

CBI Literature review of the impact of EU membership on the UK economy

Non-technical summary

In 2013, the CBI surveyed the available academic estimates of the *overall* net economic costs and benefits of the UK's membership of the EU, as part of its major report *Our Global Future*. We have now updated this review, taking into account a number of new estimates that have been made available since 2013 as well as deepening the analysis. We are reaffirming our view that the body of academic evidence points to an overall net benefit of EU membership to the UK around 4-5% of GDP, or £73bn-91bn per annum in 2014 GDP (£2,700-£3,300 per household), which has accumulated over time. There is an unavoidable degree of uncertainty over this judgment, and the benefit may be smaller, but it could also be considerably larger.

The analysis which we have considered in this updated review covers an even greater range of opinion and methods on whether and how much the country gains from its EU membership. We conclude that, taken as a whole, the additional studies provide further evidence that EU membership delivers a significant net economic benefit to the UK.

Our new review of the evidence incorporates a thorough analysis of twelve studies including more recent estimates of the *overall* net benefit to the UK economy of EU membership than were available at the time of the 2013 analysis. This amounts to **twelve studies which include fourteen different estimates of the overall economic net benefit of Britain's EU membership**. These are listed in the table at the end of this summary. There is a very large degree of uncertainty over the size of the costs and benefits, and the estimates covered in the papers range from a cost of 13% of GDP to a gain of 31%. As we analyse in detail in the main report, these studies differ widely in terms of their counterfactuals (i.e. the conditions under which Britain would exit the EU or what would have prevailed had the UK never entered in the first place); their modelling and empirical methods and sources; and in their coverage of the various economic impacts of EU membership – with no one being comprehensive. These differences all have impacts on the overall results, and a thorough review of these studies needs to go beyond the headline estimates to examine what is driving the findings.

Our review of this literature leads us to the following broad findings:

- We consider seven of the fourteen estimates as credible for the purposes of the CBI's review, based on the criteria of having well-sourced data, and employing a rigorous methodology with plausible assumptions.
- The majority of these credible estimates – five out of seven – conclude that the long-term economic benefits of the UK's membership have outweighed the costs, with a range of - 2.5% to 9.5% of GDP.
- **Those studies which find a net benefit from EU exit are based on some relatively ambitious counterfactual scenarios.** Examples include: unilateral free trade, in which the UK abandons tariffs on imports for no reciprocal reduction in tariffs on its exports; major repeals of regulation - including some for which there may be limited political appetite (such as removal

of all climate change legislation); or scenarios in which Britain undergoes a dramatic industrial shift from manufacturing to services with no impact on unemployment.

- **No single estimate of the net costs and benefits of EU membership is comprehensive, so the overall impact of membership is likely to be greater than any one study implies.** Therefore, *many of these studies should be viewed as complements, rather than substitutes*. It would be inappropriate to summarise such studies by simply averaging them – the net impact of EU membership may be greater than any one study implies.
- **Some aspects of EU membership are poorly or rarely analysed.** This is particularly the case with: on the benefit side, the impact of the Single Market on competition, economics of scale and global value chains; and on the cost side, the costs of poorly designed regulation.
- **...and empirical studies suggest these omitted factors could be strongly positive.** Empirical studies that use non-EU countries as proxies for how the UK may have fared without membership implicitly include all the above hidden impacts. It is notable, therefore, that the two examples featured in this review imply that the UK has received a substantial benefit from its EU membership.

There is no definitive way to aggregate or combine these studies to produce a single, comprehensive estimate. The studies we regard as more credible produce estimates ranging from -2.5% to +9.5% of GDP, but they differ greatly in scope and methodology. Nonetheless, by drawing together the results of these studies and the key themes outlined above, we think it is possible to make a judgement about where the overall the cost or benefit of EU membership most likely lies (summarised in table a):

- The two studies of the costs and benefits of EU membership that we think of as most credible (employing rigorous modelling methodology, realistic counterfactuals and up-to-date figures) are Ottaviano et al (2014) I and Open Europe (2015) I, which come out with an average benefit of **1½%** (and a range of 0% to +3% of GDP). But these studies are limited in scope and focus largely on the fiscal, trade tariff and non-tariff barrier elements of EU membership.
- There is evidence that significant additional benefits are derived from FDI and competition from the Single Market, which is something our members highlight. According to Pain & Young (2004), the former could be worth around 1¼% of GDP; while according to Ilzkovitz (2007), the latter could amount to another 1¾% (a finding broadly backed by the older Gasiorok (2002) study). This takes us to somewhere in the region of **5%** of GDP.
- There are also likely to be costs from poorly-designed EU regulation. Minford (2006) pegs these at 2½% of GDP and Open Europe at ½% or 1½% of GDP. We have raised some questions about the methodologies in both cases (see section 3.3 and table 2), but adding the average of these estimates would nonetheless push the net benefit down to around **3½%**.
- Some impacts of EU membership have been underestimated or are barely covered at all in these studies (such as global value chains and immigration, cited by many CBI members as a key benefit) – and the purely empirical studies in this review suggest that, if anything, the benefits of EU membership may be *understated* by other theoretical studies. For example, Ottaviano et al (2014) II generate an estimate of up to 9½%, implying that the above 3½% figure missed 6% of GDP worth of benefits. We would discount this figure heavily since it is difficult to cross-examine, but even doing so by 90% to 75% gives us an overall net benefit of **+4% to +5% of GDP, within a range of 1% to 9½% of GDP**.
- Using this methodology of estimating the size of each channel, +4% to +5% of GDP still seems like a reasonable and conservative judgement of the most likely economic value of the UK's EU membership, based on the academic literature.

Table a: Judging the size of different channels of net benefits of EU membership

Channel	Net Gain or loss	Estimate of net benefit	Key source(s)
The UK's fiscal contribution	Cost	0% to +3% Average 1½%	Ottaviano et al (2014); Open Europe (2015)
Trade tariffs	Gain		
Non-tariff barriers	Gain		
Lack of control over extra-EU tariffs	Possible cost		
FDI	Gain	+1¾ %	Pain & Young (2004)
Competitiveness and productivity impacts of the Single Market	Probable gain	+1¾ %	Ilzkovitz (2007)
Lack of control over regulation and red tape	Probable cost	-2½ % to ½ % Average -1½ %	Open Europe (2015); Minford (2004)
Migration	Probable gain	Up to +6% (9½% total benefit minus 3½% of benefits identified above)	Ottaviano et al (2014) <i>We apply a discount factor of 75-90% for the average since we cannot clearly identify which channel is being picked up by these reduced form models</i>
Participation in global value chains	Probable gain		
Other omitted benefits/costs			
Transition and disruption costs in case of exit	Probable gain (from staying in)	Not considered	
Evaluated total net benefit of EU membership			Range: 1% to 9 ½%¹ 4-5% Average/most likely range

¹ Taking the low end estimate for each channel: 0% + 1¾% + 1¾% - 2½% ≈ 1%

Table b Estimates covered in this review

	Net benefit (cost) of EU membership (exit)
Ottaviano, Pessoa, Sampson & Van Reenen (LSE/CEP) (2014) "The Costs and Benefits of Leaving the EU" I	1.1% to 3.1% of GDP
Open Europe (2015) "What if... The consequences, challenges & opportunities facing Britain outside the EU" I	0.1% - 2.2% of GDP
Open Europe (2015) "What if... The consequences, challenges & opportunities facing Britain outside the EU" II	-0.6% to -1.6% of GDP
Minford (2006) "Measuring the economic costs and benefits of the EU"	Welfare impacts equivalent to -2.5% of GDP
Pain & Young (NIESR) (2004) "The macroeconomic impact of UK withdrawal from the EU"	2.25% of GDP
Ilzkovitz (European Commission) (2007) "Steps towards a deeper economic integration: the internal market in the 21 st century"	2.1% of EU-15 GDP in 2006 from the Single Market Programme
Ottaviano, Pessoa, Sampson & Van Reenen (LSE/CEP) (2014) "The Costs and Benefits of Leaving the EU" II	6.3%-9.5% of GDP
Campos, Coricelli, Moretti (2014) "Economic Growth and Political Integration"	8.5% of GDP per capita after 10 years of entry, 24% after 35 years
Gasiorek (2002) "The accession of the UK to the EC: A Welfare Analysis"	Welfare impacts equivalent to 2% of GDP
Mansfield (2014) "A Blueprint for Britain: Openness not Isolation" (IEA Brexit Prize winner)	+2.6% to -1.1% of GDP
UKIP/Congdon (2012) "How much does the European Union cost Britain"	-10% of GDP
Civitas (2004) "A Cost too Far"	-4% of GDP
Lyons (GLA) (2014) "The Europe Report: A Win-Win Situation"	+31% to -13% of GDP
Department of Business, Innovation & Enterprise (2010) "The UK and the Single Market"	+6% of GDP per capita

1. Introduction

In 2013, the CBI published *Our Global Future*, a comprehensive report reflecting on the views of CBI members of Britain's membership of the European Union now and going forward. Section 3.7 of that report surveyed the then available estimates of the overall macroeconomic costs and benefits of the UK's membership of the EU, and judged that, taken together, they pointed to an overall benefit of approximately 4-5% of GDP (£2,700-£3,300 per household in 2014 prices). This review updates that study, notably by incorporating a number of new estimates that have been made available since 2013, and also by deepening the analysis.

To anticipate our conclusions, we find five key themes from this expanded review that suggest that the overall economic impact of EU membership on the UK is positive and significant, albeit with considerable uncertainty around the size. These are set out below, and fully explained in the conclusion:

- The clear majority of the most credible analyses of the impact of EU membership find that it has delivered a net economic benefit to the UK
- Finding a net benefit from EU exit requires some strong assumptions about what 'out' would look like, in particular about whether the UK embarks on a deregulatory drive and embraces unilateral free trade
- No single estimate of the net costs and benefits of EU membership is comprehensive, so the overall impact of membership may be greater than any one study implies
- Some aspects of EU membership, such as the impact of the Single Market on productivity & competitiveness, participation in global value chains and the regulatory burden, are rarely or poorly analysed
- and "reduced form" empirical studies suggest these omitted factors could be strongly positive overall

While acknowledging the considerable uncertainty around these issues, we draw on these six themes to conclude that +4% to +5% of GDP remains a reasonable and conservative judgement of the most likely economic impact of the UK's EU membership.

2. Scope of this review

In this review, we have collected and analysed as comprehensive a range as possible of estimates of the *overall net* cost or benefit of Britain's membership of the European Union, thereby updating the analysis in section 3.7 of the CBI's 2013 report *Our Global Future*. It should be noted that this is therefore by no means a complete analysis of Britain's economic relationship with the EU, since it excludes the somewhat larger body of evidence on various individual aspects of membership².

Estimates of the overall net economic impact on the UK of its membership of the EU have historically been quite thin on the ground. This no doubt reflects the inherent difficulty of combining the numerous effects that EU membership has, both positive and negative, into a single coherent and consistent assessment of the net impact. Nonetheless, such estimates have proliferated since the CBI's previous analysis, reflecting the increased importance of the issue as the UK approaches an in-out referendum. Whereas the published review of overall costs & benefits in *Our Global Future* comprised five papers, we have now been able to add a further five, some of which have multiple estimates. For clarity, in the following analysis we have also re-introduced three estimates that were available in

² *Our Global Future* itself has an extensive overview of this evidence, although more has been produced since that report was published

2013 but not included in our final scope as their figures were felt not to be robust enough for the final analysis (one of which found a net gain and two of which found a net loss).³ On the other hand, we are no longer including Eichengreen & Boltho (2008) (which found a net gain), since that study looked at the EU-15 rather than Britain, and we now have far more Britain-focused studies available.

This increased number of studies of the net impact of EU membership means that we now have a considerably expanded range of results, methodologies and counterfactuals. A key difference is that we now have a number of studies that are more relevant to the choice the UK now faces: more studies deal with the question of exit from the EU; deal exclusively with the UK; and are up-to-date in their figures for tariffs and other quantities. On the one hand, this should allow more precision in framing the economic consequences of the UK's choice over whether to leave the EU, but on the other, the proliferation of studies since 2013 has revealed an even greater range of opinion on whether and how much the country gains from its EU membership.

The full list of estimates and analyses covered in this review, together with analysis of their comprehensiveness and methodology, is presented in tables 1 and 2.

3. Key themes in analyses of the overall benefits & costs of EU membership

This section highlights and examines three key dimensions along which analyses of the overall impact of EU membership tend to fall: namely, entry or exit & counterfactual; methodology and modelling strategy; and coverage of the various aspects of membership. These factors all need to be examined when assessing each study of the impact of EU membership.

3.1. Entry or exit & counterfactual

Early analyses of the impact of EU membership on the UK tended to focus on the impact of *joining* the then European Economic Community in 1973⁴ and, later on, on the impact of implementing the Single Market over the 1990s and beyond.⁵ However, most of the more recent studies covered in this review look at the possible impact of *exiting* the EU in the near future. These are potentially quite different questions for two main reasons. Firstly, the opportunities for trading with the EU from outside are greater now than they were in 1973 even for countries or trading blocs without a bilateral deal thanks to successive rounds of global trade talks – that is, the trade tariffs imposed by the EU on countries under WTO most favoured nation (MFN) status are much lower. Secondly, given the level of integration between the UK and EU economies, the UK may well secure trade deals after exiting the EU that come well short of a full rupture.⁶ Obviously, studies that look at the impact of exiting the EU are more relevant to the question before the UK today, but studies looking at the past benefits of membership are also likely to be informative.

In either case, much depends on how a study specifies its counterfactual – the trading, investment and regulatory climate that would prevail after the UK exited the EU (or that which would have prevailed had the UK not joined). Since a British exit would be largely unprecedented, there is a wide scope for debate over what conditions would prevail, and this has a knock-on impact on the assessment of costs and benefits. At one extreme, the UK may adopt a status similar to Norway in the

³ These are BIS (2010) [+6% of GDP benefit]; Civitas (2004) [1.5% - 5.2% of GDP cost]; and UKIP/Congdon (2012) [10% cost of GDP]

⁴ For example, Gasiorek (2002)

⁵ For example, Ilzkovitz (2007)

⁶ A third reason is that the trade links that Britain has built up with its EU partners over forty years are unlikely to disappear overnight, even in the absence of a deal, but they may unwind over time

European Economic Area, thus maintaining most of the economic benefits and obligations of full EU membership. At the other, the UK may face significant new barriers to integration with the EU economy, but also gain new opportunities to trade outside the EU and reform its own economy. Since this is such an uncertain area, some studies opt to present a range of options, from optimistic to pessimistic scenarios.

Some of the key considerations in setting out a counterfactual include:

- **What tariffs the UK would face on its exports to the EU** – the default option is that the UK faces the EU’s external “most favoured nation” tariff after exiting. However, many studies posit that the UK would sign a new free trade deal with the EU and avoid formal tariffs.
- **What non-tariffs barriers the UK would face** – ranging from customs procedures to divergence in regulation and economic structures. Most studies predict that non-tariff barriers would rise, if they address them at all, but the extent is open to debate.
- **Controls on movement of capital and labour** – most studies assume that the movement of capital remains free, while the movement of labour issue is not addressed in most cases.
- **How Britain would use any new freedoms it had gained** – in particular, the tariffs the UK would impose on imports and the domestic regulations it might repeal. This is a key area of contention since in studies that find a net cost from EU membership, the opportunity to abolish tariffs on imports from EU and non-EU countries (even if export tariffs are not reduced in turn) and to deregulate the domestic economy are key factors.⁷

3.2. Methodology and modelling strategy

The studies covered in this review enlist a range of methodologies and modelling strategies in order to construct their estimates of the impact of EU membership.

A number of the studies employ **structural models** of the UK economy, imposing a theoretical structure on empirical data, which allows them to generate single, internally consistent estimates of the overall net difference between the status quo (i.e. EU membership) and a counterfactual (i.e. EU exit/never having entered). Computable General Equilibrium (CGE) models are the most widely employed⁸ and tend to have the most elaborate and micro-founded theoretical structure, but Ottaviano et al (2014) use a gravity trade model, and Pain & Young (2004) use a macro-econometric model.

In terms of coherence and internal consistency, these methodologies are the most authoritative, since the impacts of EU membership are modelled precisely and within a single model. This tends to come at the cost of scope, however, since incorporating all aspects of EU membership in this manner would be prohibitively complex. These studies therefore typically exclude several impacts of Britain’s EU membership (see section 3.3 and table 1 for more details), with the result that their estimates of the overall impact tend to be more modest, in either direction, than those of other studies.

This review also includes two **“reduced-form” empirical** approaches (Ottaviano et al (2014) and Campos et al (2014)), both of which use the experiences of countries that haven’t joined the EU to identify the consequences of doing so. These achieve greater scope over the structural models since they implicitly include almost all aspects of EU membership, at the cost of not being able to clearly detect what aspects are driving the results. A further disadvantage of these approaches is that, since they are backward-looking, they cannot be used to model a hypothetical future exit scenario.

⁷ The key examples of this are Minford (2004) and Open Europe (2015)

⁸ For example, by Open Europe (2015), Minford (2004) and Ilzovitz (2007)

Interestingly, these studies identify the largest net *benefits* of EU membership, perhaps implying that structural approaches fail to identify some of the key gains (this is discussed more in the conclusion).

The final main approach employed in these studies is to conduct **a review of individual estimates of the impacts of various aspects of EU membership**, and aggregate the results (Civitas (2004), Congdon/UKIP (2012) and Mansfield (2014)). This approach comes the furthest from the ideal of a single internally consistent model, but it does at least offer transparency, since the gains and losses of EU membership are separately identified, as well as a wide scope. Notably, a glance at table 2 reveals that studies taking this approach are generally more likely to find a net cost from EU membership, in part because they have the flexibility to be combined with quite ambitious counterfactual scenarios in which the UK adopts major unilateral reforms to tariffs and domestic regulation following exit (see section 3.1).

3.3. Coverage of the various aspects of membership

As discussed above, no one study estimates the benefits and costs of all aspects of EU membership (with the partial exception of reduced-form empirical studies, which cover almost all aspects but not explicitly). The key economic impacts of EU membership that are covered in the studies in this review are set out below, and also a couple that do not seem to have been covered by any of the studies.

Table 1 summarises which of the economic impacts of EU membership set out above are included in each study covered in this review (see section 4 for more explanation of each study). The impacts of membership are arranged with those most widely included on the left. Notably, the four least-often included impacts of EU membership (competition from the Single Market, migration, transitional costs of exit and global value chains) are all probable positives.

Fiscal contribution (cost) The most obvious and uncontroversial net cost of Britain's EU membership is its net contribution to the EU budget (currently amounting to around £18-19bn gross and £10bn net per annum⁹). The fact that the UK has limited discretion over the allocation of spending that is returned to the country arguably imposes an additional cost, although this is somewhat harder to put a figure on.

Trade tariffs (gain) The most visible benefit of membership is the absence of trade tariffs on exports to other EU countries (and on imports from them, although the UK would have discretion to keep these at zero if it exited). The default EU external tariff that would apply to the UK is the WTO "most favoured nation" tariff. These have declined over the decades but remain significant in some industries - Ottaviano et al (2014) estimate that the average charge on UK exports of transport equipment to the EU under the current most favoured nation tariff would amount to 7.22%, for example. The cost of tariffs is sensitive to the choice of counterfactual, since many studies assume that the UK would sign a free-trade deal with the EU after exiting that would maintain zero tariffs.

Non-tariff barriers (NTBs) (gain), a catch-all term covering any obstacle to trade other than tariffs and transport costs, including the likes of quotas, customs paperwork and anti-dumping rules, but also more structural obstacles including differing regulations & standards in the domestic supply chain and even differences in language and culture. The elimination of as many NTBs as possible is a core aim of the European Single Market.

Certain "hard" NTBs would likely rise immediately if the UK was no longer in the EU - for example, it is very likely that a customs border would be erected and UK exporters to the EU would have to file rules of origin documentation (as Norwegian firms have to do) (for example, Open Europe (2015)). But

⁹ House of Commons Library Briefing Paper 06091, "In brief: UK-EU economic relations", June 2015

some studies in this review further assume that NTBs relating to domestic regulation would rise over time as the UK and EU economies diverged (for example, Ottaviano et al (2014)).

Foreign direct investment (FDI) (probable gain) Britain has the largest stock of inward FDI in Europe¹⁰, and there exists survey and anecdotal evidence that its membership of the EU is a key part of its appeal as an investment destination.¹¹ An exit from the EU could therefore be argued to lead to a lower stock of FDI in the future for the UK, with knock-on impacts on productivity and growth, or at least a transitional period in which planned new FDI in EU-dependent projects is cancelled or reduced.

However, most studies in this review do not cover the impact of FDI, and those that do differ on its impact. Pain & Young (2004) take an empirically-focused approach, estimating the past impact of EU membership on FDI by an econometric analysis of the drivers of US investment in a panel of European countries, controlling for EU membership and country-specific fixed effects. They find a large impact of around 10% of the flow on inward FDI. They further estimate that FDI has a greater positive impact on domestic productivity than domestic investment, driving gains to GDP. In contrast, Open Europe (2015) find a more modest impact from FDI, because any loss of FDI is largely made up by increased domestic investment. However, their model doesn't account for the possible impact of the UK's access to the Single Market as a driver of FDI, nor for the greater quality of FDI compared to the replacement domestic investment. Civitas (2004) thinks that there would be a positive offsetting impact on FDI as the UK would be able to reform domestic regulation in an investment-friendly direction, but this is a little speculative and cuts against the UK's well-documented attractiveness as an FDI destination from within the EU. The Pain & Young approach seems most comprehensive, albeit dependent on older data.

Lack of control over regulation & red tape (probable cost) British product standards, labour regulations and environmental rules are subject to regulation at an EU level in many areas, and this "is seen as the biggest downside to EU membership" by CBI members.¹² Well-designed harmonised regulation can help reduce non-tariff barriers to trade throughout the supply chain, but there is widespread concern about unnecessary EU regulation, especially in purely domestic parts of the economy, or regulation that erodes competitiveness.

Nonetheless, while the impacts of poorly-designed regulation are reasonably well understood at a micro-level, the aggregate impact on overall economic growth is harder to measure. Most studies in this review that do attempt to do so have followed Open Europe (2013) by aggregating the cost estimates presented in UK government Impact Assessments of individual regulations, but there are some significant problems with this approach.

Most obviously, some of the studies taking this approach (Mansfield (2014) and Civitas (2004)) do not include the benefits figures from these Impact Assessments, and therefore measure *gross* costs rather than *net* costs. But over and above this, Impact Assessments are partial-equilibrium assessments of the costs to particular sectors rather than the whole economy, so cannot be "added up" to calculate an overall net impact. To give a concrete example, Open Europe (2013b) cite the Temporary Agency Workers Directive as one of the most costly EU regulations, costing £2.1bn a year. But in the Impact Assessment, some £1.3bn of that "cost" is due to higher wages for employees – a (perhaps inefficient)

¹⁰ <https://www.gov.uk/government/world-location-news/uk-named-top-european-country-for-fdi-stock-in-world-investment-report>

¹¹ For example, EY's 2015 UK Attractiveness Survey finds that a balance of 9% of international investors would find the UK less attractive after exit even if it retained access to the Single Market on similar terms. The CBI's *Our Global Future* report cites anecdotal evidence (section 3.2)

¹² *Our Global Future*, section 3.4

reallocation of resources, but not in its entirety a deadweight cost to the economy as a whole. While totalling the gross impacts of EU regulation on UK businesses might be a worthwhile exercise, it doesn't easily translate into the impact on the overall size of the economy.

Additionally, it is worth noting that this particular impact of EU membership is especially sensitive to the choice of counterfactual, since one can argue over whether the political climate in the UK is such that it would really substantially deregulate its economy following exit.

Lack of control over extra-EU tariffs (possible cost) As a member of the EU Customs Union, the tariffs on UK imports from non-EU markets are set at an EU level. Some studies in this review posit that the UK would use its greater freedom if it were no longer in the EU to eliminate all or most import tariffs, thus benefitting from higher imports, lower costs and greater specialisation in its areas of comparative advantage (Open Europe (2015), Minford (2006), Congdon/UKIP (2012)). However, this impact of EU membership is another that is especially sensitive to the choice of counterfactual, since one can argue over whether “unilateral” free trade is politically realistic. And, on the other hand, there is a case to be made that EU membership actually enhances the UK's negotiating power and ability to strike quality extra-EU trade deals (see *Our Global Future*).

Migration (probable gain) Britain may choose to impose greater restrictions on freedom of movement from EU countries if it exited, which could impact the UK's ability to plug skills gaps in its workforce. Lower levels of inward migration may also reduce the overall size of the economy, even if the impact on GDP per capita is more muted.¹³ However, of the studies covered in this review, only Open Europe (2015) deals with this issue explicitly (elasticity of labour supply is affected, but the overall workforce size is not).

Competitiveness and productivity impact of Single Market (probable gain) Membership of the Single Market exposes firms to greater competition, vastly increases the size of the “domestic” market, and provides opportunities for amalgamation and economies of scale – and these factors might be expected to increase UK competitiveness, specialisation and productivity. The extent of these dynamic effects is hard to measure, but there is evidence that the Single Market has helped lower mark-ups and increase the number of firms participating in several European sectors¹⁴.

However, these types of competitiveness and productivity impacts are not well covered in the studies covered in this review, likely because of the complexity of their measurement and modelling. Excluding the reduced-form empirical studies, none produced since 2007 include them (the exceptions are Ilzkovitz (2007) and Gasiorek (2002)).

Transition and disruption costs in case of exit (probable gain from staying in) Many of the studies in this review imply a reorganisation of the UK economy following exit from the EU, in response to changes in the tariff and non-tariff barriers to trade with EU and non-EU countries, or the attractiveness of the UK as an FDI destination (in the most extreme case, Minford (2006) models the “effective elimination” of UK manufacturing). However, few deal with the transition period as the UK moves to this new structure, or the possible lasting “hysteresis” costs. Pain & Young (2004) is a partial exception, forecasting a temporary decrease in employment of up to 160,000 people after three years. However, their model assumes a flexible economy and labour market in the long run, so the ultimate impact on employment is almost nil.

¹³ Evidence from Global Future

¹⁴ *Our Global Future* 3.1

Global value chains (probable gain) The UK is part of a European supply chain, and its trade with the EU is more focused on intermediates and cross-border value chains than that with the rest of the world. The OECD estimates that in 2011, 67% of the UK's gross exports to the EU were intermediates (against 59% of those to the United States), and that 8% of the value added in UK exports originates in the rest of the EU (against 3% from the United States).¹⁵ Data on global value chains have only recently been constructed¹⁶ and they are not yet incorporated into the structural trade models used in the studies in this review. However, they have the potential to make EU-UK trade more sensitive to tariffs and divergences in regulation. Open Europe (2015) notes that *"the imposition of these costs could severely disrupt such chains. However, capturing such an impact is difficult. For example, for production where the UK adds only a small percentage of the total value added, the imposition of these costs would be relatively large and could see the UK part of the chain being excised as it is no longer efficient."*

¹⁵ OECD.Stat Trade in Value Added (TiVA) – October 2015

¹⁶ The OECD started publishing them in 2013 - <http://www.oecd.org/sti/ind/measuringtradeinvalue-addedanoecd-wtojointinitiative.htm>

Table 1 Coverage of the impacts of EU membership

Y = YES, included P = Partially included N = No, not included	Credibility (see table 2)	Fiscal contribution	Trade tariffs	Non-tariff barriers	Extra-EU tariffs	Regulation	FDI	Competition from Single Market	Migration	Transitional/hysteresis	Global value chains
Ottaviano, Pessoa, Sampson & Van Reenen (LSE/CEP) (2014) "The Costs and Benefits of Leaving the EU" I	1	Y	Y	Y	N	N	N	N	N	N	N
Open Europe (2015) "What if... The consequences, challenges & opportunities facing Britain outside the EU" I		Y	Y	Y	Y	N	P	N	P	N	N
Open Europe (2015) "What if... The consequences, challenges & opportunities facing Britain outside the EU" II	2	Y	Y	Y	Y	Y	P	N	P	N	N
Minford (2006) "Measuring the economic costs and benefits of the EU"		N	N	Y	Y	N	N	N	N	N	N
Pain & Young (NIESR) (2004) "The macroeconomic impact of UK withdrawal from the EU"		Y	Y	P	N	N	Y	N	N	P	N
Ilzkovitz (European Commission) (2007) "Steps towards a deeper economic integration: the internal market in the 21 st century"		N	N	N	N	N	N	Y	Y	N	N

Ottaviano, Pessoa, Sampson & Van Reenen (LSE/CEP) (2014) "The Costs and Benefits of Leaving the EU" II		P	P	P	P	P	P	P	P	P	P
Campos, Coricelli, Moretti (2014) "Economic Growth and Political Integration"		P	P	P	P	P	P	P	P	P	P
Gasiorek (2002) "The accession of the UK to the EC: A Welfare Analysis"	3	N	Y	P	N	N	N	Y	N	N	N
Mansfield (2014) "A Blueprint for Britain: Openness not Isolation" (IEA Brexit Prize winner)		Y	P	P	Y	Y	P	N	N	N	N
UKIP/Congdon (2012) "How much does the European Union cost Britain"		Y	N	N	Y	Y	N	N	Y	N	N
Civitas (2004) "A Cost too Far"		Y	N	N	Y	Y	Y	N	N	N	N
Lyons (GLA) (2014) "The Europe Report: A Win-Win Situation"		N	N	N	N	P	N	N	N	P	N
Department of Business, Innovation & Enterprise (2010) "The UK and the Single Market"		N	Y	Y	N	N	N	N	N	N	N
TOTAL		7	6	5	5	4	2	2	2	0	0

4. Summary of estimates of the net impact of EU membership

Table 2 sets out the ten studies and twelve estimates of the impact of GDP membership covered in this review¹⁷, giving their overall results, their alternative scenarios for the UK and a brief analysis of their methodology. In each case, we have given the estimate a credibility score from 1 to 3, based on the following broad criteria:

Credibility score 1 (most credible) – these studies generally:

- Are up-to-date, particularly in their figures for tariffs;
- Employ a rigorous structural model of the UK economy with plausible assumptions;
- Have well-sourced data.

Credibility score 2 – these studies may:

- Share the characteristics of a credibility score 1 study, but be a little out-of-date;
- Share the characteristics of a credibility score 1 study, but employ less plausible assumptions, particularly around exit scenarios;
- Employ a reduced-form empirical methodology, without a detailed structure.

Credibility score 3 – these studies generally:

- Take an ad-hoc approach or the form of a “back-of-the-envelope” calculation, rather than a rigorous economic model;
- Have poorly-sourced or inadequate data;
- Include faulty analysis.

¹⁷ Ottaviano, Pessoa & Sampson (2014) offer two distinct estimates, as do Open Europe (2015) in our view.

Table 2 Summary and analysis of estimates of the overall impact of EU membership

	Net benefit (cost) of EU membership (exit)	Counterfactual	Methodology	Credibility rating (1-3)	Notes
Ottaviano, Pessoa, Sampson & Van Reenen (LSE/CEP) (2014) “The Costs and Benefits of Leaving the EU” I	1.1% to 3.1% of GDP	<i>EXIT</i> Optimistic case: <i>FTA deal signed with EU so no tariffs; NTBs rise to 25% of EU-US level; NTBs within EU fall a further 20% after UK exit; UK pays no fiscal contribution</i> Pessimistic case: <i>Tariffs are WTO MFN level; NTBs rise to 66% of EU-US level; NTBs within EU fall a further 40% after UK exit; UK pays no fiscal contribution</i>	Structural model (gravity trade model)	1	This study offers two estimates of the cost of leaving the EU. This conservative estimate is produced using a static structural model, with up-to-date data on tariffs. The judgements and proxies around NTBs seem reasonable, if arbitrary. The study seems like a thorough look at the impact of tariff and NTBs, but has quite a limited scope otherwise.
Open Europe (2015) “What if... The consequences, challenges & opportunities facing Britain outside the EU” I	0.1% - 2.2% of GDP	<i>EXIT</i> Most optimistic case: <i>Unilateral free trade + optimistic case</i> Optimistic case: <i>FTA deal signed so no tariffs; extra-EU FTAs maintained; NTBs in the form of customs controls similar to those faced by</i>	Structural CGE model	1	This study uses a mixed methodology, with a detailed CGE modelling exercise by Ciuriak Consulting overlaid in some scenarios with in-house Open Europe work on the cost of domestic regulation. We split the results in two in this table, with only the CGE results included in this entry. This study is similar to Ottaviano et al (2014), in that it presents a thorough and up-to-date look at the impact of tariffs and NTBs (but they include fewer

		<i>EFTA; UK pays smaller fiscal contribution</i> Pessimistic case: <i>Tariffs are WTO MFN level; significant NTBs in the form of customs controls; UK pays no fiscal contribution</i>			NTBs), and additionally gives limited detail on the implications for FDI and labour supply. The scenario in which the net impact of exit is almost neutral depends on the assumption that the UK embraces unilateral free trade, which may be politically unrealistic (as they acknowledge) – without it the cost is 0.8% of GDP.
Open Europe (2015) “What if... The consequences, challenges & opportunities facing Britain outside the EU” II	-0.6% to -1.6% of GDP	<i>EXIT</i> <i>As Open Europe I most optimistic case, plus varying degrees of domestic regulation</i>	Structural CGE model, overlaid with aggregation of regulation Impact Assessments	2	This part of the study adds Open Europe’s work on the cost of domestic regulation to the CGE-derived results in Open Europe I. While any attempt to add-in the costs of regulation is welcome, we think there are some problems with interpreting aggregated Impact Assessments as a net GDP impact, as set out in section 3.3.
Minford (2006) “Measuring the economic costs and benefits of the EU”	Welfare impacts equivalent to -2.5% of GDP	<i>EXIT</i> <i>UK embraces unilateral free trade through tariff cuts and deregulation while securing extensive FTA with EU, thus eliminating protection of domestic industries as it existed in 1999</i>	Structural CGE model with no rigidities	2	The tariff and protectionism estimates in this paper are a little out of date –Patrick Minford will be updating his analysis in February 2016.¹⁸ The analysis in this paper is motivated by evidence that the prices of manufactured goods in EU countries are substantially higher than those of the lowest-cost OECD supplier, implying that protectionism is restricting imports. This creates a welfare cost, since consumers would be better off paying lower prices for imported goods. This is a clever approach to measuring the costs of EU over-regulation. However, Minford’s analysis relies on an ambitious counterfactual scenario. Firstly, it is assumed (without much explanation) that all UK

¹⁸ <http://www.iea.org.uk/events/launch-new-edition-of-should-britain-leave-the-eu>

					protectionism is due to its EU membership, and that UK protectionism would disappear. But that sits oddly with his <i>Table 1</i>, which shows the UK having the <i>highest</i> tariffs of any EU member; and cuts against evidence that the Single Market has increased competition on prices within Europe.¹⁹ Secondly, the UK embraces unilateral free trade after exit, removing tariffs on imports from countries that do not dismantle their tariffs in return. Finally, the scenario construction means that EU membership is largely irrelevant to the UK – exit does not affect its access to the Single Market, raise tariffs or non-tariff barriers, or its attractiveness as an FDI destination. It is also worth noting that the analysis assumes that a re-organisation of the UK economy could be achieved smoothly without transition costs. This stretches credulity since the modelled changes to the UK economy are massive: for example, it is acknowledged that withdrawal entails the “effective elimination” of the UK’s manufacturing industry.
Pain & Young (NIESR) (2004) “The macroeconomic impact of UK withdrawal from the EU”	2.25% of GDP	<i>EXIT</i> <i>WTO MFN level tariffs;</i> <i>NTBs in the form of</i> <i>customs controls; zero</i> <i>fiscal contribution; exit</i> <i>from CAP; flow of inward</i> <i>FDI falls 10%</i>	Macro-econometric UK model	2	Although the figures for the Common Agricultural Policy and EU external tariffs in this paper are out of date, the main impact of EU membership in this model comes through the FDI channel – without the FDI impact the overall cost of exit is less than 0.5%. This paper is by some way the most thorough and empirically-focused treatment of FDI among the studies in this review, for reasons set out in section 3.3. The estimate of the impact of EU membership on FDI

¹⁹ CBI (2013) *Our Global Future*, section 3.1

					is based on an econometric assessment of the drivers of US investment in a panel of European countries, controlling for EU membership and country-specific fixed effects. However, the FDI figures are also a little outdated, based on analysis of the period from 1967-95.
Ilzkovitz (European Commission) (2007) “Steps towards a deeper economic integration: the internal market in the 21st century”	2.1% of EU-15 GDP in 2006	<i>CREATION OF SINGLE MARKET VERSUS NON-CREATION</i>	Structural CGE model	2	This paper covers the EU-15, rather than the UK specifically, so is less useful now that several UK-specific analyses have been published. However, it has some use as a rare example of an attempt to estimate the impact of the Single Market on competitiveness and productivity. The benefits of the Single Market are inferred from falls in pricing mark-ups and rises in total factor productivity. This is likely to capture much, but probably not all, of the overall impact of the SMP on productivity.
Ottaviano, Pessoa, Sampson & Can Reenen (LSE/CEP) (2014) “The Costs and Benefits of Leaving the EU” II	6.3%-9.5% of GDP	<i>NON-ENTRY Britain remained in EFTA</i>	Reduced-form (non-structural) empirical	2	The second estimate of the cost of leaving the EU in this paper uses a wholly different, less structural but more empirically focused methodology. The authors review existing credible empirical estimates of the impact of EU and EFTA membership on trade between country pairs; on membership of an economic integration agreement on external trade; and the impact of trade on domestic income. Combined, these give a large overall positive impact of EU membership, larger than that obtained with the structural estimate. The results indicate that the dynamic impacts of trade not included in structural models may be significantly positive. On the other hand, this “black box” estimate is hard to assess in detail, since it is impossible to break down how the

					various aspects of EU membership affect the UK. Furthermore, its plausibility depends on using the members of EFTA as proxies for the UK.
Campos, Coricelli, Moretti (2014) “Economic Growth and Political Integration”	8.5% of GDP per capita after 10 years of entry, 24% after 35 years	<i>NON-ENTRY</i> <i>Britain evolves in line with a “synthetic counterfactual” country</i>	Reduced-form (non-structural) empirical	2/3	Similarly to Ottaviano, Pessoa, Sampson & Van Reenen (LSE/CEP) (2014) II, this takes a non-structural empirical approach. A somewhat different is taken: rather than assume that the UK would have been a typical EFTA country had it not entered the EU, a “synthetic UK” is created from a basket of non-EU countries, based on initial similarities in terms of income per head, investment intensity, and other factors. However, the UK counterfactual is heavily weighted towards New Zealand, which received a negative shock from UK entry. The benefits to the UK could have been exaggerated as a result. Nonetheless, the large benefits found in this paper once again suggest that structural studies may miss many of the positives of EU membership.
Gasiorek (2002) “The accession of the UK to the EC: A Welfare Analysis”	Welfare impacts equivalent to 2% of GDP	<i>NON-ENTRY</i> <i>Britain doesn't enter EU, stays on WTO most-favoured (80s equivalent). Covers period up to 1986</i>	Structural CGE model	3	Although published in 2002, this study actually examines accumulated benefits of EEC memberships up to the 1980s, so its weight in this review is limited and we give it a credibility score of 3. Nonetheless, it is notable that it simulates the impact of increased competition in UK manufacturing and finds a significant positive impact in addition to a positive effect from trade. Such competitiveness benefits are often omitted in more recent studies.
Mansfield (2014) “A Blueprint for Britain: Openness not Isolation” (IEA)	+2.6% to -1.1% of GDP	<i>EXIT</i> <i>Best case</i> <i>Little disruption to EU-UK</i>	Review and aggregation of aspects of	3	This paper relies on a fairly brief review and aggregation of estimates of the different impacts of EU membership on the UK, rather than using a single consistent model. Some of the evidence used seems

Brexit Prize winner)		<i>trade; UK signs deals with Australia, Australia, and each of the BRICs; no fiscal contribution; regulation halved; 10% FDI increase</i> Most likely <i>Modest disruption to EU-UK trade; smaller fiscal contribution; regulation down by a third; no impact on FDI</i> Worst case <i>Tariffs and NTBs rise for EU-UK trade; UK loses deals with Canada and South Korea; no fiscal contribution; regulation halved; 35% FDI fall</i>	EU membership		inappropriate. For example, to estimate the impact of exit on EU trade, a relatively well researched area, Mansfield adapts an estimate of the potential impact of the EU-US TTIP deal on the UK. In fact, the nature of the UK's trade with the EU is very different from that with the US, being more focused on goods and supply chains²⁰, and the country imposes different tariffs. Similarly, the analysis of a potential UK-China deal relies on an analysis of the EU-South Korea deal and depends on the assumption that the UK would be better placed to make trade deals from outside the EU. He also uses Open Europe's work on the cost of regulation - some issues with their method are set out in section 3.3.
UKIP/Congdon (2012) "How much does the European Union cost Britain"	-10% of GDP	<i>Ongoing cost of EU membership – no detailed alternative scenario is constructed.</i>	Review and aggregation of aspects of EU membership	3	This paper reviews and aggregates estimates of the impact of the different impacts of EU membership on the UK, rather than using a single consistent model. There are significant problems with some of the estimates employed. To give a few examples: the UK's <i>gross</i> fiscal contribution pre-rebate is included, rather than the net contribution; the ultimate source for an estimate that EU regulation costs 5½% of GDP is a misquote in a 2006 Financial Times interview with former Enterprise Commissioner Gunter Verheugen; another estimate that the regulation cost is 4% of GDP is solely based on a 2004 Financial Times story

²⁰ See section 3.3

					quoting Peter Mandelson in which no further details are given; and a claim that 1.3 million tonnes of fish are discarded under the EU fisheries policy each year “seems to have been made by the United Nations Food and Agricultural Organization, but I have not been able to verify the exact source” [Endnote 9]
Civitas (2004) “A Cost too Far”	-4% of GDP	<i>Ongoing cost of EU membership – no detailed alternative scenario is constructed.</i>	Review and aggregation of aspects of EU membership	3	This paper reviews and aggregates estimates of the impact of the different impacts of EU membership on the UK, rather than using a single consistent model. Some of the evidence used is questionable. For example, the central estimate of the cost arising from regulation is based on an aggregation of “regulatory impact assessments” without netting out the costs, including any benefits, or considering which similar regulations the UK might have introduced itself outside of the EU (see section 3.3 for issues with this methodology). Furthermore, the argument that the Single Market has brought zero net benefit seems mainly founded on the observation that extra-EU trade is growing faster than intra-EU trade, which likely has more to do with rapid catch-up growth in emerging economies than the success or otherwise of the Single Market. The possible cost of re-erecting trade tariffs between the UK and EU is not discussed.
Lyons (GLA) (2014) “The Europe	+31% to -13% of GDP ²¹	EXIT	Unclear	3	The section of this report dealing with the EU exit scenarios consists of a wide-ranging discursive piece on long-term growth, supply side reform and

²¹ The overall impact in the original paper is presented in terms of growth rates and four scenarios. In the best case for EU membership (the EU reforms but the UK votes out and withdraws from the world), the growth difference is 2.75%-1.4% = 1.35pp or 31% total difference after twenty years (the timeline considered in the paper). In the worst case for EU membership (the EU doesn’t reform and the UK votes out and reforms unilaterally), the growth difference is 2.5%-1.9% = 0.6pp or 13% total difference after twenty years.

Report: A Win-Win Situation		<i>“Brave new world”</i> <i>EU enacts a basket of supply-side reform with UK in</i> <i>“One regime two systems”</i> <i>EU fails to reform but UK exits and does so</i> <i>“Business as usual”</i> <i>Status quo</i> <i>“Little England”</i> <i>UK exits and goes backwards on reform</i>			potential future growth, with a limited discussion of the practicalities of EU membership. The growth estimates themselves are presented with almost no explanation beyond “we draw on the different historical regimes for growth and inflation”. The credibility of these figures is therefore very difficult to assess.
Department of Business, Innovation & Enterprise (2010) “The UK and the Single Market”	+6% of GDP per capita	NON-ENTRY <i>Single Market wasn’t created.</i>	Reduced-form (non-structural) empirical	3	This estimate is comparable to Ottaviano, Pessoa, Sampson & Van Reenen (LSE/CEP) (2014) II, in that it combines existing estimates of the impact of EU membership on trade and the elasticity of income in response to trade. However, it is a relatively brief calculation, without the scope or depth of analysis of the other empirical studies in this review.

5. Summary of estimates and conclusions

Studies that attempt to estimate the overall net impact and cost/benefit of Britain's EU membership use a range of counterfactuals, employ a variety of different methodologies and vary widely in their scope. However, from a careful review of the available studies, a few broad themes emerge:

- **The clear majority of the most credible analyses of the impact of EU membership find that it has delivered a net economic benefit to the UK.** That is, studies that employ a rigorous modelling methodology, realistic counterfactuals and up-to-date figures usually find that Britain would most likely lose out economically from exiting the EU. On the other hand, most (but not all) studies finding a large cost to the UK from EU membership arguably tend to be less rigorous in terms of modelling methodology and more stretched in terms of the likelihood of their counterfactuals.

Table 3 Average and range of EU impact estimates in all studies covered in this review

Credibility rating	Range of GDP impacts	Number
1	+0.1% to +3.1%	2
2	-2.5% to +9.5%	5
3	-13% to +31%	7

- **Those studies which find a net benefit from EU exit are based on some relatively ambitious counterfactual scenarios.** Examples include: unilateral free trade, in which the UK abandons tariffs on imports for no reciprocal reduction in tariffs on its exports; major repeals of regulation (such as scrapping all climate change laws or removing EU-derived product standards or domestically consumed goods in the Open Europe (2015) “extremely liberal” scenario); or scenarios in which Britain undergoes a dramatic industrial shift from manufacturing to services with no impact on unemployment. These assumptions imply considerable disruption to the economy, which puts their practical feasibility in doubt.
- **No single estimate of the net costs and benefits of EU membership is comprehensive, so the overall impact of membership may be greater than any one study implies.** There are a wide range of ways in which EU membership affects the UK economically, and no one study covers all of them in detail. Indeed, the most rigorous studies generally cover only a handful and, moreover, they often cover different areas. For example, Pain & Young (2004) has by far the most detail on FDI impacts, but little on NTBs; while Ottaviano et al (2014) have broad coverage of NTBs but nothing on FDI. Therefore, *many of these studies should be viewed as complements, rather than substitutes*. It would be inappropriate to summarise such studies by simply averaging them – the net impact of EU membership may be greater than any one study implies.
- **Some aspects of EU membership are poorly or rarely analysed.** This is particularly the case with: on the benefit side, the impact of the Single Market on competition, economics of scale and global value chains; and on the cost side, the costs of poorly designed regulation.
- **...and empirical studies suggest these omitted factors could be strongly positive.** Structural theoretical macro-models of the UK economy have difficulty handling factors like global value chains and regulation, since these are complex emergent processes taking place at the micro-level. However, empirical studies that use non-EU countries as proxies for how the UK may

have fared without membership implicitly include all impacts. It is notable, therefore, that the two examples featured in this review find that the UK has received a large benefit from its EU membership. These empirical approaches have their limitations, not least that their estimated overall benefits cannot be broken down and scrutinised, and the results in Campos et al (2014) are very large – but this does at least indicate that the unseen dynamic impacts of EU membership could be strongly positive.

As the above analysis has shown, there is a wide variety in scope and methodology of the existing studies of the economic benefits and costs of the UK's membership. As such, there is no definitive way to aggregate or combine these studies to produce a single, comprehensive estimate. The studies we regard as more credible produce estimates ranging from -2.5% to +9.5% of GDP, but they differ greatly in scope and methodology. Nonetheless, by drawing together the results of these studies and the key themes outlined above, we think it is possible to make a judgement about where the overall the cost or benefit of EU membership most likely lies (summarised in table a in the executive summary):

- The two studies of the costs and benefits of EU membership that we think of as most credible (employing rigorous modelling methodology, realistic counterfactuals and up-to-date figures) are Ottaviano et al (2014) I and Open Europe (2015) I, which come out with an average benefit of **1½%** (and a range of 0% to +3% of GDP). But these studies are limited in scope and focus largely on the fiscal, trade tariff and non-tariff barrier elements of EU membership.
- There is evidence that significant additional benefits are derived from FDI and competition from the Single Market, which is something our members highlight. According to Pain & Young (2004), the former could be worth around 1¼% of GDP; while according to Ilzkovitz (2007), the latter could amount to another 1¾% (a finding broadly backed by the older Gasiorek (2002) study). This takes us to somewhere in the region of **5%** of GDP.
- There are also likely to be costs from poorly-designed EU regulation. Minford (2006) pegs these at 2½% of GDP and Open Europe at ½% or 1½% of GDP. We have raised some questions about the methodologies in both cases (see section 3.3 and table 2), but adding the average of these estimates would nonetheless push the net benefit down to around **3½%**.
- Some impacts of EU membership have been underestimated or are barely covered at all in these studies (such as global value chains and immigration, cited by many CBI members as a key benefit) – and the purely empirical studies in this review suggest that, if anything, the benefits of EU membership may be *understated* by other theoretical studies. For example, Ottaviano et al (2014) II generate an estimate of up to 9½%, implying that the above 3½% figure missed 6% of GDP worth of benefits. We would discount this figure heavily since it is difficult to cross-examine, but even doing so by 90% to 75% gives us an overall net benefit of **+4% to +5% of GDP, within a range of 1% to 9½% of GDP**.
- +4% to +5% of GDP still seems like a reasonable and conservative judgement of the most likely economic value of the UK's EU membership.

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