On average, the EU Member States experienced an increase in income per capita of 1,930 euros in 2017. The variation between countries can be partially explained by country size and state of the economy.

---

[5] Data on GDP per capita are available only until 2017. The last two years of the 8th European Parliament legislature (2018 and 2019) are therefore excluded from the analysis.

Table 2: Gains in Income per Capita in Euros (2014-2017)

Country	Gains in income per capita in euros			
	2014	**2015**	**2016**	**2017**
Austria	2,406	2,462	2,517	2,598
Belgium	2,936	3,001	3,083	3,173
Bulgaria	335	357	386	414
Croatia	504	524	553	583
Cyprus	1,047	1,058	1,098	1,154
Czechia	1,411	1,515	1,581	1,714
Denmark	2,303	2,347	2,406	2,484
Estonia	1,178	1,217	1,279	1,395
European Union	1,782	1,872	1,885	1,930
Finland	1,421	1,448	1,486	1,535
France	943	960	972	995
Germany	1,419	1,458	1,501	1,548
Greece	354	354	354	361
Hungary	1,138	1,202	1,234	1,351
Ireland	-[6]	5,227	5,376	5,722
Italy	673	685	703	718
Latvia	683	712	741	805
Lithuania	694	716	749	827
Luxembourg	17,599	17,875	18,013	18,270
Malta	2,809	3,110	3,253	3,454

---

[6] From 2014 to 2015 the basis for calculating the income per capita in Ireland changed. To allow for reasonable comparability of the values we thus exclude 2014 for Ireland from the analysis.

	Gains in income per capita in euros			
Netherlands	2,886	2,951	3,016	3,118
Poland	635	664	658	723
Portugal	647	679	706	737
Romania	344	367	390	435
Slovakia	1,247	1,301	1,337	1,390
Slovenia	1,398	1,444	1,498	1,597
Spain	569	594	615	640
Sweden	1,886	1,933	1,971	1,992
United Kingdom	825	934	853	822

Note: For each year, per capita income gains resulting from the Single Market are shown.

Source: Own calculations based on Felbermayr, Gröschl and Heiland (2018) and Eurostat (2018).

Figure 10 shows the changes in real income per capita in euros between 2014 and 2017. The UK experienced a slight decrease in benefits over time (-2 euros), followed by Greece (6 euros) and Italy (45 euros). Economically stronger countries, such as Luxembourg and Malta, experienced the largest effects on real income per capita in euros (671 and 645 euros, respectively). On average, in the EU, the real income benefits increased by 148 euros between 2014 and 2017.

Figure 10: Changes in Real Income per Capita Gains in Euros
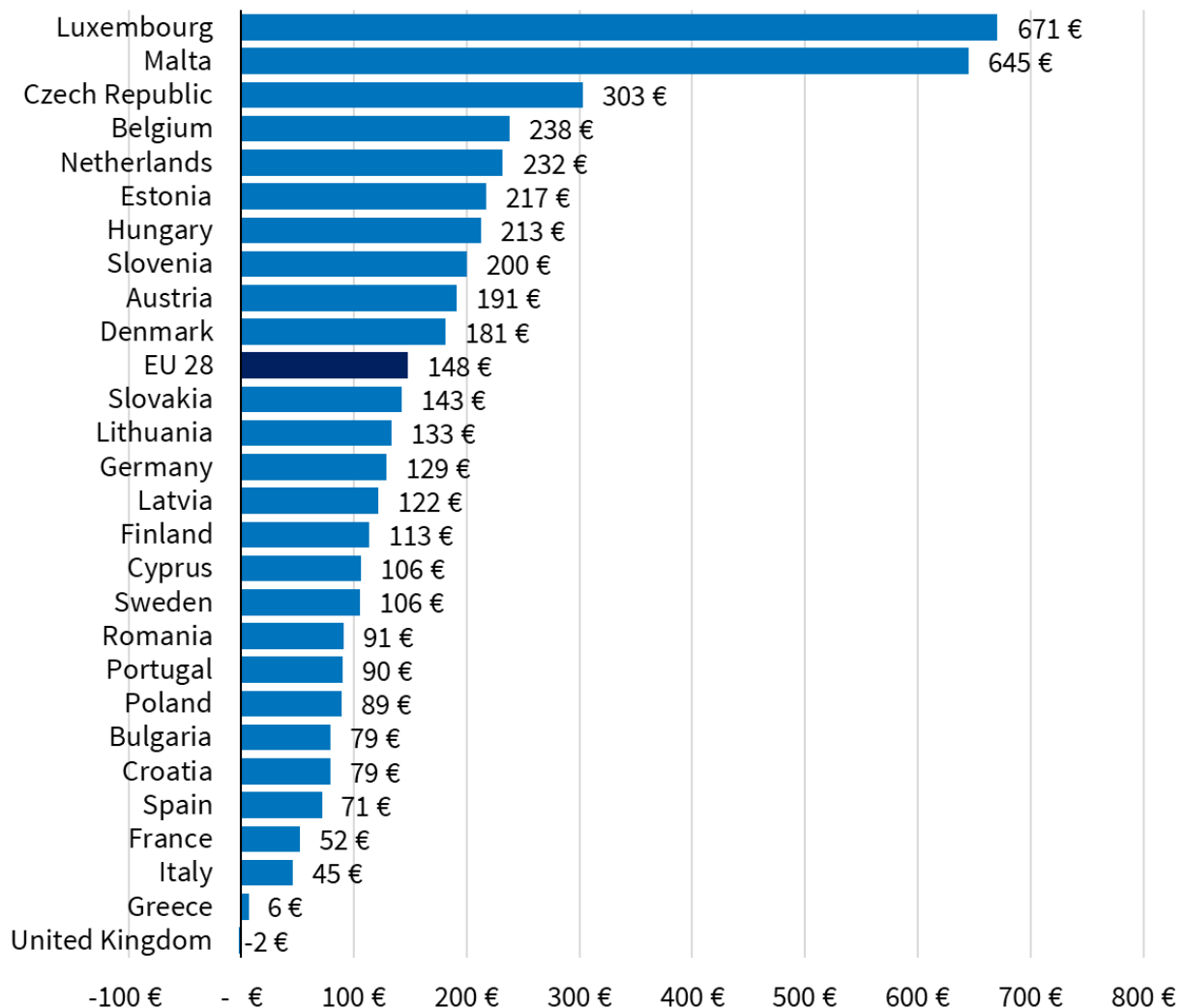
Source: Own calculations based on Felbermayr, Gröschl and Heiland (2018) and Eurostat (2019).   © ifo Institute

Figure 11 shows the changes in real income between 2014 and 2017 relative to GDP per capita in 2014. In the UK, the benefits relative to the per capita income remained practically unchanged in magnitude from 2014 to 2017. Recently joined EU Members States, such as Malta, Czech Republic, and Hungary experienced the largest effects on changes in real income over time relative to their 2014 per capita GDP level (around 2% to 3.3%). On average, in the EU, the real income benefits increased by 0.53% between 2014 and 2017.

Figure 11: Changes in Real Income per Capita (2014-2017) Relative to GDP per Capita in 2014
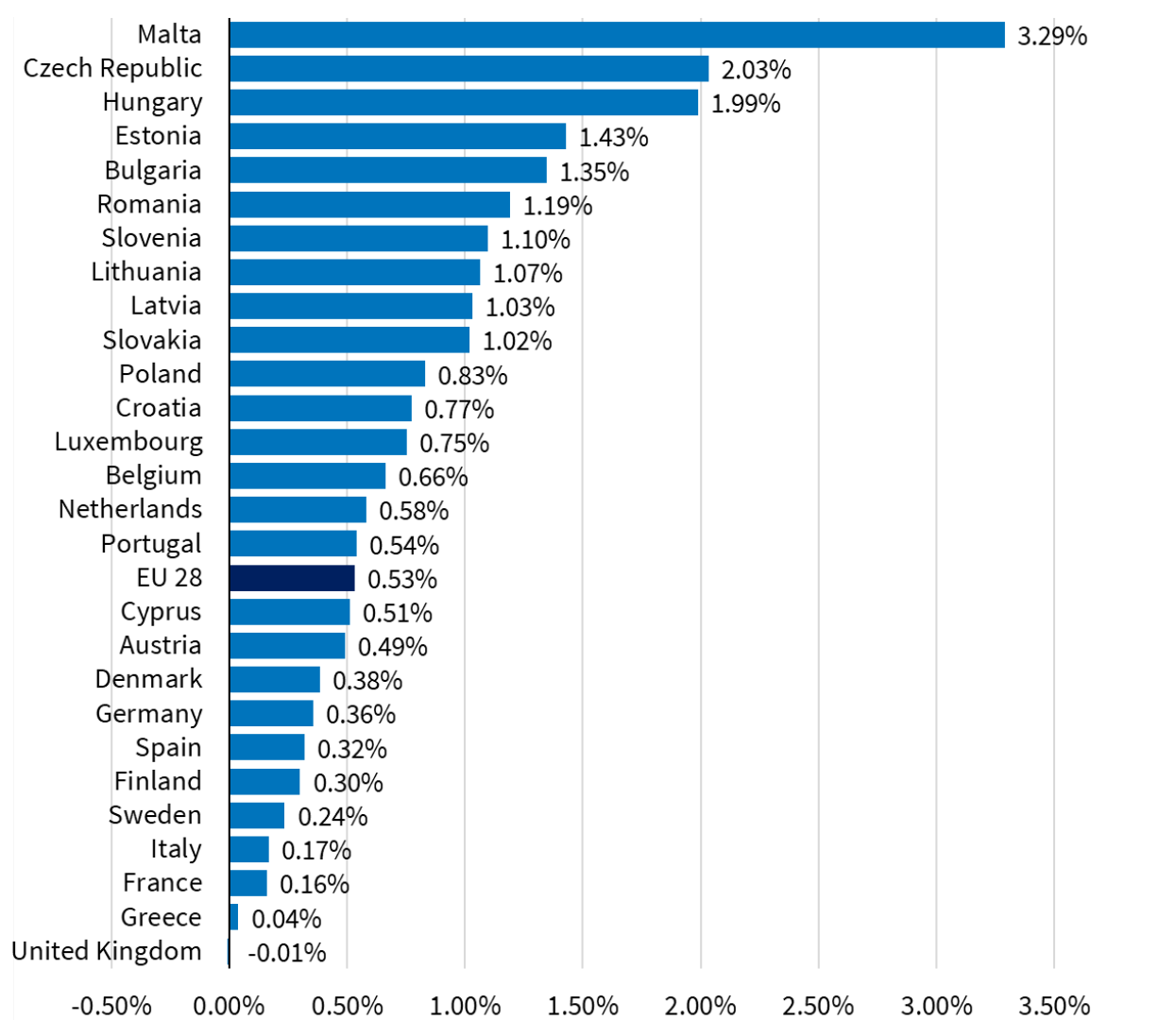
Country	Value
Malta	3.29%
Czech Republic	2.03%
Hungary	1.99%
Estonia	1.43%
Bulgaria	1.35%
Romania	1.19%
Slovenia	1.10%
Lithuania	1.07%
Latvia	1.03%
Slovakia	1.02%
Poland	0.83%
Croatia	0.77%
Luxembourg	0.75%
Belgium	0.66%
Netherlands	0.58%
Portugal	0.54%
EU 28	0.53%
Cyprus	0.51%
Austria	0.49%
Denmark	0.38%
Germany	0.36%
Spain	0.32%
Finland	0.30%
Sweden	0.24%
Italy	0.17%
France	0.16%
Greece	0.04%
United Kingdom	-0.01%

Source: Own calculations based on Felbermayr, Gröschl and Heiland (2018) and Eurostat (2019).   © ifo Institute

Figure 12 illustrates the average increase of the income per capita benefits at the EU level (excluding Ireland). It shows that the real income benefits increased from 1,782 in 2014 to 1,930 in 2017. The greatest increase was documented between the years 2014 and 2015 (5%).

Estimating the total real income benefits for the whole population of the EU Member States yields 987 billion euros in 2017 and 903 billion euros in 2014, amounting to a percentage increase of approximately 6%. The progress of the total income benefits over time is driven by both the general in income per capita as well as changing population numbers.

Figure 12: Benefits on Income per Capita from 2014-2017 for the EU Member States
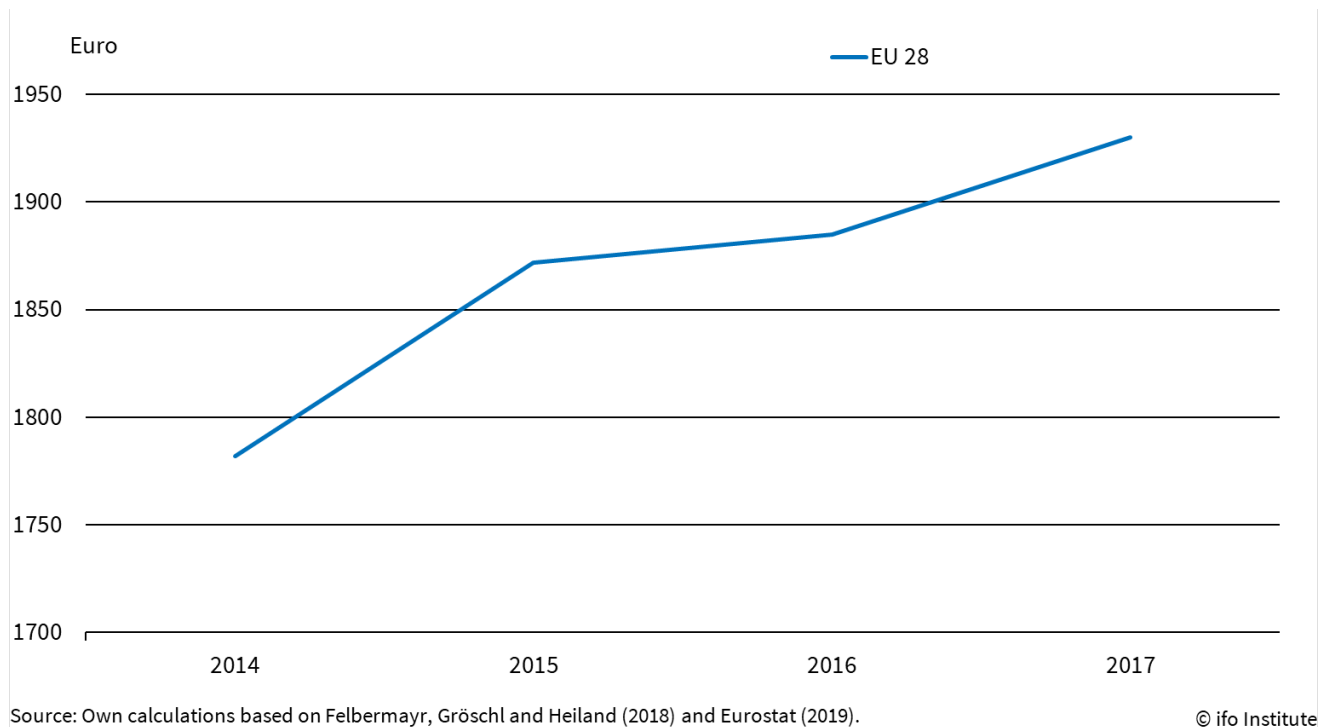

Source: Own calculations based on Felbermayr, Gröschl and Heiland (2018) and Eurostat (2019).

© ifo Institute

To investigate the linear relationship between income gains and income per capita levels, we calculate the correlation coefficient. It can range from -1 to +1, where -1 indicates the strongest possible negative and +1 the strongest possible positive relationship. A coefficient of zero denotes no relationship between the two variables of interest.

We calculate two correlation coefficients along the lines of the relationships explained in Figure 10 and 11. The correlation coefficient between GDP per capita in 2014 and euro gains is 0.17. The correlation coefficient between GDP per capita in 2014 and the relative gains over time (euro gains in relation to real GDP levels per capita in the country) is -0.37. The two coefficients can be interpreted as meaning that euro gains are larger for richer and old EU countries, while poorer countries and new EU Member States gain proportionally more.

4. FUTURE POTENTIAL OF FREE MOVEMENT OF GOODS

KEY FINDINGS

- While there is consensus among experts that European integration has a positive influence, the estimated magnitude of the benefits varies widely.
- An in-depth assessment of the benefits of specific legislations proves difficult due to limited data availability and a lack of legislation-specific ex-ante and ex-post impact analyses.
- Current legislation on mutual recognition has not achieved the full potential. New proposed legislation could help to achieve the full GDP gains of 1.8% resulting from a successful implementation of mutual recognition.
- A complete elimination of all intra-EU non-tariff barriers would entail potential unreaped export benefits of approximately 6%.

The CoNE studies from 2014 and 2017 summarise existing academic literature on the effects of European integration and conclude that while there is consensus among experts that European integration has a positive influence, the estimated magnitude of the benefits varies widely. This applies also to the free movement of goods.

The most important reference in the CoNE studies is Campos et al. (forthcoming), which is cited in the CoNE 2017 study as a discussion paper and has been subsequently accepted for publication. It uses a synthetic control method to study the effects of European integration. The applied econometric technique constructs counterfactuals for countries that joined the EU from 1973 to 2004 to evaluate how they would have developed if they had not joined the EU. The main idea is to identify country pairs made up of one country in the European Union and a corresponding country outside the European Union. By applying weights to the comparison countries, their economic development is made similar to the EU country pair. The comparison country becomes thus the synthetic control country. The economic development of the country of interest can now be compared if joining or not joining (synthetic control) the European Union. The authors find that EU Member States experience substantial growth benefits from EU integration. On average, they estimate that if a country had not joined the EU, its income per capita would have been approximately 10% lower in the first ten years. The gains are large and persistent.

Despite a different methodological approach, the magnitude of average income per capita benefits is comparable to the increase of 6.43% found in Chapter 2.1.4 (the average income per capita benefit was calculated using 2017 income data and extrapolating 2014 effects found in Felbermayr et al. (2018)).

Even though Campos et al. (forthcoming) is a valuable contribution to the studies presented in this report, difficulties in estimating the future potential of the Single Market and in evaluating the benefits specific to the free mobility of goods remain. The main challenge is that the free mobility of goods goes together with other benefits of the European integration, preventing the separation of the effects in an econometric analysis. The general shortcomings are reflected in the lack legislation-specific ex-ante and ex-post impact analyses. Therefore, it is difficult to predict future potentials of economic integration.

However, we turn to CoNE 1/2014 (2014) to give an indication of future potential benefits of free movement of goods. The authors identify three main factors which hinder the Single Market from functioning properly and reaching its full economic potential.

These problem areas include: delays and differences in adoption of harmonised directives in national legislation, infringements of Single Market regulation due to incorrect or incomplete legislation, and the existence of home bias. They find anecdotal evidence of all three in either the medical devices or construction industry.

Furthermore, CoNE 1/2014 estimates the effect of Non-Tariff Barriers to intra-EU trade in a gravity model framework for 2012, by proxying non-tariff barriers by the OECD PMR indicators and an indicator for environmental regulation. They find that a hypothetical sudden removal of all non-tariff trade barriers would imply a gain in yearly trade flows of 171 billion euro on average. However, the study does not consider the costs of achieving integration: it might well be that some integration measures are too costly.

Considering that in 2012 the total intra-EU trade volume for goods amounted to 2,838 billion euros, trade could increase on average by 6.0% if removing non-trade barriers. In 2014 total intra-EU trade volume amounted to 2,932 billion euros and the estimated intra-EU trade gain from the EU Single Market comprises 548 billion euros. Trade thus increased by 19.6% in the EU Single Market until 2014. Furthermore, due to the large intra-EU variety of existing non-tariff barriers and different dependencies on intra-EU trade, the unreaped export potential varies over countries, from 4% in Ireland to 10% in Croatia.

Although the comparison is two years off and the methodologies differ[7], we conclude that the many of the benefits to the EU Single Market have been reaped already, but there is still a substantial potential for future economic benefits of free movement of goods. In the two subsequent paragraphs, we consider estimates of unreaped benefits attributable to either of the three categories distinguished by CoNE 1/2014.

CoNE 1/2014 mention that upgrading directives to regulations could reduce compliance costs, as there are no national differences in the implementation of the legislation. They estimate that the update of the Construction Products Directive (86/106/EEC (CPD)) to Constructions Products Regulation ((EU) No 305/2011 (CPR)) in 2011 increased trade in this sector by 3% in the short run using product-level data. As non-tariff barriers are mostly independent of firm size, SMEs will benefit disproportionally from removing those barriers to trade. The existence of those barriers is reflected in the strong national localisation of SMEs. By conducting interviews in the construction sector, they estimated compliance costs in this sector to be 5,000 to 25,000 euro per country per product. Furthermore, national labelling takes relatively long (between 3 and 12 months).

It is thus expected that more heterogenous sectors, such as the medical devices sector, face large relative costs of those barriers to trade. CoNE interviewed several actors in the medical devices sector, which was in 2014 regulated by three directives. The interviewees stated that market entry requirements are vastly different across Member States, which is enforced by the national Notified Bodies. Some Bodies have stricter voluntary regulations, which in practice become the adopted standards for purchasing medical equipment and lead to exclusion of elsewhere approved products.

---

[7] Felbermayr et al. (2018) use a dynamic model to compute the results on intra-EU trade, whereas CoNE does not. Furthermore, the estimate of 171 billion euro is based on completely removing non-tariff barriers, which might not be likely to occur. If all countries' OECD PMR indicators converge to the average of the five countries having the lowest indicators, the figure drops to 103 billion.

This case study shows us that differences between national legislation could lead to trade barriers and that a transition from Directive to Regulation might be able to reduce these barriers. Furthermore, medical devices industries are burdened with an additional cost of 2.5 billion due to additional conformity tests by stricter EU standards in the strictest category of medical devices. Hence, stricter regulation might lead to large costs with doubtful safety improvements.

The aforementioned issue of companies not relying on Mutual Recognition is also an example of home bias, as it is worthwhile to apply for e.g. a national label just for the increased trust of consumers.

5. CONCLUSION

In summary, the two papers presented find large benefits from the free movement of goods (and services) within the EU Single Market on trade flows, output and real income. Both studies implement a counterfactual analysis of the disintegration of the Single Market in order to predict the trade related gains arising from it.

While there is variation in the magnitude of effects, data and preferred methodology account for the differences. While the presented studies estimate the benefits of the EU Single Market as a whole, it remains challenging to estimate benefits of individual directives of the 7th and 8th legislature due to the lack of ex-post analyses. Ideally, one would prefer to address the separate directives individually. However, although there are ex-ante analyses on directives, ex-post studies have not been conducted. Conceptually, the problem in estimating the realised effects is that directives are implemented in the whole EU Single Market which means that there is no proper control group to evaluate the effects of reforms ex post. It is thus not possible to give precise estimates of the effect of recent legislation and specific directives. Furthermore, the dynamic (subsequential) effects of trade agreements and market integration make it challenging to estimate the effects of trade policy shortly after implementation.

In order to be able to perform more specific (ex-post) analysis in the future, there are two alternatives. When it comes to legislation affecting a specific market segment for which there is a suitable comparison group which is not too close a substitute, it would be possible to compare changes in the treatment and comparison group over time (difference-in-differences analysis). A challenge here is in identifying markets that could have been expected to develop similarly in the absence of legislation. Another alternative is to rely on international comparisons and identify an international comparison group outside the Single Market and compare the developments in the relevant market in the Single Market and in the comparison group before and after the implementation of the legislation. Ideally, researchers should identify the relevant comparison group and publish pre-analysis plans already before the reform is implemented, to ensure that hypotheses cannot be adjusted ex post to rationalise the findings. Given the difficulties in implementing such studies, it is likely that ex ante analyses continue to play a dominant role in the analysis of various legislative efforts. Nonetheless, implementing carefully planned ex post studies even for a subset of legislation would provide valuable additional insights and also provide an ex post check on how well ex ante analyses succeed. This, in turn, could be expected to result in higher quality ex ante analyses in the future.

Generally speaking, as seen in the Brexit counterfactual analysis in Felbermayr et al. (2018), the costs of Brexit testify to the importance of the Single Market. The results show that maintaining the Single Market would be valuable and beneficial for both the United Kingdom and the remaining Member States of the European Union. It is therefore to be expected that further market integration could generate considerable efficiency gains. Although it is to be hoped that the close relationship remains between the United Kingdom and the European Union, there is a silver lining in the potential negative outcome. If the United Kingdom leaves the single market, its relative performance in the years to come would provide a real-world laboratory to estimate the gains from the Single Market by studying the losses that the UK industries suffer after leaving it.

REFERENCES

- Atkins, W. (1998), Technical barriers to trade, Study for the Single Market Review, subseries.

- Campos, N.-F., F. Coricelli and L. Moretti (forthcoming), Institutional Integration and Economic Growth in Europe, Journal of Monetary Economic.

- Civic Consulting, Kara, S., Alleweldt, F., Mcspedden-Brown, N., Fielder, A., Zuleeg, F., & Osinski, A. (2014), Contribution of the Internal Market and Consumer Protection Growth.

- Enchelmaier, S. (2018), Legal aspects of the free movement of goods: Legislation of the 7th and 8th European Parliament, Contribution of Internal Market and Consumer Protection to Growth (IMCO committee).

- European Commission (2017a), Brief factual summary on the public consultation on the possible revision of the Mutual Recognition Regulation (EC) No 764/2008.

- European Commission (2017b), Commission Staff Working Document Impact Assessment: Proposal for a Regulation of the European Parliament and of the Council on the mutual recognition on goods lawfully marketed in another Member State, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52017SC0471&from=EN (accessed 18 December 2018).

- European Commission (2018a), Briefing Initial Appraisal of a European Commission Impact Assessment on Mutual recognition of goods lawfully marketed in another Member State, http://www.europarl.europa.eu/RegData/etudes/BRIE/2018/615657/EPRS_BRI(2018)615657_EN.pdf (accessed 18 December 2018).

- European Commission, (2018b), Retrieved from The European Single Market: https://ec.europa.eu/growth/single-market_de.

- European Parliament (2014), Contribution of the Internal Market and Consumer Protection to Growth, Study for the IMCO Committee.

- European Parliament (2017), Mapping the Cost of Non-Europe 2014-19, fourth edition.

- Eurostat (2018, 09), Intra-EU trade in goods - recent trends, Retrieved from https://ec.europa.eu/eurostat/statistics-explained/index.php/Intra-EU_trade_in_goods_-_recent_trends#Evolution_of_intra-EU_trade_in_goods:_2002-2018 and https://ec.europa.eu/eurostat/statistics-explained/index.php/International_trade_in_services.

- Eurostat (2018 and 2019), Main GDP aggregates per capita [nama_10_pc], http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nama_10_pc&lang=en (accessed 14 December 2018 and 19 February 2019).

- Felbermayr, G., Gröschl, J., & Heiland, I. (2018), Undoing Europe in a New Quantitative Trade Model, ifo Working Papers 250.

- Jung, B. (2012), Gradualism and dynamic trade adjustment: Revisiting the pro-trade effect of free trade agreements, Economics Letters, 115(1), pp. 63-66.

- Mayer, T., Vicard, V., & Zignago, S. (2018, April), The cost of Non-Europe, Revisited, CEPII Working paper 2018-06.

- Timmer, M., Dietzenbacher, E., Los, B., Stehrer, R. & Vries, G. (2015), An illustrated user guide to the World Input-Output Database, Review of International Economics, 23(3), pp. 575-605.

ANNEX

Table A1: Sectoral Classification into the Categories Agriculture, Manufacturing and Services

Category	Agriculture	Manufacturing	Services
Sectors	1 Crops & Animals 2 Forestry & Logging 3 Fishing & Aquaculture 4 Mining and Quarrying	5 Food, Beverages & Tobacco 6 Textiles, Apparel, Leather 7 Wood & Cork 8 Paper 9 Recorded Media Production 10 Coke, Refined Petroleum 11 Chemicals 12 Pharmaceuticals 13 Rubber & Plastics 14 Other Non-Metallic Minerals 15 Basic Metals 16 Fabricated Metal 17 Electronics & Optical Products 18 Electrical Equipment 19 Machinery & Equipment 20 Motor Vehicles 21 Other Transport Equipment 22 Furniture & Other Manufacturing	23 Electricity & Gas 24 Water Supply 25 Sewerage & Waste 26 Construction 27 Trade & Repair of Motor Vehicles 28 Wholesale Trade 29 Retail Trade 30 Land Transport 31 Water Transport 32 Air Transport 33 Aux, Transportation Services 34 Postal and Courier 35 Accommodation & Food 36 Publishing 37 Media Services 38 Telecommunications 39 Computer & Information Services 40 Financial Services 41 Insurance 42 Real Estate 43 Legal and Accounting 44 Business Services 45 Research and Development 46 Administration & Support Services 47 Public & Social Services 48 Education 49 Human Health and Social Work 50 Other Services, Households

Source: Felbermayr et al. (2018).

This study summarizes the current literature on the economic benefits of the free movement of goods in the EU Single Market. A theory-grounded sectoral gravity model has found that EU Single Market increased real income in the European Union by approximately 6,43%. Furthermore, we discuss ex-ante analyses of the benefits of legislation that enhances European Market integration. This document was prepared by the ifo Center for International Institutional Comparisons and Migration Research at the request of the European Parliament's Committee on Internal Market and Consumer Protection (IMCO).