High Hopes, Long Odds

On the False Promises of Brexiteer Deals with the EU and US

December 2019

LSE IDEAS is LSE's foreign policy think tank.
Through sustained engagement with policymakers and opinion-formers, IDEAS provides a forum that informs policy debate and connects academic research with the practice of diplomacy and strategy.

IDEAS hosts interdisciplinary research projects, produces working papers and reports, holds public and off-the-record events, and delivers cutting-edge executive training programmes for government, business and third-sector organisations.

High Hopes, Long Odds

On the False Promises of Brexiteer Deals with the EU and US

CONTRIBUTORS

John Ryan is a Visiting Fellow at LSE IDEAS. John is a Fellow of the CESifo Network. He works as a Senior Brexit adviser for private and public sector organizations.

Gabriel Felbermayr is President of the Kiel Institute for the World Economy and Professor for Economics and Economic Policy at Kiel University. His research and advisory activities focus on economic global governance and international trade policy.

Clemens Fuest is President of the ifo Institute and Professor for Economics and Public Finance at the Ludwig Maximilian University of Munich. A member of various advisory groups, he is an expert on economic and fiscal policy, taxation and European integration.

Jasmin Gröschl is the Deputy Director of the ifo Center for International Economics. Her research interests are focused on empirical and theoretical modelling of international trade flows. Dr Gröschl has published extensively on the trade cost effects of the UK's various potential arrangements with the EU and the effect of border controls.

Daniel Stöhlker is a PhD student at the Munich Graduate School of Economics and a Junior Economist at the ifo Institute in the research group 'Fiscal and Tax Policy'. He works on European fiscal policy and international tax and transfer systems.

*Each contributor is responsible solely for the views expressed in their contribution.

Contents]

AFTER A NO-DEAL BREXIT A US TRADE DEAL LOOKS OPTIMISTIC

John Ryan

> "The political fallout associated with the economic hit of no deal—or any form of harder Brexit—should not be underestimated."

The phenomenon of British exceptionalism towards the European Union is set to take a new and dramatic turn, while the United Kingdom's chaotic political divisions will not disappear any time soon. With the right-wing populist Boris Johnson taking the country's premiership, Britain's Trumpian moment has arrived. If a no-deal Brexit becomes a reality, it may not only be a sore awakening for Boris Johnson and his government, but also for the United Kingdom.

After another period of painful and unproductive debate in parliament, the EU has again agreed to extend the UK's departure date—which is now set for 31 January 2020. If by that time the UK parliament has agreed on the Withdrawal Agreement, negotiations will start on a trade agreement between the UK and the EU. If no satisfactory agreement between the UK and EU is found, the UK will leave the EU without a deal in place. While this would leave the UK free to pursue a domestic and international agenda without hindrance by EU rules, the immediate disruption, including an unavoidable hard border between Northern Ireland and Ireland, will make for a very uncomfortable position economically and politically. The Irish government have discounted the UK's verbal assurances to keep the border as frictionless as possible because of decades of experience of negotiations with the British government over Northern Ireland saying the right things but not necessarily delivering.

In this report, I will examine the failure of the Withdrawal Agreement and the problems with the poorly executed UK strategy for Brexit negotiations. The no-deal Brexit scenario will complicate the economic and political consequences for Ireland, and this will have repercussions for trade negotiations with the United States, not only because of the historic commitment by the US government to the peace process in Northern Ireland, but also because the Irish-American vote matters deeply in US national politics. With hard Brexiteers largely ignorant to these political nuances in the US, this paper concludes with an examination of how an Irish-American congressional lobby that is worried about the integrity of the Good Friday Agreement would block a UK-US trade deal.

The Withdrawal Agreement Conundrum

The Republic of Ireland and the United Kingdom have a long, shared history in Europe. They agreed a common travel area in the 1920s and joined the European Union together in 1973. This means that there has never been a moment when one country was in the EU and the other not. However this was only a happy coincidence, and one which would come crashing down in June of 2016 when the UK voted to leave the EU and make laws—and life—at the border ever more complicated.[1]

On 24 June 2016, the day after the EU referendum, the European Union and the Irish Government began their Brexit contingency planning and started to voice concerns about the Good Friday Agreement and the re-emergence of a hard land border.[2] If left unresolved, this issue would bring back the checkpoints of the past for trade and travel, and many feared it would bring back the violence of the past, too.

It was for this reason that the Irish Prime Minister Enda Kenny visited the UK Prime Minister in July 2016, the month that Theresa May took office, to secure a public assurance that there would be no return to hard borders. As Kenny did so, the EU threw its weight behind Ireland as well and announced that the border issue would need to be resolved if the UK wanted to leave with a deal.[3]

In December 2017, May was suggesting that she would sign up to 'regulatory alignment' between Northern Ireland and the Irish Republic, which would successfully avert a hard border. However, the Irish government was reluctant to trust her. Decades of negotiations with the British government over Northern Ireland had taught the Irish that the UK frequently fails to deliver on its promises. This would indeed be the case.

The most fraught negotiations were over the UK's border with Ireland. The EU27 were firm that there would be no hard border on the island of Ireland, and the UK government agreed. However, this was hard to square with the UK government's determination to leave the EU Customs Union and Single Market, which implied new border checks. In August 2017 the UK tabled a proposal for a UK-EU customs partnership arrangement under which both parties could have different external tariffs and rules of origin, and yet have frictionless trade between them.[4]

Under the UK's proposal, the UK would essentially implement two parallel systems at its borders. For goods coming into the UK that were destined for the EU27, the UK would act as an agent on behalf of the EU, levying EU tariffs and checking that products met EU standards. For goods destined for sale in the UK, it would levy UK tariffs and check that products met UK standards. The UK government acknowledged this would need a 'robust enforcement mechanism' and the tracking of goods to ensure that they reached their intended destination.[5] The UK also negotiated proposed measures to streamline customs procedures, the use of technology to enable any checks to be carried out virtually, and continued regulatory alignment in agricultural products.[6]

Unsurprisingly, the UK's complex proposals were met with scepticism by the EU27, and few were persuaded that they were viable. Unable to agree on a detailed solution on the UK-Ireland border, the UK and EU27 agreed on a set of overarching principles. These focused on upholding the Good Friday Agreement; avoiding a hard border, including any physical infrastructure; and preserving the integrity of the UK's internal market, by ensuring that there would be no customs border between Northern Ireland and the rest of the UK

Crucially, the Withdrawal Agreement included a lengthy Protocol on Northern Ireland, which came to be known as the 'backstop', designed to prevent the return of a hard border in the island of Ireland. This was ensured through a hybrid of two mechanisms. It had UK-wide elements, providing for the creation of a single customs territory between the EU and UK in the event that the UK and EU fail to reach an agreement on future relations by the end of the transition period. It also had elements that only pertained to Northern Ireland, committing the region to continued harmonisation of a series of EU technical rules and regulations, while the rest of the UK could diverge from them.[7]

However, it rapidly became clear that the Withdrawal Agreement and Political Declaration did not have the backing of a majority of MPs in the UK Parliament. Given the delicate parliamentary arithmetic, Theresa May needed virtually all MPs in the Conservative Party and Northern Ireland's Democratic Unionist Party (DUP) on board. Eurosceptic Conservative MPs from the European Research Group (ERG) wanted a hard Brexit and strongly opposed the wording of the Northern Ireland backstop arguing that it could permanently 'trap' the UK into a customs union with the EU. The backstop also crossed a red line for the DUP as it implied regulatory checks between Northern Ireland and the rest of the UK At the other end of the political spectrum, pro-European Conservatives disliked the Withdrawal Agreement as it failed to ensure frictionless trade with the EU27. Meanwhile the Labour Party and smaller opposition parties were united in their opposition to the Agreement.

A no-deal Brexit[8] and the threats to the Good Friday agreement[9] could force the people of Northern Ireland to consider a border poll and the possibility of a United Ireland.[10] One possibility might be a border poll in Northern Ireland concurrent with a constitutional referendum in the south. The interim constitutional arrangements would preserve the *status quo* within Northern Ireland as much as possible, continuing both devolution and compulsory power-sharing but swapping the roles played by Dublin and London. The political dynamics unleashed by Brexit may make a border poll inevitable. The Republic of Ireland referendum would redefine the national territory to include Northern Ireland but would then also prescribe interim constitutional arrangements and a set of more extensive constitutional changes that would apply five years later by default with a new constitution being enacted by plebiscite on an all-island basis. Planning for a possible vote for a United Ireland in both jurisdictions would be needed.[11]

The UK Finds Brexit Negotiations Difficult

In its handling of Brexit, the UK government has showed a large degree of ineptitude. It failed to plan for Brexit before the referendum and it has never quite caught up. Now, three years after the decision was taken to leave the EU, Conservative Party divisions continue to split the cabinet and sabotage attempts to clarify goals and strategy.[12]

In June 2017 May compounded these difficulties by calling an election that lost the Conservatives' parliamentary majority and made her party dependent on the Democratic Unionist Party to form a government. The DUP, a fiercely pro-union party that had opposed the 1998 Good Friday

Agreement that brought peace to the island of Ireland, used its new leverage in Parliament to block any differentiated status for Northern Ireland after Brexit lest it weaken the union. Bowing to the DUP's demands, the Prime Minister tried to appease her coalition partners by widening the alignment to encompass the UK as a whole, not just Northern Ireland. This in turn infuriated the other Brexiteers.

After first suggesting the UK would agree to some alignment between Northern Ireland and the Irish Republic, and subsequently suggesting regulatory alignment more broadly between the UK and the EU, it was clear that Theresa May would fail to provide a solution to the Irish border issue.[13] For this reason, the European Commission unveiled its own, "the backstop," which would guarantee that the border remain open no matter what happened in the future. The backstop would ensure that Northern Ireland remain integrated within the EU's customs union and single market for goods, supplemented by an EU-UK customs union, until it was rendered unnecessary either by the future relationship itself or other means.[14] In layman's terms, it is an insurance policy enabling the UK and EU to fulfil their shared commitment to respect the Northern Ireland peace agreement by keeping the border as open after Brexit as it is now.[15]

The insertion of the Irish backstop into the Withdrawal Agreement would cause May's deal to be rejected in Parliament. The meaningful vote on the Withdrawal Agreement took place on 15 January 2019 and the government suffered the largest defeat of any government in modern parliamentary history, losing by 230 votes. This prompted the Labour Party to table a motion of no confidence, which the government narrowly won the next day by 325 to 306 votes.[16] It raised the prospect of the UK crashing out without a deal and plummeting Northern Irish politics further into crisis.[17]

As many of the objections to the Withdrawal Agreement continue to relate to the backstop, there has been much discussion about alternative approaches to safeguarding an open border. After May's disastrous defeat, the UK and EU committed to a programme of work to examine technological solutions, rather than political solutions, designed to avoid customs checks at the border. In support of this critical mission, the UK Government has since established an advisory group to take this work forward.[18] An Alternative Arrangements Commission had also been established by the Prosperity UK think tank to address the same issues. In both cases the focus has been on trusted trader schemes and other methods of maintaining controls while avoiding the need for border posts and searches of vehicles. Determined though the UK may have been to come up with a concrete policy, neither the EU nor the Irish government were convinced, having tried and failed to find or produce workable technological solutions of their own.[19, 20]

Another alternative that has been suggested is that a time limit could be applied to the duration of the backstop. This would assuage the fears of Brexiteers that an indefinite backstop could keep Northern Ireland, or even the whole of the United Kingdom, locked in the EU in perpetuity. But the problem is that such an arrangement would negate the backstop as a viable policy. It is intended as an insurance policy if no other arrangements can be agreed—for *as long as* they are not agreed—so a time limit would render it worthless.

The lack of knowledge and understanding of Ireland goes to the highest levels of the British government.[21] Karen Bradley, former Secretary of State for Northern Ireland for Theresa May, showed her ignorance of Irish politics by confessing that, "[...] when I started this job, I didn't understand some of the deep-seated and deep-rooted issues that there are in Northern Ireland." Bradley only discovered while Northern Ireland secretary that Northern Irish nationalists "don't vote for unionist parties and vice versa". In other words, until very recently, she had been incurious about one of the central issues of nineteenth- and twentieth-century British history.[22] In similarly out-of-touch remarks, the cabinet minister Priti Patel has suggested using the threat of food shortages—that is, bringing back an Irish famine—as leverage to change Ireland's position. The shameful proposal won no allies in Dublin, or anywhere else for that matter. Bringing similar embarrassment to Britain, Boris Johnson is said to have asked why Irish Prime Minister Leo Varadkar, who is of Irish-Indian heritage, is not "called Murphy like the rest of them".[23]

As part of its Brexit contingency plans, Ireland is also opening up new ferry routes to continental ports as alternative routes for Irish exports that rely on the so-called UK land-bridge, a transport route that connects Irish importers and exporters to international markets via the UK road and ports network. Under any Brexit scenario, Ireland's economy looks certain to become more European. By backing a no-deal Brexit, the DUP has enhanced the likelihood of a border poll in the foreseeable future and has put the question of Irish unification firmly back on the agenda.[24] Brexit in any form has endangered the Good Friday Agreement and given new life to identity politics in Northern Ireland. Until this is resolved, there is also scant chance of reviving power sharing at Stormont.

The Good Friday Agreement effectively ended a conflict that cost more than 3,500 lives. Historic enemies agreed to share power and respect each other's identities and beliefs. The genius of the agreement was compromise: everybody lost something, so everybody won something. Brexit has evolved into the exact opposite of that spirit. It is instead politics as a zero-sum game: a victory for me means a defeat for you. This approach is damaging enough in Britain, but it is disastrous across the Irish Sea.[25]

No-Deal Brexit Economic and Political Consequences for Ireland

The UK now accounts for just 13.4% of Irish goods exports, down from 55% in 1973. Ireland has made itself an attractive hub for multinationals, which employ one in eight private sector workers and account for 90% of goods exports. The UK share of Irish services exports has also declined to 16% from 22% a decade ago, with the bulk of those in sectors such as finance, insurance and information technology.

The Irish Central Bank published its estimates of the macroeconomic implications of how a disorderly Brexit would affect the Irish economy in the first Quarterly Bulletin of 2019. The Irish economy would be affected by heightened stress in financial markets and a potentially large depreciation of sterling. The deterioration in economic conditions and a more adverse outlook would cause firms and households to cut spending. There would be disruptions at ports and airports as border infrastructure would be unable to cope with the new customs requirements, at least for an initial period. Imports would be affected with implications for firms through disruption to their production processes and for households through the price and availability of consumer goods. Irish exports would fall due to an immediate and large reduction in demand from the UK and the fall in sterling.[26] A Department of Finance/ESRI study[27] found that GDP in Ireland ten years after Brexit would be around 2.6% lower in a "deal scenario", 4.8% lower in a "no-deal scenario", and 5.0% lower in a "disorderly no-deal scenario" compared to a situation where the UK stays in the EU.

There is little doubting that this would cause problems back in Britain, too. Although, as the Irish economist David McWilliams has noted, trade between Ireland and the UK has fallen from 91% of Irish exports in 1953 to 11% today, the Irish-British partnership remains of central importance to Britain. Ireland is the UK's fifth largest export market, and the UK exports more to Ireland than it does to China. Furthermore, the UK runs a large trade surplus with Ireland — in fact, it is the UK's second-largest trade surplus after the US[28] The idea that Brexit will give way to a "Global Britain," one which does not need Europe, is geographically and empirically false.

In addition to facing economic distress and enduring political instability, Ireland may also have to fight to ensure its standing in the EU. In a post-Brexit scenario, there are concerns that commercial interests in the UK would be able to smuggle goods into the EU's single market through the Northern Ireland land border that do not meet EU standards and that evade EU tariffs. In such a case, Ireland may be forced to harden its border with the rest of the EU.

The Republic of Ireland's Minister for Foreign Affairs and Trade, Simon Coveney, said his country would not agree to drop the backstop merely for the "political convenience" of the British Prime Minister. In a forthright interview with the *Sunday Business Post,* Coveney added that the EU appears to be supporting Ireland here. "There isn't a single EU member state putting pressure on Ireland to move away from that position, despite the fact that the UK has spoken to all of them and used all of the persuasion that they can muster," the Foreign Minister said. In large part, this appears to be due to his recognition that dropping the backstop would only create problems for Ireland further down the line. Prime Minister Leo Varadkar has expressed much the same, telling Prime Minister Boris Johnson at their meeting in Dublin that, for the Irish Government, having no "backstop" in the Withdrawal Agreement was the same as having no deal.[29]

Boris Johnson's Brexit Gamble

These stakes, and the concerns accompanying them, have only been raised since Boris Johnson became Prime Minister in July 2019. Other than winning the unenviable approval of the American president–"Boris is good. They call him Britain Trump," President Trump has said–Johnson's victory has not been met with much applause by Britain's partners.[30] Deutsche Welle, a German outlet, mocked the new era as 'Boris Johnson's *clowning* glory '.[31] Seen as Donald Trump's boastful mini-me with no electoral mandate from the British people and with a record of= ineffectiveness, ineptitude and intellectual laziness, Boris Johnson nevertheless set out on a crusading course which quickly cost his government its working majority after a series of Conservative resignations, defections, and expulsions.[32] In a few short weeks, there was a purge of unprecedented scale as the new government and the Conservative Party were remade in the mould of the Prime Minister and the hard Brexit base from which he derives his support.

The Prime Minister then quickly failed to fulfil his "do or die" pledge to get the UK out of the EU by 31 October. After attempting to "prorogue" Parliament—suspending all of its official business in the run-up to the UK's departure date from the EU—Johnson was faced with a cross-party coalition that successfully stymied his hard Brexit hopes. The bill to do so, which was drafted by Labour MP Hilary Benn, the Chairman of the Brexit Select Committee, was approved at record speed on 4 September 2019, by a majority of 328 to 301

–with the crucial vote of moderate Tory MPs–and specifically required the UK Government to seek an extension until at least 31 January 2020.

After a summer of brinkmanship and bad-tempered exchanges between Brussels and London, Boris Johnson struck a deal with the EU on 17 October.[33] On 22 October the second reading of the Withdrawal Agreement bill was passed 329 to 299. The parliament voted against the three-day timetable for scrutiny by 322 to 308.[34] On 28 October the EU27 agreed that it will accept the UK's request for a flexible extension until 31 January 2020. The UK was due to leave the EU on 31 October 2019, but Boris Johnson was required to request an extension after Parliament failed to agree a Brexit deal. The prime minister had repeatedly said the UK would leave on 31 October deadline with or without a deal, but the law–known as the Benn Act–required him to accept the EU's extension offer. So, Boris Johnson's "do or die" pledge to leave by 31 October is no more–it is dead. This means that no-deal Brexit being taken off the table, at least until 31 January 2020.[35]

With no other option to overcome its gridlock, Parliament subsequently agreed to call for a general election to be held on 12 December 2019 which will either deliver the Conservatives the majority to push Brexit past the finish line or provide Labour and the opposition with the votes to review and reverse course. Although MPs have ably mobilised on multiple occasions to prevent Johnson from forcing through a no-deal Brexit, their past efforts provide no future guarantees. For one thing, the EU has tired of granting Brexit extensions and seems increasingly inclined to stop parliament from kicking the can down the road. For another, the upcoming election has the possibility of bringing to Parliament more Conservative MPs and votes in line with the Prime Minister's interests.

At the end of the day, all of this still relates only to the Withdrawal Agreement. The crux of the Brexit issue—renegotiating the UK's relationship with the EU—has not yet been addressed. In addition, with each Brexit extension eating into the UK's transition period, the allotted time to negotiate the future relationship has gotten shorter and shorter. In the most favourable scenario for the Prime Minister, in which the voters keep him in office and vote in more of his colleagues, he will need to make the potentially unpopular decision of extending the transition period or the certainly inadvisable decision of leaving it as is.

The talks will take place to the beat of a ticking clock starting early February 2020. The European Commission is expected in early February to present a draft-negotiating mandate for the free trade agreement. The EU27 will then have to approve its negotiating mandate. Once negotiations get underway, Britain will have until 1 July 2020 to request an extension to its post-Brexit transition period beyond the end of 2020 (to as late as the end of 2022). Having indicated on various occasions that he will not extend it, Johnson—if re-elected—appears poised to ensure that the UK's post-Brexit transition period will expire at the end of 2020. At this point, a new no-deal conundrum will be reintroduced: either there will be a future relationship deal in place or the UK will crash out without a deal and trade with the EU on basic World Trade Organization terms.

With the Prime Minister's eagerness to leave the EU as soon as possible, the economic hit of a Johnson-induced no-deal Brexit should not be underestimated. We know that higher barriers to trade, investment and migration will damage UK productivity growth and that British consumers will be forced to buy more expensive imports or lower quality British alternatives, hitting living standards. What is more, the Brexit referendum in 2016 coincided with robust global growth, which has since faded. With signs of a slowing economy, both for Europe and the world, the costs of Brexit will now be more acute. The immediate damage of a hard Brexit could be enormous, if only because of the uncertainty and the lack of preparation, both among governments and companies in Britain and the EU.

The Good Friday Agreement and the Irish American Congressional Lobby

Throughout this protracted Brexit saga, the central problem has been the Irish border issue, which Brexiteers have long avoided. Indeed, at every step they have shown a simple lack of concern about the communities who rely on the border's openness for their peace and prosperity.[36] Even worse, Michael Gove, a Conservative cabinet minister now tasked with no-deal planning, previously authored a pamphlet attacking the Good Friday Agreement, comparing it to Munich appeasement.[37]

In addition, Brexiteers have claimed confidently that such inconveniences would prove to be insignificant for a post-Brexit Britain that has been able to secure a better and more prosperous trade deal with the United States. Indeed, the Prime Minister has made a US-UK free trade agreement a guiding ambition of his government, and he has claimed that the UK would be "first in line to do a great free trade deal" with the Trump administration. Across the pond, this fantasy has been inflated by President Trump, too, who said in late July that he had spoken to Boris Johnson by phone and supported an "ambitious trade agreement" with Britain after Brexit. Trump's message has also been echoed by Senator Tom Cotton, a Republican from Arkansas, and 44 of his Senate colleagues who sent a letter to Johnson pledging unwavering support for the United Kingdom as it exits the European Union.[38]

However, as Boris Johnson and Donald Trump have been making their triumphant claims, the Irish Government has been building up support among its own allies in the US Congress. So far, it is clear the Irish are in the stronger position in Washington.[39] This has primarily been achieved with the help of the Friends of Ireland Caucus in the US Congress, which has been an effective advocate for Irish interests in the United States and which claims to represent the interests of America's large and politically diverse Irish-American constituency.[40] Today, many of Congress' most important officials have sided with the Irish on backstop concerns and against the British government on a potential trade deal.

Richard Neal, for example, the chair of the House Ways and Means Committee, which has authority over trade deals, has said, "Any negotiation of a bilateral trade agreement with the UK […] needs a firm commitment on no hard border".[41] This has been reiterated by Nancy Pelosi, the Speaker of the US House of Representatives, who declared in a recent speech at the London School of Economics: "If there's any harm to the Good Friday accords – no trade treaty".[42] There is also Chuck Schumer, the Democrats' leader in the Senate, who has declared his "inveterate opposition to any prospective trade deal with the UK that either undermines the landmark Good Friday Agreement or facilitates a return to a hard border."

Even if Trump were to have his way, the road to a UK-US Free Trade Agreement is a long one. Today, over a year after the US, Mexico, and Canada began renegotiating the NAFTA agreement, congressional approval is still pending and there is no discernible end in sight. A UK-US Free Trade Agreement, without a pre-existing framework from which to build as in NAFTA's case, will be even tougher to negotiate and ratify. What's more, it will now take longer to put on the congressional docket. Given that we are in the early stages of both impeachment proceedings and the 2020 presidential election campaign, Washington is as distracted as ever. In a hard Brexit or no-deal scenario, Brexiteers who claim that a US-UK trade deal will be the solution for or compensation to strained economic relations with the EU would have to wait a considerable length of time for a US trade-deal bail-out—if, indeed, one ever comes.

Conclusion

The political fallout associated with the economic hit of no deal—or any form of harder Brexit—should not be underestimated. Yet the UK government's ignorance of the complexity of the Irish border issues could create a no-deal crisis with vast political and economic ramifications.

A no-deal Brexit would mean a hard border across the island of Ireland, and the ensuing economic and political upheaval could lead to calls for Northern Ireland to quit the UK altogether to unify with the Republic of Ireland. The Good Friday Agreement that brought peace to Northern Ireland states that the UK's Northern Ireland secretary must enable a border poll if at any time it appears likely that the majority of voters would express a desire to form part of a united Ireland. With this in mind—the disintegration of the United Kingdom—the consequences of a no-deal Brexit would be stark. If the UK languishes without a deal with both the EU and the US, it may see Northern Ireland and Scotland leaving the UK

The Brexit process has revealed the weaknesses of Westminster's insular politics. At every turn, it has seemed incapable of running a modern economy and society. And as time has passed, the dysfunction has only grown. While the election on 12 December hopes to deliver a majority that might resolve and move past this protracted Brexit morass, it also threatens to yield an equally divided parliament, further complicating the Brexit conundrum.

Notes

1 Gavin Sheridan, "How Britain's dark history with Ireland haunts Brexit", New Statesman 18 February 2019

2 Sir Ivan Rogers, "The inside story of how David Cameron drove Britain to Brexit", Oxford Prospect/Hertford lecture at Hertford College, 24th November 2017

3 Kevin O'Rourke, "A Short History of Brexit: From Brentry to Backstop", Pelican Press, London, 2018

4 HM Government, Future Customs Arrangements, 15 August 2017

5 Ibid

6 Ibid

7 European Council, Agreement on the Withdrawal of the United Kingdom of Great Britain and Northern Ireland from the European Union and the European Atomic Energy Community, as Endorsed by Leaders at a Special Meeting of the European Council on 25 November 2018, 25 November 2019.

8 Peter Walker and Jessica Elgot, "Sinn Féin: vote on Irish reunification must follow no-deal Brexit", The Guardian, 1 August 2019

9 Dearbhail McDonald, "Irish peace is too precious to be squandered by the Brexit ultras", The Guardian, 2 August 2019

10 Alan Whysall, "A Northern Ireland Border Poll", The Constitution Unit, Department of Political Science, University College London, March 2019

11 Oran Doyle, "Northern Ireland border poll must avoid pitfalls of Brexit Referendum", LSE Brexit, 1 July 2019

12 John Ryan. "A British exit would harm the EU's global credibility – and it could rip apart the Conservatives, too", LSE BrexitVote, 26 February 2016.

13 Northern Ireland and Ireland - position paper HM Government, 16 August 2017.

14 Michael Cox, Michael Burleigh, Adrian Guelke and Paul Gillespie, "Ireland-UK Relations and Northern Ireland after Brexit" Second Edition, LSE IDEAS Strategic Update, May 2019

15 Mary C. Murphy, "Europe and Northern Ireland's Future: Negotiating Brexit's Unique Case", Agenda Publishing, London, 2018

16 Heather Stewart, Jessica. Elgot and Peter Walker, Theresa May Survives Vote, but Britain Remains in Brexit Deadlock, The Guardian, 17 January 2019

17 Mary C. Murphy, **"**Europe and Northern Ireland's Future – Negotiating Brexit's Unique Case**"**, Agenda Publishing, 2018

18 See HM Government, "Technical advisory group on alternative arrangements to the backstop established", 20 June 2019

19 Sabine Weygand quoted in "Brexit backstop: Can technology solve the Irish border problem?", Tom Edgington, *BBC News,* 1 February 2019

20 Rory Carroll & Lisa O'Carroll, "No-deal Brexit a political and economic threat, Ireland warns", *The Guardian*, 9 July 2019

21 Michael Cox, Michael Burleigh, Adrian Guelke and Paul Gillespie, "Ireland-UK Relations and Northern Ireland after Brexit" Second Edition, LSE IDEAS Strategic Update, May 2019

22 "Karen Bradley admits ignorance of Northern Ireland politics", Guardian, 7 September 2018

23 Seamus O'Reilly, Leo Varadkar looks like an adult because the UK is acting like a spoilt toddler", The Guardian, 31 July 2019

24 Pat Leahy, Irish Times poll: Northern Ireland voters do not want DUP-Tory Brexit, Irish Times, 7 March 2019

25 Karl McDonald, "Karen Bradley's apology isn't good enough. She has proven herself incompetent, and she must resign", I News, 7 March 2019

26 Central Bank of Ireland, first Quarterly Bulletin of 2019, 25 January 2019

27 Adele Bergin, Philip Economides, Abian Garcia-Rodriguez and Gavin Murphy, "Ireland and Brexit: Modelling the Impact of Deal and No-Deal Scenarios" Economic & Social Research Institute and Department of Finance, March 2019

28 David McWilliams "Punishing Ireland's economy will backfire on Brexiters", Financial Times, 19 August 2019

29 RTE News, "No "Backstop" is same as no deal for Ireland, Taoiseach tells Johnson", Dublin, 9 September 2019

30 David Smith, "Trump hails 'good man' Boris Johnson and says of UK: They like me over there", The Guardian, 23 July 2019

31 Rob Mudge, "Boris Johnson's clowning glory", Deutsche Welle, 23 July 2019

32 Tom Mctague, "Boris Johnson Meets His Destiny", The Atlantic, 22 July 2019

33 Jennifer Rankin and Rowena Mason, "Boris Johnson gets his deal and a slap on the back in Brussels", 17 October 2019

34 BBC News, "Brexit bill 'in limbo' as MPs reject timetable", 22 October 2019

35 Deutsche Welle, "Donald Tusk: EU agrees to delay Brexit until January 31", 28 October 2019

36 Edward Luce, "Dublin's Irish-American trump card", Financial Times, 15 March 2019

37 Michael Gove, "The Price of Peace - An analysis of British policy in Northern Ireland", Centre for Policy Studies, 2000

38 Tom Cotton, "Cotton, Colleagues Pen Letter Pledging to Back Britain After Brexit", Senator Tom Cotton Press Release, 3 August 2019

39 Conor Donnan, "Irish Phoenix? The unexpected Winner of Brexit", E-Notes, Foreign Policy Research Institute, 6 September 2019

40 Liam Kennedy, "How Brexit is leading a resurgent Irish American influence in US politics", The Conversation, 6 August 2019

41 Suzanne Lynch, "Hard border a roadblock to US-UK trade deal, Congressman says", *Irish Times,* 14 March 2019

42 "RTE News, "Pelosi warns UK over any weakening of Good Friday Agreement", 15 April 2019

THE ECONOMIC AND FISCAL CONSEQUENCES OF BREXIT

Gabriel Felbermayr, Clemens Fuest,
Jasmine Gröschl and Daniel Stöhlker

"Avoiding a failure of the negotiations and minimizing the costs of Brexit for all parties involved is a key responsibility of policymakers on both sides."

On 29 March 2017, the United Kingdom (UK) government notified its exit to the European Union (EU) in accordance with Article 50 of the EU Treaty. Brexit was therefore officially initiated. In April 2017, the European Council adopted the guidelines for negotiations between the EU and the UK in accordance with Article 50 TEU. Negotiations between the EU and the UK on the important issues of exit and on future political and economic relations began in July 2017 and have proven difficult since then. The EU has ruled out the possibility of the UK participating in the EU Single Market à la carte by selecting certain rights and obligations but opting out from others, such as the free mobility of labour. The UK government has made clear that it accepts this condition. Whether it aims at a "hard Brexit", an exit from the EU Single Market and Customs Union and a refusal of the European Court of Justice's authority, or some form of "soft Brexit" with some continued participation is still very much undecided.

In early 2019, after more than 18 months of intense negotiations, the EU and Prime Minister Theresa May agreed on a strategy to address the biggest issues that have so far prevented a Brexit deal. This included the border issue between Ireland and Northern Ireland, the remaining UK payments to the EU, and the future rights of EU citizens in the UK and vice versa. The Prime Minister's plan would keep customs and trade arrangements with the EU until at least the end of 2020, but ultimately envisions cutting most of these ties. The agreement did not detail what would replace them in Britain's future relationship with the EU. When the proposal was presented to Parliament in January 2019 for the first time, it was rejected by a historic margin of 230 votes. Later attempts in March 2019 were still soundly defeated.

One of the sticking points was the border issue between Northern Ireland, which remains part of the UK, and Ireland, another member state of the EU. Prime Minister May and her Irish counterpart, Leo Varadkar, want to avoid checkpoints being installed along the Northern-Irish border line as such barriers are generally considered incompatible with the Good Friday Agreement which brought respite in Northern Ireland from decades of violence. The 'backstop' solution, as the agreement has been dubbed, would leave the UK in a temporary trading relation with Europe until a final deal avoiding a hard border could be agreed on. There is some fear among the hard-line Brexiteers, however, that this would never happen. It would also mean that Northern Ireland is bound to even more European rules which comes to the dismay of those lawmakers who object to regulatory differences between Northern Ireland and the rest of the UK.

With Prime Minister May's grip on power weakened after several defeats and little hope left to strike a deal on her own, Parliament initiated a series of votes on its own over the prime minister's objections to try to agree on alternative approaches to Brexit. The efforts fizzled quickly and all eight options were rejected by lawmakers. Nevertheless, among the options that came closest to endorsing was some form of a soft Brexit approach in which the UK would remain in the EU's customs union. It lost, 272 to 264, but more than 100 lawmakers abstained, so it is anyone's guess how the vote would have gone if every lawmaker had taken part in the decision.

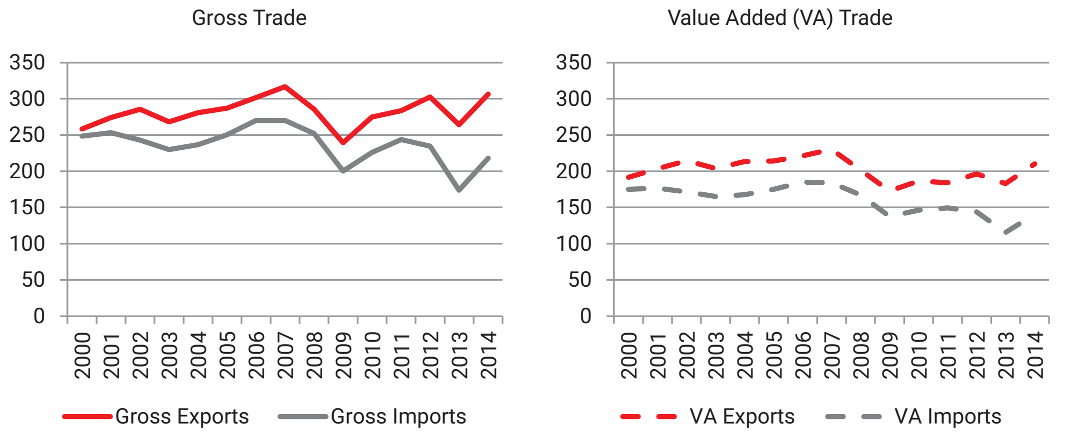
On this note, we wish to provide some empirical foundations for the political process of trade and budgetary (dis-)integration. First, we characterize value chains that tie the UK and the EU together. Second, we identify ex-post effects on goods and services sectors from the UK's membership in the EU Single Market and Customs Union. These benefits—on both the UK and the EU side—are now at risk due to Brexit. We draw conclusions on how Brexit would affect non-tariff barriers (NTBs) between the UK and the EU. Third, we simulate policy scenarios in an ex-ante analysis to quantify the consequences of various future arrangements between the EU and the UK. The scenarios reflect conceivable possibilities for a redesign of economic relations. Some of them have been voted down already but we still find them informative for reasons of comparability. Clearly, EU membership provides the deepest possible economic integration. The stronger the deviation from this standard, the higher are economic losses for all stakeholders. We use an extended Caliendo and Parro (2015) Ricardian model where trade is driven by productivity differences. Reallocation effects are not realized immediately and underestimate true effects. The modelling strategy is conservative and provides a lower bound of true effects in all scenarios. Finally, we present a discussion on budgetary issues between the EU and the UK and compare trade effects with those from cutting down fiscal transfers due to Brexit.

Trade Links between the UK and the EU

Trade statistics provide a general description of economic relations between the EU27 and the UK. EU27 countries differ with respect to their export shares of goods destined for the UK. These range between 0.6% in Greece and 18.6% in Ireland. On average, EU27 members have an export share with the UK of 3%, the import share totals 2.2%. The latter varies between 0.5% in Slovakia and 20.6% in Ireland. The picture looks different for services. EU27 services export shares with the UK range between 0.1% in Lithuania and 15% in Malta. The Irish services export share is the second strongest (2.9%). The EU27 average of services export (import) shares with the UK is 0.5% (0.6%). Spain shows the lowest services import share with the UK (0.2%); Luxembourg the largest (13.4%). Wholesale trade, automobiles and chemical products dominate trade between EU27 states and the UK.

Official trade data inform only on turnover but not on domestic or foreign value added (VA) incorporated in international transactions. Germany's export surplus with the UK measured in terms of sales is 25% higher than when measured in VA. The reason is that German exports include VA from abroad. In addition, intermediate product supply to Germany from abroad also contains VA from the UK and this may again contain German VA. We use a global input-output table to correctly allocate export activities to domestic VA, see Wang et al. (2013) and Aichele et al. (2014) for apropriate methods.

Figure 1. Gross and Value Added Trade between EU27 and UK, in bn Euro



Source: World Input Output Table (2017), Eurostat (2017), calculations of ifo institute.

Figure 1 on the left shows EU27 exports to the UK and EU27 imports from the UK in gross (transaction value) terms, the figure on the right depicts the same in VA terms. The trend follows well-known patterns: gross trade flows have not yet reached pre-crisis levels of the year 2007, as exports in 2014 only recovered from a slump in 2013 (-13%). Over the entire period, gross exports have risen by 19%. This slight downward trend in EU27 imports from the UK may also reflect the diminishing importance that UK exporters attach to continental EU markets. This argument has been part of the campaign for exiting the EU. Between 2000 and 2014, EU gross imports fell by 12% in real terms. At the same time, it is striking that exports measured in VA are growing by less (10%). The share of VA in exports thus dropped from 74% to 69%. Measured in VA, imports fell by 20%. As a result, the share of VA decreased from 70% to 65%. This illustrates the increasing content of foreign VA in UK exports.

Looking at net trade volumes, it becomes clear that EU27 countries accumulated a trade surplus against the UK between 2000 and 2014. In 2000, the German surplus made up the entire surplus of the EU27. Currently it has fallen to 41%. Hence, many other EU27 countries now have a positive trade balance with the UK. For the EU27, we see a decoupling of the balance of gross trade and the VA balance since 2012. Looking at absolute VA exports relative to the respective economic output, we see that the EU27 as a whole export 1% of economic output to the UK. This share dropped in the wake of the financial crisis but returned to pre-crisis levels in 2014. Vice versa, the UK exports relatively more to the EU27. VA exports for a long time ranged between 4% and 4.5% of UK economic output. The previously observed slump in VA exports in 2013 is also evident; a record low of 3.2% of GDP. In 2014, VA exports rose again to 3.5%.

Ex-Post Analysis: Gravity Model Results

In our quantitative analysis, we understand Brexit in two steps: First, Brexit implies the reverse processing of existing EU integration agreements; measurable tariffs and NTBs between the UK and remaining EU members are reintroduced. Second, negotiations may lead to a new bilateral treaty based on measurable trade-cost-reducing effects of existing EU trade agreements. In this case, barriers reintroduced by Brexit partially disappear again. A key element for the simulation scenarios is to distinguish the ex-post effects of integration steps and tariffs to estimate their impact on non-tariff trade costs and the elasticity of substitution. Based on the structural gravity model (Head and Mayer, 2014), we carry out an econometric analysis of EU integration steps for goods and services trade. We examine the effects of the European Union, the Eurozone, the Schengen Agreement and other free trade agreements (FTAs) on trade using a Poisson Pseudo Maximum Likelihood approach that takes zero trade into account (Santos Silva and Tenreyro, 2006).[1] The data used is described in Felbermayr et al. (2017c). Based on empirical estimates and trade elasticities, we calculate the extent to which Brexit creates new trade barriers. We obtain counterfactual ad valorem trade cost reductions and a set of plausible scenarios.

Table 1 shows the results on trade integration agreements applying the gravity model for goods and services trade based on yearly data. Coefficients show approximate percentage increases in bilateral trade due to the EU27 (excluding the UK), the EU membership of the UK (asymmetric), the Eurozone, the Schengen Agreement, the EU-Korea FTA from 2011 and other FTAs. We include bilateral fixed effects to implicitly control for constant determinants of trade between two countries, including existing FTAs and country pairs that have been part of the EU, the Eurozone or the Schengen Agreement before 2000. Coefficients on integration agreements are considered relative to a counterfactual situation in which counted borders are non-Schengen borders or in which states are not both members of the EU, the Eurozone or do not have a FTA.

We show that bilateral imports in goods (services) between EU27 states have increased by 62.4% (67.9%) between 2000 and 2014. The effect combines the impact of the EU27 Single Market and Customs Union. The EU membership effect for the UK is asymmetric. We find that EU27 imports from the UK increased by 64.7% for goods and 88.1% for services, while those of the UK from other EU27 states were pushed by 18.2% for goods but 59.7% for services. This illustrated that tariff eliminations and the harmonization of standards by the EU have a clear positive impact on bilateral imports, albeit asymmetric. Findings on the EU membership are comparable to results found in the literature (see, e.g., Dai et al., 2014 or Bergstrand et al., 2015). A common Eurozone membership leads to an increase in goods trade of 8.7% and 15.8% for services. The relevant literature shows varying effects (see, e.g., Micco et al., 2003; Baldwin and Taglioni, 2007; Berger and Nitsch, 2008; Bergin and Lin, 2012), mostly due to misspecified models (Baldwin et al., 2008). By use of state-of-the-art econometric modelling and considering other EU integration steps, estimates presented here range at the lower end of effects—comparable to those found in the more recent literature on the effects of the Euro.

Each Schengen-internal border pushes goods trade by 9.4% and services by 6.6% – comparable to estimates found in Felbermayr et al. (2017b), but lower than those presented in earlier studies. Most of which did either not account for other EU integration steps and/or did not account for the geographic component of Schengen. The most comprehensive and deep FTA between the EU and another country, for which data are already available, has been with Korea since 2011. We thus treat the EU-Korea agreement separately. Our estimates show that it has increased trade in goods (services) by 36.6% (41.5%). Few other FTAs have entered into force during the considered period. Those that have pushed goods trade by 11.7% and services by 1.1%. In our counterfactual exercises, we deploy the EU-Korea FTA effects as a proxy for a deep and comprehensive FTA between the EU and the UK.

Felbermayr et al. (2017a) extend the estimation to 50 different sectors. The results broadly confirm the previously described patterns. The following simulation exercise uses these more detailed estimates.

Table 1 European Integration and Imports (2000 - 2014)

Dep. Var.:	Bilateral Imports	
	Goods	Services
	(1)	(2)
Both EU27	0.485*** (0.07)	0.518*** (0.07)
EU – UK, asymmetric	0.500** (0.12)	0.632** (0.17)
UK – EU, asymmetric	0.167 (0.10)	0.468** (0.17)
Both Euro	0.083** (0.04)	0.147** (0.06)
Schengen	0.090*** (0.01)	0.064*** (0.02)
EU – KOR	0.312** (0.06)	0.347** (0.07)
Other FTA	0.111* (0.06)	0.011 (0.06)

Source: Felbermayr et al., 2017a. Notes: *** p<0.01, ** p<0.05, * p<0.1. All regressions estimated by Poisson-Pseudo-Maximum-Likelihood methods. Estimated standard errors are robust against heteroscedasticity. All regressions comprise time-varying importer and exporter, as well as bilateral fixed effects. Number of observations is 27,735.

Ex-ante Analysis: Scenario Evaluations using Computable General Equilibrium Modelling

The ifo trade model, described in detail in Felbermayr et al. (2018), is a static general equilibrium model of international trade in which 44 countries in 50 goods and services sectors can interact with one another and where trade flows are interrupted by tariffs and NTBs. It can be parametrized using relatively simple econometric equations resulting from equilibrium conditions. The structural gravity estimations provide us with two sets of sector specific parameters needed for simulation – the trade elasticity with respect to tariffs (ad-valorem trade costs) and estimates on trade integration agreements (cost equivalents of NTB reductions). We use them to inform policy variables in counterfactual scenarios. Trade-policy scenarios are based on the following thought experiment: If the UK, in the world we know today, would leave the EU, including the reintroduction of tariffs and the establishment of NTBs, how would trade flows, sectoral production structures and real income look like in this counterfactual world?

Our baseline year for the comparative static simulations is 2014, for which we have a complete dataset with the technological conditions for all countries and sectors. The calculated level effects on real income and trade flows are static. The model does not consider pro-competitive gains from trade (trade reduces a firm's monopoly power) or dynamic effects of trade (trade creates additional incentives, innovation, new technologies and accumulation of human capital). Even though these effects are empirically well proven, we need an undebated standard model for the simulation exercise. This implies that the model depicts lower limits for real long-term effects.[2]

Scenarios

Due to existing uncertainties regarding the potential design of Brexit, we examine several scenarios when quantifying effects of the UK leaving the EU. We approximate the economic cost of Brexit by applying scenarios that differ with respect to trade cost assumptions which allows us to capture the whole range of possible trade impacts. We use top-down scenarios where the experience with existing institutional arrangements provides the starting point for the expectations of a future regime between the EU and the UK.

WTO scenario ("Hard Brexit"): The UK is no longer part of the EU Single Market and Customs Union. No new FTA between the EU27 and the UK is concluded. Both parties apply most-favoured nation (MFN) tariffs as currently granted by the EU under WTO rules on imports from third countries. Asymmetric NTBs are reintroduced according to sectoral trade costs calculated from gravity estimations. Moreover, the UK loses all existing tariff and non-tariff preferences it currently enjoys with third countries with whom the EU has a FTA in force.

Global Britain scenario: We assume the same EU27-UK relationship regarding tariffs and NTBs as under the WTO scenario, but the UK now unilaterally eliminates tariffs and NTBs in new FTAs with the US, Canada and Japan. Tariffs are symmetrically phased out and set to zero between involved countries. NTBs are reduced as under the EU-Korea agreement of 2011, utilized as a proxy.

Deep and comprehensive trade agreement (DCFTA) scenario ("Soft Brexit"): The UK exits the EU Single Market and Customs Union but the EU27 and the UK negotiate a DCFTA. The agreement comprises tariffs but also low behind the border non-tariff trade impediments (such as NTBs on services or investments). The DCFTA replicates the achievements of the EU-Korea agreement. We utilize estimated trade cost reductions of the EU-Korea FTA from our gravity results as a proxy.

Trade Effects

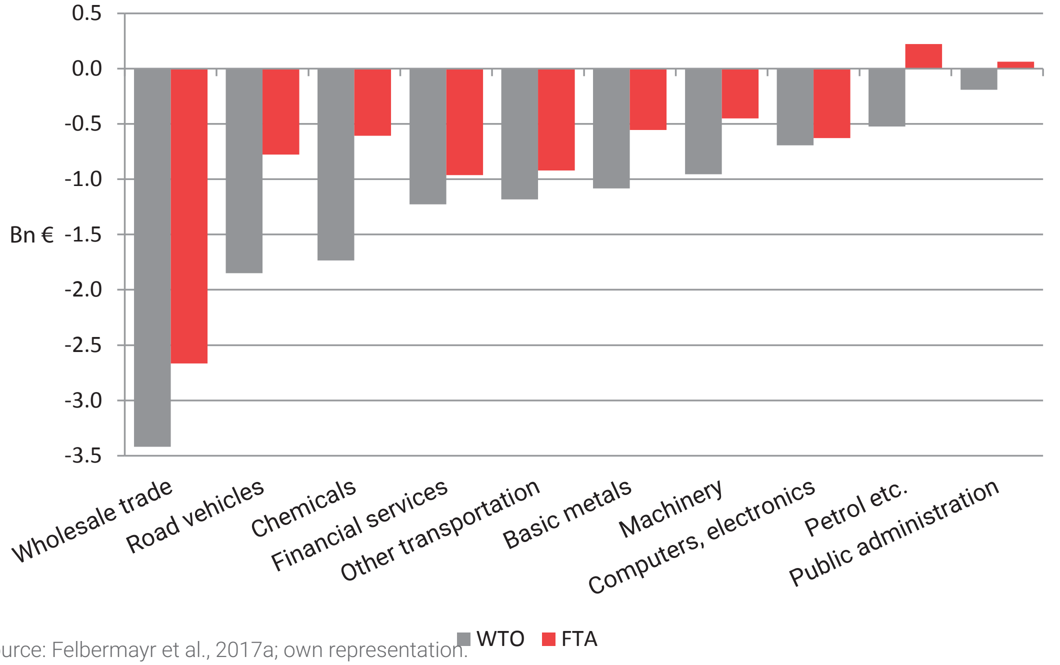
Higher trade costs increase the price of UK exports to EU27 states and vice versa. This may cause trade destruction both in consumer demand and in the sourcing decisions of firms. Trade diversion effects (to third countries) are likely to be small with Brexit due to the interconnectedness of VA chains.

Simulation results show that Brexit would in fact lead to a considerable decline in trade of goods and services between the UK and EU27 countries. Both price effects (through higher barriers to trade) and income effects (due to falling GDP) are important mechanisms. In the WTO scenario, UK exports to Germany fall by 50%; counterfactual exercises show a similar drop in exports in the Global Britain scenario. Even with a DCFTA between the UK and the EU27, UK exports to Germany fall by 24%. Services exports are the most pronounced and effects are comparable for other EU27 countries. Under WTO (DCFTA) rules, these range from -53% (-28%) for Lithuania and -22% (-6%) for Luxembourg (a clear outlier). German exports to the UK drop by 33% (9%) under a hard (soft) Brexit.

Figure 2 and Figure 3 show changes in sectoral trade effects between the UK and Germany for WTO and DCFTA scenarios.[3] Wholesale trade and road vehicles show the strongest drop in UK exports to Germany. Even with a DCFTA, UK exports to Germany in both sectors fall by -2.7bn Euro (-52%) and -0.8bn Euro (-25%), respectively. The financial services sector dominates in percentage terms. Its 2014 level of 1.7bn Euro would drop by -71% or -1.2bn Euro under WTO rules and exports more than halve under a DCFTA (-55%; -1.0bn Euro).

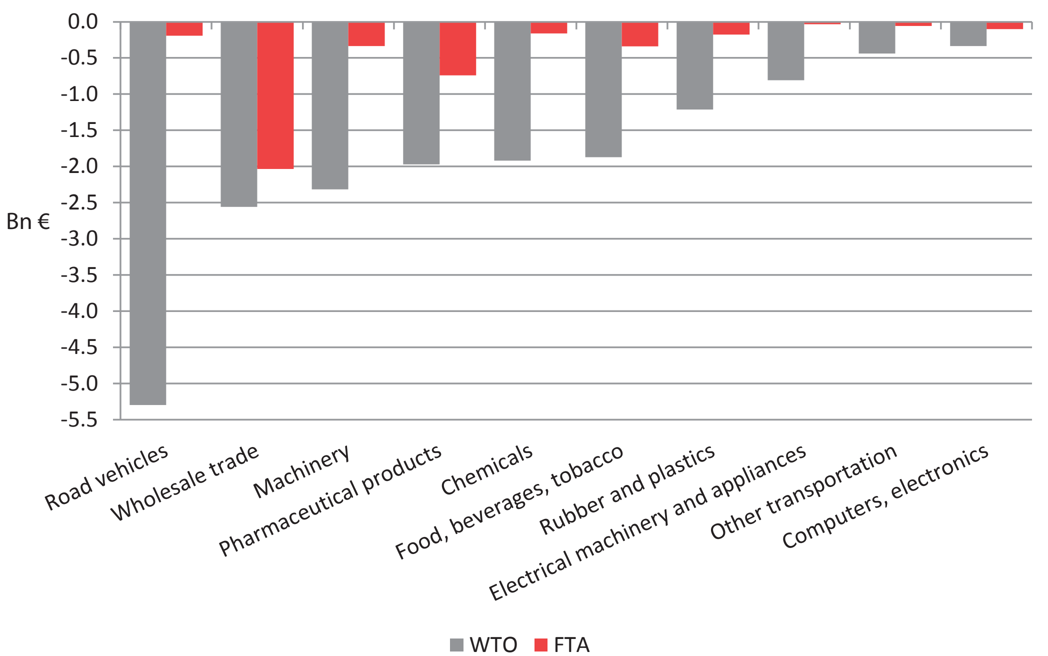
In Figure 3, German wholesale trade involves the largest trade effects in percentage terms with a drop of more than 50% (-2bn Euro) for German exports to the UK. Apart from that, pharmaceutical products are the worst hit with a drop of 17% (-0.7bn Euro) in the case of a DCFTA. Contrasting this, road vehicles show a very small effect of -1.0% or -0.2bn Euro. In case of a hard Brexit, road

Figure 2 Changes in Sectoral Trade Effects, UK Exports to Germany, Top 10 Sectors, in bn Euro



Source: Felbermayr et al., 2017a; own representation.

Figure 3 Changes in Sectoral Trade Effects, German Exports to UK, Top 10 Sectors, in bn Euro



Source: Felbermayr et al., 2017a; own representation.

vehicles exports lose the highest amounts (-5.3bn Euro) followed by wholesale trade (-2.6bn Euro) and machinery (-2.3bn Euro).

Sectoral Value Added Effects

Next, we examine VA effects for the most affected German industries in the WTO scenario. Simulated losses amount to 4.5bn Euro for goods sectors; services sectors add another 1.6bn Euro. Hence, three-quarters of German economic losses stem from manufacturing industries. Overall, goods sectors lose VA, except for mining and quarrying and other transport equipment (shipbuilding, aircraft construction or railway) which gain marginally. Services provide mixed results. Applying WTO rules, VA effects show that German road vehicles record the largest losses (-1.1bn Euro), which account for one sixth of the overall economic Brexit costs. Pharmaceutical products lose 600 million Euro and machinery drops by 560 million Euro. VA effects in subsequent sectors fall rapidly. These include processed metals, food, beverages and tobacco, rubber and plastics, chemicals, electrical machinery, basic metals, textiles and leather.

But Brexit also creates opportunities. Looking at German services sectors under WTO rules, simulations predict that the German financial sector grows by almost 300 million Euro and wholesale services increase by more than 240 million Euro. Consulting industries also benefit; these include IT and programming (340 million Euro), legal advisory and accounting (160 million Euro), architecture and engineering (130 million Euro). NTBs offset expected additional costs in all aforementioned sectors. However, German firms could lose up to 890 million Euro in real estate. Health and social services, construction and public administration could also drop by about 400 million Euro each. The latter is not directly affected by new trade barriers, but indirectly through a decline in German economic output.

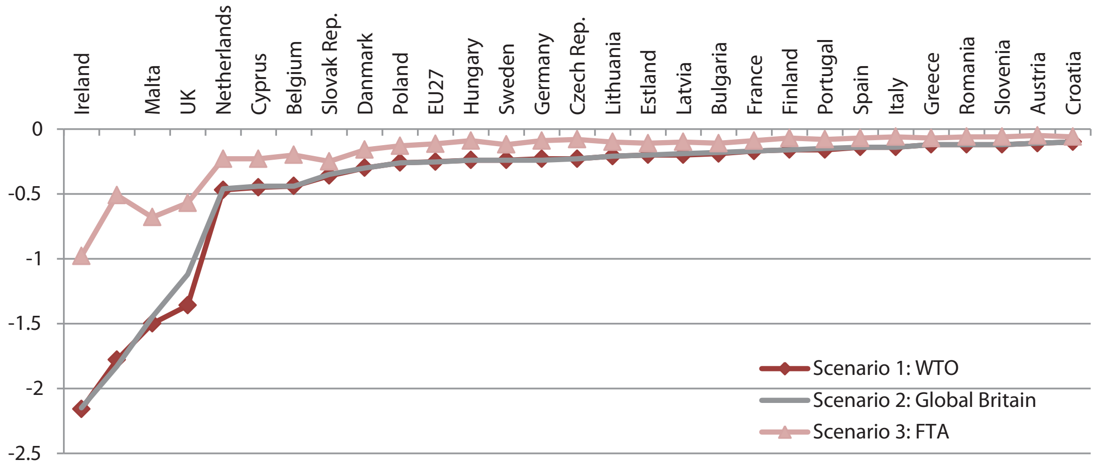
Sectoral VA changes in the UK turn out to be quite different from those in Germany under WTO rules. Most importantly, simulated losses in UK services sectors amount to 22bn Euro, while UK goods sectors bear a loss of 6.3bn Euro. Hence, services are at least three times more important for the Brexit costs of the UK than goods sectors. The often-discussed financial services sector holds VA losses of 850 million Euro. Yet, these do not dominate economic costs as NTB reductions in financial services are not estimated to be particularly large. This is aggravated by the fact that the UK has a very strong comparative advantage in the finance sector. The considerably smaller insurance industry could face VA losses of 660 million Euro. Other services sectors add significantly to overall costs, such as wholesale (-4.4bn Euro), architecture and engineering (-2.7bn Euro), or legal advisory and accounting (-1.2bn Euro). Our simulation exercises suggest that specific transport sectors could benefit from Brexit, but gains are rather small. The most negatively affected goods sectors are electronic equipment (-1.6bn Euro), chemicals (-1.4bn Euro), other transportation (-1.2bn Euro), basic metals and machinery (-1bn Euro each), and road vehicles (-850 million Euro). Winners include food, beverages and tobacco with gains of 1.4bn Euro, mining and quarrying with 950 million Euro, agriculture and forestry.

Effects on Real GDP per Capita

The simulation exercises calculate long-run effects and can be interpreted as a deviation of the growth path of GDP without Brexit relative to the growth path of GDP with Brexit. Figure 4 shows the effects of different Brexit scenarios on real GDP per capita in EU countries (and an EU27 aggregate) in percent relative to the status quo in 2014. Brexit is more expensive for the UK than for the average EU27 country. Under WTO rules, the UK would lose 1.4% of GDP per capita, the EU27 average 0.25%. The Netherlands is the country with the fifth largest loss, which amounts to about a third of that of the UK. Germany loses 0.23%, France 0.17% and Spain 0.14%. Benelux, Scandinavia, Poland and Hungary are more negatively affected.

The Global Britain scenario leads to slightly smaller losses for the UK of 1.1% relative to the

Figure 4 Effects on Real GDP per Capita, in %



Source: Felbermayr et al., 2017a; own representation. Relative to the status quo in 2014. Effects do not include net transfers to the EU.

status quo. But, the idea that a few new FTAs could compensate losses from an EU withdrawal seems to be a blind alley. The reason is that trade with geographically and culturally distant countries involves significantly higher trade costs than with nearby European partners. Only Ireland, Luxembourg and Malta are more strongly affected than the UK itself due to the importance of the UK as a sales or sourcing market in sectors with high VA and strong Brexit effects. This concerns agri-food but also finance or water transport.

A DCFTA would help to reduce losses from Brexit dramatically for all European parties involved. Real per capita GDP in the UK would decrease by 0.6% and 0.1% for the EU27 average. Particularly Luxembourg would significantly reduce its losses due to smaller frictions in relevant service sectors. Ireland would still lose more than the UK but far less than under WTO or Global Britain scenarios.

As the EU is by far the most important trade partner for the UK, even a partial isolation of the economy will have negative effects. Conversely, details on the design of future trade relations will have a major impact on the UK economy. For all other EU27 members, a DCFTA has only minor impacts. But, none of the involved EU states can benefit from Brexit—neither hard nor soft.

Fiscal Effects: Divorce Bill and EU Budget after Brexit

Next, we focus on budgetary aspects of Brexit; that is the issue of disentangling the UK financially from the EU and the question of how the EU budget will adjust after the UK's exit. EU-UK negotiations on the EU budget involve two different but interrelated deals: (i) a one-time divorce bill or a Brexit bill settlement; (ii) possible future contributions and EU expenditures in the UK after Brexit.[4]

The divorce bill has turned out to be one of the first sticking points in Brexit negotiations. EU and member state officials have repeatedly suggested that outstanding liabilities could be as high as 60bn Euro for the UK. This has awakened fierce opposition among British negotiation leaders who have claimed that the EU cash call is unfair and not legally well grounded.

To determine the size of a fair Brexit bill, Darvas et al. (2017) distinguish between the divorce and the club membership approach. The divorce approach—preferred by the European Commission—would mean to establish the EU's assets and liabilities and let the UK receive or pay its share. The club membership approach would imply that members who leave would just stop paying membership fees and no attempt is made to determine assets or liabilities of the club. As recently pointed out by Barker (2017), the following types of liabilities can be lined up for the Brexit bill:

1. Reste a liquider (RAL): The sum of outstanding commitments for EU spending agreed to but that have not yet translated into payments; amounts to 241bn Euro by the end of 2018.

2. Promises made jointly by member states to fund EU spending of 143bn Euro in 2019 and 2020, mostly on structural and regional policies; part of the EU budget but covered by a special regulation (Regulation No 1303/2013).

3. Additional EU spending agreed upon as part of the multiannual financial framework 2014-2020; one could argue that the UK has made a not legally but politically binding commitment.

4. Pensions of EU employees: EU employees' pensions are unfunded; pension liabilities in 2017 amount to 63.8bn Euro.

5. Additional obligations: Contingent liabilities of the EU during the UK's membership; 23.1bn Euro in guarantees and provisions (granted by the European Investment Bank (EIB) or under the Horizon 2020) and loans to various countries including Ireland, Portugal and the Ukraine worth 56bn Euro.

6. EU assets including property, financial assets and loans mentioned above. The Brexit bill could be reduced by the UK's share in these assets. In addition, the UK share of spending implied by the RAL (1.) and other spending commitments (2. and 3.) could be knocked off the Brexit bill.

Table 2 summarizes estimates of assets and liabilities from Barker (2017) and Darvas et al. (2017). It shows that the divorce approach, despite its systematic approach based on the division of assets and liabilities, leads to a wide range of possible results. First, some of the largest items in these calculations are controversial. In particular, net contributors including the Netherlands, Germany and Sweden have repeatedly rejected the view that the RAL is a liability of member states. Moreover, requiring the UK to contribute to the EU budget as if it continued to be a member until 2020 is problematic because these contributions have to be seen in the context of the rights of member states to have access to benefits, including access to the EU's internal market. These rights can be interpreted as assets departing members give up. If the UK loses this access, it is difficult to justify continued contributions.

Moreover, the approach as such can be questioned. Countries joining the EU do not pay for EU assets nor do they get reimbursed for EU liabilities. Joining the EU very much follows the club membership logic, not the divorce (or marriage) logic. A Brexit bill on the basis of the club membership approach would boil down to determining what belongs to club membership (e.g., EIB may be a separate club) and for how long membership fees are due. This shows that the Brexit bill is ultimately a matter of political negotiations, not just an accounting exercise.

In November 2018 the European Commission and the EU reached an agreement on how to settle their financial commitments to each other after Brexit. Specifically, it sets out the financial commitments that need to be covered, the methodology for calculating the UK's share and details of the timing of the payment schedule. It does not mention the exact numbers, though.

As already mentioned before, the proposal was defeated in Parliament in early 2019 (being one part of the whole package) but it might still give us an idea of how a compromise could look like in the future. The agreement states that the UK will further participate in the annual budget of the EU until the end of the current multiannual framework, i.e. until the end of 2020. It will contribute to and benefit from the various EU programmes that are funded under the current framework until they close. Gross contributions of the UK to the EU budget are projected to be around 18bn Euro in 2019 and 2020, respectively.

Table 2 Possible liabilities, commitments and offsetting assets by end-2018, in bn Euro

	Barker (2017)	Darvas et al. (2017)
Reste à liquider (RAL)	241	248.8
Significant legal commitments (SLC)	143.4	148.7
Other planned commitments (OPC)	29 (Incl. Connecting Europe Facility: 10.1, Copernicus: 2.9 and EU Fund for Strategic Inv.: 16)	182.5 (E.g. Common Agricultural Policy (CAP) payments and administrative expenditure)
Pensions	63.8	63.8
Contingent liabilities	Guarantees: 23.1 EU loans: 56.1	Guarantees: 27.6 EU loans: 52.7
EU Assets	Properties: 8.6 Assets available for sale: 13.9	Cash: 21.7 Properties: 8.7 Fin. assets av. for sale: 9.6 Other assets: 1.0
Possible range for UK liabilities (excluding upfront payments for guarantees and loans)	24.5-60.9	25.4-65.8

It was also agreed that the UK will contribute to the financing of the RAL that are outstanding at 31 December 2020. The OBR estimates that the UK's net RAL payment—the difference between the UK's gross RAL share and RAL receipts— amounts to 21bn Euro in total. Moreover, the UK will contribute to the financing of the EU's liabilities that are incurred before 31 December 2020. Liabilities with corresponding assets can be excluded, as will assets and liabilities related to the spending and financing of the EU budget (Keep, 2018). Pensions and other benefits of EU employees are the largest amount of liabilities amounting to €73bn at the end of 2017. The EU's pension scheme is unfunded and works on a pay-as-you-go-basis meaning that costs need to be covered once they arise. It is therefore likely that the UK will contribute to pension payments over many years, possibly decades. The OBR expects the UK share of pension liabilities to be in the range of 9bn to 10bn Euro in present value terms. With respect to contingent liabilities, the UK has agreed to remain liable for its share at the date of withdrawal. For the case of contingent liabilities that relate to legal cases, the cut-off date is extended to 31 December 2020. With respect to areas outside the EU budget, the UK will receive back its share it has paid as capital into the European Investment Bank, which amounts to around 3.5bn Euro and a relatively small amount of capital paid into the European Central Bank.

Summing up all terms, the OBR estimates—like those of the HM Treasury—project total settlement costs to be between 40bn and 45bn Euro between 2019 and 2064 for the UK, including its contribution to the annual budget in 2019 and 2020. The major part of the payments will be made by 2022 with substantially smaller tranches afterwards, mostly for pensions as they accrue. There is considerable uncertainty attached to the projections, however.

Actual payments depend, among other things, on the relative performance of the UK's economy as compared to other member states which determine its contribution to the annual budget in 2019 and 2020. Moreover, as payments are to be made in Euros, actual pound values are subject to future exchange rate movements as well.

The Impact of Brexit on the Budget of the EU27

The EU27 will need to decide how to adjust the EU budget after Brexit – particularly so with the beginning of the new multiannual financial framework in 2021. Since the UK is a significant net contributor, EU27 states either need to cut spending, increase contributions or a combination of both. According to estimates of the Office for Budgetary Responsibility, the British net contribution is projected to be between 8.5bn Pound and 9.5bn Pound until 2019, already taking into account the UK rebate. The British rebate has undergone several modifications during the last three decades but still allows the UK to keep two thirds of its annual net contribution. It is financed by the other 27 members, but Austria, Germany, the Netherlands and Sweden pay only a quarter of their regular share.[5]

The long-term Brexit-Gap would be smaller if the UK continued to make significant contributions after leaving the EU. This could happen if it retained its membership in the EU Single Market and Customs Union, along the lines of the Norway model. Currently, such a scenario seems unlikely as the UK government has ruled out both making large contributions to the EU budget after Brexit and the jurisdiction of the European Court of Justice in the UK. Future relations could resemble the relationship between Switzerland and the EU with its roughly 120 sectoral-differentiated bilateral trade agreements.[6] Of course, the freedom for the movement of people would be a critical issue, as it is for Switzerland. The 12-point plan of the UK Ministry that governs Brexit negotiations is not specific about the UK's participation in future EU programs. It mentions, however, that "there may be European programs in which we [the UK] might want to participate. If so it is reasonable that we should make an appropriate contribution." Estimates of the Centre for European Reform suggest that if the UK were successful in negotiating an agreement like Switzerland, its net contribution would fall by 55%. Looser arrangements such as those with Canada or Turkey would allow the UK to avoid paying into the EU budget at all but would entail more limited access to the EU's markets.

In the following, we assess the impact of the Brexit-Gap on the size and composition of contributions from other EU members on the basis of the EU budget in 2015. EU revenues, amounting to 146bn Euro in 2015, were composed of 21bn Euro from the UK in the form of gross payments (already taking into account the UK rebate of 6bn Euro), 116bn Euro from other members (incl. the contributions to finance the UK rebate) and around 9bn Euro from surpluses from previous years as well as other smaller financing sources. Depending on the assumptions made about how to deal with the EU expenses previously assigned to the UK (around 7bn Euro in 2015) and the amount of future net contributions of the UK to the EU budget—through participation in certain EU programs or via tariff payments—it is a relatively straightforward mechanical exercise to determine the extra burden for the other EU members. We take the size of the EU budget, VAT and GNI contributions as well as traditional own resources for each country as given and redistribute the Brexit-Gap and the sum of previous contributions for the funding of the UK rebate according to the GNI of the EU27. Existing rebates, specifically the reduced VAT contributions for some countries, are kept to allow for comparability with the status quo. We focus on the changes in gross and net contributions of individual member states.[7]

In Table 3, we describe two key scenarios together with the corresponding change in the financial burden for each country. Exchange rate movements or inflation rate dynamics are not considered. EU budget figures of 2015 are the most recent data

Table 3 Change in contributions with and without expenditure cuts, in million Euros

	Brexit Gap: 14bn, No expenditure cuts			Brexit Gap: 14bn, Expenditure cuts: 14bn			
	Change in gross/ net contr.	% change in gross contr.	New net contr.	Change in gross contr.	% change in gross contr.	Change in net contr.	New net contr.
Belgium	+ 391	+ 7.1%	- 1 090	- 89	- 1.6%	+ 202	- 1 280
Bulgaria	+ 39	+ 8.1%	- 2 206	- 10	- 2.1%	+ 152	- 2 093
Czech Republic	+ 143	+ 9.2%	- 5 390	- 32	- 2.1%	+ 419	- 5 113
Denmark	+ 265	+ 10.5%	1 257	- 50	- 2.0%	+ 144	1 137
Germany	+ 4 634	+ 16.5%	21 746	+ 1 069	+ 3.8%	+ 2 715	19 827
Estonia	+ 18	+ 8.7%	- 214	- 5	- 2.3%	+ 87	- 146
Ireland	+ 178	+ 9.7%	9	- 32	- 1.7%	+ 222	53
Greece	+ 167	+ 12.5%	- 4 699	- 36	- 2.7%	+ 911	- 3 956
Spain	+ 996	+ 9.9%	- 2 610	- 250	- 2.5%	+ 1 541	- 2 065
France	+ 2 102	+ 10.2%	8 240	- 465	- 2.3%	+ 1 358	7 496
Croatia	+ 44	+ 11.2%	- 163	- 6	- 1.5%	+ 10	- 197
Italy	+ 1 515	+ 9.5%	5 097	- 369	- 2.3%	+ 1 048	4 630
Cyprus	+ 14	+ 6.3%	41	- 6	- 2.5%	+ 16	43
Latvia	+ 23	+ 10.0%	- 723	- 5	- 1.9%	+ 113	- 633
Lithuania	+ 32	+ 8.2%	- 455	- 9	- 2.3%	+ 205	- 282
Luxemburg	+ 40	+ 10.8%	- 1 243	0	0.0%	+ 29	- 1 254
Hungary	+ 97	+ 9.1%	- 4 458	- 25	- 2.3%	+ 507	- 4 049
Malta	+ 7	+ 7.2%	- 23	- 2	- 2.3%	+ 12	- 18
Netherlands	+ 1 009	+ 12.7%	6 597	+ 227	+ 2.9%	+ 504	6 092
Austria	+ 505	+ 18.5%	1 444	+ 119	+ 4.4%	+ 364	1 303
Poland	+ 388	+ 9.2%	- 8 734	- 87	- 2.0%	+ 1 545	- 7 577
Portugal	+ 162	+ 9.9%	- 787	- 40	- 2.4%	+ 623	- 326
Romania	+ 146	+ 10.1%	- 4 945	- 35	- 2.4%	+ 369	- 4 723
Slovenia	+ 36	+ 8.9%	- 501	- 8	- 2.1%	+ 85	- 451
Slovakia	+ 73	+ 10.5%	- 2 965	- 14	- 2.1%	+ 212	- 2 826
Finland	+ 204	+ 11.0%	728	- 38	- 2.0%	+ 144	668
Sweden	+ 685	+ 17.0%	3 236	+ 160	+ 4.0%	+ 378	2 929
Budget (% GNI)	1.15%			1.03%			

available. We take into account that the total net contribution of the UK is slightly above average compared to the previous years (14bn Euro in 2015 vs. 8.5bn Euro on average over the period from 2010 to 2014). Note that we define the Brexit-Gap as the difference between UKs' total contributions and receipts for a complete picture of UK net payments to the EU.

First, we take contributions and receipts of the UK out of the 2015 budget and fill the resulting gap via higher GNI contributions from remaining EU27 members. All countries face an increase in contributions between 8% and 10% relative to their previous gross contributions in 2015. Germany, the Netherlands, Austria and Sweden face larger increases of up to 18%, which reflect previous rebates on their respective UK rebate contributions that we expect to expire after Brexit. The relative increase in gross payments to the EU budget is comparably moderate in relative and absolute terms for most countries. Germany would face the highest increase with more than 4bn Euro in terms of extra gross payments. Leaving expenditures untapped, the EU budget's total size would rise substantially from less than 1% without Brexit in 2015 to 1.15% given that the second-largest economy in terms of GNI is leaving the EU.

The right-hand side of Table 3 illustrates an alternative scenario in which EU spending would be reduced by the same amount as the net contributions of the UK. Changes in gross payments reflect differences in previous contributions to the funding of the UK rebate. With respect to net contributions, budget cuts will make net recipients of EU funds worse off while net contributors would improve their net payment balance. For example, Germany pays 26 cents of every marginal Euro spent by the EU, according to its GNI-share among the remaining EU27, but receives only 12 cents in return, averaging over all payments from EU funds between 2007 and 2013. Cutting EU expenses and revenues by one Euro would therefore reduce Germany's net contribution by 14 cents; cutting annual expenses by 14bn Euro—possibly the most natural response to a structural Brexit-Gap—would reduce the extra burden from Brexit by almost 2bn Euro with a new annual net contribution of around 19.8bn Euro. Other countries, especially Poland, Portugal and Greece, would see their net payment balance worsen substantially as they benefit most from EU funds under the current system. Gross contributions of Poland would be reduced by 87 million Euros, but together with cuts in receipts from EU programs the overall net contribution would rise by 1.5bn Euro. Despite some substantial worsening of its net payment balance, it would still be the greatest beneficiary of the EU, followed by the Czech Republic (5.1bn Euro) and Romania (4.7bn Euro).

The results illustrate that the distribution of gains and losses in terms of net contributions is highly sensitive to the way in which the EU budget will be adjusted in response to Brexit. While the magnitude of the financial burden that needs to be absorbed seems manageable relative to the size of the public sector in the EU, it is significant as a share of the EU budget and the absolute change in net contributions can be considerable for some countries. It is therefore likely that new systems of rebates will need to be introduced to achieve consensus about the burden distribution.

Given that Brexit will lead to significant financial pressure on the EU budget, this may be the right moment to think about a more extensive reform of the EU's finances in order to improve its effectiveness on the expenditure side as well as transparency and perceived fairness on the revenue side. The current system, as is often claimed, has created a vicious circle where beneficiaries and contributors are often pitched against each other in a perceived zero-sum game that leaves member states neglectful about the true value of being part of the EU. If citizens were able to see the link between the resources made available to the EU and its progress on the most challenging issues in the EU, it is hoped, it would reinforce the legitimacy of and political support for the EU budgetary spending.[8]

Adding up Income Effects and Fiscal Redistribution

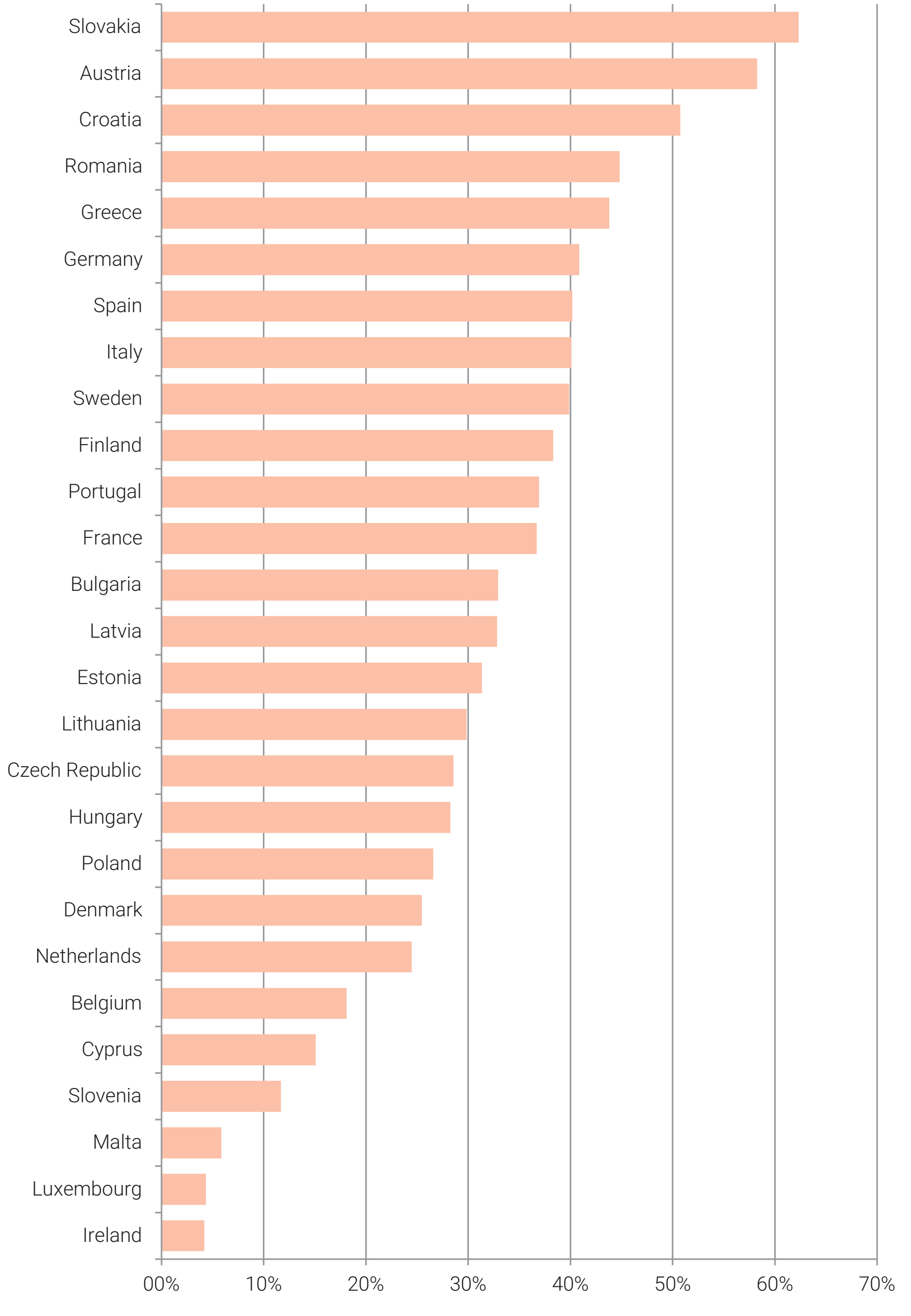
Next, we bring income and financial redistribution effects together.

Table 4 Effects on Gross Real Income and Maximum Fiscal Costs, in bn Euros

	Real Gross Incomes			
	1: WTO	**2: Global Britain**	**3: FTA**	**Maximum Fiscal Costs**
Austria	0.36	0.36	0.16	0.51
Belgium	1.77	1.77	0.80	0.39
Bulgaria	0.08	0.08	0.05	0.04
Croatia	0.04	0.04	0.03	0.04
Cyprus	0.08	0.08	0.04	0.01
Czech Republic	0.36	0.36	0.12	0.14
Denmark	0.77	0.77	0.41	0.26
Estonia	0.04	0.04	0.02	0.02
EU27	**29.56**	**29.76**	**13.49**	**14.00**
Finland	0.33	0.33	0.14	0.20
France	3.63	3.63	1.92	2.10
Germany	**6.71**	**7.00**	**2.62**	**4.63**
Greece	0.21	0.21	0.13	0.17
Hungary	0.25	0.25	0.09	0.10
Ireland	4.08	4.06	1.85	0.18
Italy	2.26	2.26	0.97	1.52
Latvia	0.05	0.05	0.02	0.02
Lithuania	0.08	0.08	0.04	0.03
Luxembourg	0.87	0.90	0.25	0.04
Malta	0.12	0.12	0.05	0.01
Netherlands	3.12	3.05	1.52	1.01
Poland	1.07	1.07	0.54	0.39
Portugal	0.28	0.26	0.14	0.16
Romania	0.18	0.18	0.09	0.15
Slovakia	0.04	0.04	0.02	0.07
Slovenia	0.27	0.26	0.19	0.04
Spain	1.48	1.48	0.74	1.00
Sweden	1.03	1.03	0.52	0.68
United Kingdom	**30.21**	**24.88**	**12.66**	**-14.00**

Source: Income effects from Felbermayr et al., 2017a.
Notes: Maximum fiscal costs according to Table 3, first column.

Figure 5 Share of Fiscal Effects in Total Net Income Effects of Brexit, WTO Scenario and Maximum Fiscal Costs, in %



Source: Felbermayr et al., 2017a and Table 3, first column; own calculations. Notes: Share of maximum fiscal costs in maximum total losses (VA effects in the WTO scenario plus maximum fiscal costs) in percent.

Table 4 provides Brexit effects on real GDP in billion Euros and adds maximum fiscal costs, as outlined in Table 3, first column. Under WTO rules, the EU27 losses amount to 29.6bn Euro in real GDP per year. The costs for the UK total 30.2bn Euro per year. In absolute terms, the UK loses slightly more than the EU27 altogether. Fiscal costs are at present difficult to quantify as they are subject to ongoing negotiations and future budget adjustments. Even if the UK reduces fiscal costs completely, Brexit would not turn out to be a positive case, not even under an ambitious FTA with the EU. On the contrary, precisely with a FTA the UK would have to expect further transfers to Brussels. Fiscal costs for EU27 countries would increase with Brexit. Assuming no adjustment in the EU's expenditure structure and that the fiscal gap in the EU budget is filled proportional to GNI, Germany would have to contribute an additional 4.6bn Euro and France an additional 2.1bn Euro. Net recipients would receive lower transfers. In Poland this would be 0.1% of GDP. The consideration of fiscal costs leaves the UK slightly better but the EU27 worse off. In the unlikely event of no more UK net payments to the EU budget, the EU as a whole reports a net loss of 43.5bn Euro in the WTO scenario, 11.3bn Euro of which are allotted to Germany alone.

The maximum fiscal costs of Brexit for the EU amount to 32% of maximum total effects. However, a high degree of heterogeneity among EU members exists. Figure 5 illustrates that the fiscal costs for Slovakia account for 62.3% of simulated total Brexit costs. Austria, Croatia and Romania show a share of more than 45% in total net income effects. Ireland, Luxembourg and Malta exhibit the lowest shares with less than 6%. This demonstrates that EU members have quite diverging incentives to focus either on a rapid conclusion of a comprehensive FTA or on continuing high fiscal transfers of the UK to the EU budget in Brexit negotiations.

Conclusions

The decision of the UK to leave the EU has been a watershed moment for the European integration project. We provide some empirical foundations for the political process by quantifying potential economic consequences of Brexit in various counterfactual scenarios.

The ex-post analysis of trade integration shows that the EU membership effect for the UK is asymmetric. Hence, reductions in tariffs and the harmonization of standards by the EU have had a clear positive impact on trade relations. These benefits from European integration—on both sides—are now at risk. The ex-ante analysis of various future arrangements between the EU and the UK finds that Brexit would in fact lead to a considerable decline of goods and services trade between the UK and the EU27 countries. The effects on real GDP per capita show that Brexit is more expensive for the UK than for the average EU27 country. We clearly visualize that the idea that a few new FTAs could compensate the losses from leaving the EU is far-fetched, while an ambitious FTA between the UK and the EU would help to reduce the losses from Brexit dramatically for all countries involved.

The analysis of the one-off divorce bill and of the impact of Brexit on the future EU27 budget indicates that the outcome will essentially be a result of political negotiations, which reflect not just budgetary issues but wider aspects of Brexit, including future trade relations. The EU's response to spending cuts caused by Brexit as opposed to higher contributions from remaining members is a political question to be solved. It would be a good opportunity to achieve a reform of EU spending towards a greater weight on policies where EU involvement generates added value.

The consideration of fiscal costs compared to income losses from Brexit leaves the UK slightly better off and EU27 members worse off. Even if the UK were able to reduce its net contribution to the EU budget to zero, which is unlikely given that the UK will want to participate in future EU policy initiatives, Brexit would still give rise to high economic costs for the UK. For the EU27, we find a high degree of heterogeneity when combining income and fiscal costs. This is important for Brexit negotiations, as EU members have diverging incentives to focus negotiations either on a rapid FTA conclusion with the UK or on continuing high fiscal transfers of the UK to the EU27 budget—particularly under a comprehensive FTA.

The final outcome of the Brexit negotiations will shape the relationship between the EU and the UK for many years to come. Even though the UK will likely leave the EU, there still exists great potential for future cooperation, not only in trade but also in areas like science, education, culture, foreign policy, and security. Avoiding a failure of the negotiations and minimizing the costs of Brexit for all parties involved is a key responsibility of policymakers on both sides. ■

References

Aichele, R., Felbermayr, G. and I. Heiland, 2014. Going Deep: The Trade and Wefare Effects of TTIP. CESifo Working Paper 5150.

Baldwin, R., DiNino, V., Fontagné, L., De Santis, R. and D. Taglioni, 2008. Study on the Impact of the Euro on Trade and Foreign Direct Investment. Tech. rep., Directorate General Economic and Financial Affairs (DG ECFIN), European Commission.

Baldwin, R. and D. Taglioni, 2007. Trade Effects of the Euro: A Comparison of Estimators. Journal of Economic Integration 22 (4), 780–818.

Barker, A., 2017. The €60 billion Brexit bill: How to Disentangle Britain from the EU Budget. Centre for European Reform.

Berger, H. and V. Nitsch , 2008. Zooming Out: The Trade Effect of the Euro in Historical Perspective. Journal of International Money and Finance 27 (8), 1244–1260.

Bergin, P. and C. Lin, 2012. The Dynamic Effects of a Currency Union on Trade. Journal of International Economics 87 (2), 191–204.

Bergstrand, J., Larch, M. and Y. Yotov, 2015. Economic Integration Agreements, Border Effects, and Distance Elasticities in the Gravity Equation. European Economic Review 78, 307-327.

Büttner, T., Broer, M. and C. Fuest, 2017. The future of EU finances: New Way of Financing and Distribution? ifo Schnelldienst 70 (06).

Caliendo, L. and F. Parro, 2015. Estimates of the Trade and Welfare Effects of NAFTA. Review of Economic Studies 82 (1), 1-44.

Cameron, D., 2017. Theresa May Clarifies what Brexit Means – Free Trade Agreement and a Hard Exit (accessed March, 2017, via the link: http://europeanstudies.macmillan.yale.edu/news/commentary-theresa-may-clarifies-what-brexit-means-free-trade-agreement-and-hard-exit).

Dai, M., Yoto, Y. and T. Zylkin, 2014. On the Trade-Diversion Effects of Free Trade Agreements. Economics Letters 122, 321-325.

Darvas, Z., Efstathiou, K. and I. Gonzalves Raposo, 2017. Divorce Settlement or Leaving the Club? A Breakdown of the Brexit Bill. Bruegel Working Paper.

Felbermayr, G., Gröschl, J. and I. Heiland, 2018. Undoing Europe in a New Quantitative Trade Theory Model. ifo Working Paper 250.

Felbermayr, G., Gröschl, J., Heiland, I., Braml, M. and M. Steininger, 2017a. Ökonomische Effekte eines Brexit auf die Deutsche und Europäische Wirtschaft. ifo Forschungsberichte 72, ifo Institute.

Felbermayr, G., Gröschl, J. and T. Steinwachs, 2017b. The Trade Effects of Border Controls: Evidence from the European Schengen Agreement. Journal of Common Market Studies, forthcoming.

Felbermayr, G., Fuest, C., Gröschl, J. and D. Stöhlker, 2017c. Economic Effects of Brexit on the European Economy. EconPol Policy Study 4, ifo Institute.

Head, K. and T. Mayer, 2014. Gravity Equations: Workhorse, Toolkit, and Cookbook. in G. Gopinath, E. Helpman and K. Rogoff (eds.), Handbook of International Economics Vol. 4, 131–195.

High Level Group on Own Resources, 2016. Future Financing of the EU.

Keep, M., 2018. Brexit: The Exit Bill. House of Commons Library Briefing Paper Nr. 8039.

Micco, A., Stein, E. and G. Ordoñez, 2003. The Currency Union Effect on Trade: Early Evidence from EMU. Economic Policy 18 (37), 315–356.

Sampson, T., 2016. Dynamic Selection: An Idea Flows Theory of Entry, Trade and Growth. Quarterly Journal of Economics, 2016, 131 (1): 315-380.

Santos Silva, J. and S. Tenreyro, 2006. The Log of Gravity. Review of Economics and Statistics 88(4), 641–658.

Wang, Z., S.-J. Wei and K. Zhu (2013). Quantifying International Production Sharing at the Bilateral and Sector Levels. NBER Working Paper 19677.

Notes

1 See Felbermayr et al. (2017b) for econometric details and special challenges arising from modelling the Schengen Agreement.

2 Dynamic gains from commercial liberalization have been demonstrated in many studies; see Sampson (2016) for a current example and further references.

3 We show the DCFTA and the WTO scenario, as the latter and the Global Britain scenario typically show rather similar trade effects for the German-UK trade pair.

4 In a transitional phase following Brexit in 2019, Britain could negotiate its new status, adjust smoothly and discuss details of its long-term relationship with the EU. The transitional phase may have budgetary implications as well.

5 In addition to the UK, several other net contributors to the EU budget have made the case that their contributions represent an excessive budgetary burden in relation to their wealth and negotiated correction mechanisms of their own. These include a reduced VAT contribution for Germany, the Netherlands and Sweden which is fixed at 0.15% for 2014-20 while all other members have a rate of call of 0.3%. Moreover, Austria, Denmark, the Netherlands and Sweden benefit from gross lump sum reductions in their annual GNI contributions.

6 See, e.g., Cameron (2017) for a discussion of the different trade agreements.

7 Net contributions are often criticized for being a poor indicator of benefits that members get from either EU membership or the EU budget, see High Level Group on Own resources (2016). But given expenditures changes in net contributions are an appropriate indicator for the distribution of the financial burden implied by Brexit as far as it affects the EU budget.

8 See Büttner et al. (2017) for a recent proposal of how to restructure the financing of the EU.

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

For general enquiries:

LSE IDEAS
9th Floor, Pankhurst House (PAN)
Clement's Inn Passage
London WC2A 2AZ
United Kingdom

+44 (0)20 7849 4918

ideas@lse.ac.uk

lse.ac.uk/ideas

@lseideas

lseideas

linkedin.com/company/lse-ideas/