



THE ROAD TO THE ECONOMICS OF BREXIT: A NEW DIRECTION IN ECONOMIC RESEARCH

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Abstract. Brexit became an important subject not only for academics but also for international institutions, research centers and consultancy companies, think tanks and independent experts. The aim of this article is to: (1) provide a general approach of the literature; (2) see how the effects of Brexit are explained in such short-term approach and how important are the economic issues in the debates; (3) identify directions for future research, arguing that a new field of study emerged. The estimation of economic impact of Brexit has generated a reach literature in a short period, which identifies the main issues, rather than providing strong results and conclusions. In order to fill this gap, our paper provide a systematic review of the most important contributions and group them in four research directions: overall economic implications of Brexit; Brexit and trade; migration and labour market; financial issues and Brexit.

Keywords: economics of Brexit, economic research, GDP, trade, migration and labour market, financial issues.

JEL Classification: F02, F13, F22, F36, F43.

Introduction

Just a few years ago, the economic science failed in predicting (and explaining) the big crisis of 2008–2009. Many people, both academics and non-academics, thought that the failure is related to inappropriate methods, such as use of mathematical models as the main tool of learning about the complex reality of the global economy. Almost 10 years later, economists are facing some new challenges, most of them linked to political evolutions, but with strong economic implications. Brexit is probably the most provocative of these, because of the novelty of the processes involved. The result of the Referendum of 23 June 2016, when 51.9% of voting citizens decided that UK should live EU, was against all the mainstream economists' opinions.

Nevertheless, it would be wrong to consider that their contribution in the debate doesn't matter. In a recent book, Applebaum (2019) mentioned that Milton Friedman wrote in his

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1998 memoirs that “economists exert influence by keeping options available when something has to be done in a time of crisis, by ensuring the refrigerator is well stocked when policy makers open the door”. The economic implications of withdrawing UK from EU after 40 years of membership are huge and their complexity is far from being understood. The economic separation of UK from the European Union, the most integrated regional bloc is challenging. The short-term solution was to apply backwards the conventional tools used in integration theories, and the results were reasonable (Begg, 2017). However, there are a challenging issues and questions to answer, and a disintegration theory, with its own body of analytical tools, topics and well recognized names seems to emerge.

The demand for reliable analyses, for strong arguments and results regarding the economic impact of Brexit, both on UK and EU, generated a rich literature in the last years. Although the abundance of studies, articles, and reports is a good think, the new research on the topic of deep integration being considered one of the few undisputed benefits of Brexit (Campos, 2019), this could be challenging. The need for systematic and non-partisan approaches became essential, as efficient and reliable learning tools in the field. In this context, the purpose of this article is to investigate how the economic literature, papers published between 2016–2019, approached Brexit. The study of almost 300 titles (journal and conference papers, reports) aims to: (1) identify the main topics related to economics of Brexit; (2) see how the effects of Brexit are explained in such short-term approach and how important are the economic issues in the debates; (3) identify directions for future research, arguing that a new field of study emerged.

The rest of the paper is structured as follows: Section 1 provides an overview of the research methodology, presenting the online resources interrogated, the keywords and the filters used to provide a systematic approach. Section 2 focuses on literature review and previous contributions in the field. Section 3 is the core of the article, where the literature about Brexit and results of the investigation are described and organized on the following topics: overall economic implications of Brexit measured by GDP; Brexit and trade; migration and labour market; financial issues and Brexit. Conclusions Section summarises the ideas, also providing some directions for future development of the subject.

1. Research methodology

The purpose of this study is to provide a relevant review on Brexit literature in order to identify the key areas for future research, by organizing and evaluating available results. The hypothesis is that such a big turmoil will generate a new direction of study, similar with economics of integration, and this would be the engine for new tools and models, empirical studies and policy papers for many years from now. Following the rules for a review article, the methodology was to scan the economic publications after 2016, providing the big picture on economics of Brexit to identify the state of the art and future challenges. Similar with some previous work in this field (Armstrong, 2017), time was considered a key issue and three stages related to the Brexit process were identified: pre-Referendum (stage one); stage two, between Referendum and Brexit day (originally due to happen on 29 March 2019, delayed for 31 October 2019, delayed again for 31 January 2020, when the withdrawal agreement entered into force, but still

an ongoing process); and post-Brexit (stage three). In this context, this study explores papers published in stage 1 and 2, arguing that in stage 3 Brexit will be the source of a new subfield of Economics, with new challenges and directions in economic research.

The starting point of this article was the idea to study the Brexit literature as it developed since 2016. The research began with journals and conference papers indexed in three main databases – Web of Science Core Collection, Scopus and Science Direct – and continued with reports and other types of resources available online. In Web of Science, the search included Brexit as topic. In Scopus and Science Direct, instead of topic, the selection was based on the presence of Brexit in title, abstracts and keywords of the research or review articles and conference papers. For the period 2016–2019, 4798 results were found and by eliminating the duplicates, a database with 3448 documents was created. The fact that the number of publications increased from 513 in 2016 to 1210 in 2017, 1454 in 2018 and to 1621 in 2019 is an evidence that for the scientific community Brexit has suddenly become a focus point and an important research challenge.

Out of more than 3400 academic papers regarding Brexit, the most relevant were selected based on their focus on economic issues, filtered by research area in Web of Science (Business and Economics) and by subject area in Scopus and Science Direct (Economics, Econometrics and Finance; Business, Management and Accounting). Over the last four years, the surveyed databases have indexed in total, without duplicates, 284 titles related to economic topics of Brexit (scientific articles published in journals and conference papers). Important titles from other fields and sectoral or area studies about the impact of Brexit were excluded.

Brexit became an important subject not only for academics but also for international institutions, research centres and consultancy companies, think tanks and independent experts. The most relevant for this study were Center for Economic Policy Research (CEPR), Center for Economic Performance/London Schools of Economics (CEP/LSE), Center for Economic Studies (CESifo), Center for European Policy Studies (CEPS), Council of Foreign Relations (CFR), Brookings Institution, International Monetary Fund (IMF), Organization for Economic Co-operation and Development (OECD), Bank of England, HM Treasury, Whitehall, European Parliament, National Institute of Economic and Social Research (NIESR), PricewaterhouseCoopers (PwC).

The aim of the study was to identify the main topics and research questions related to Brexit, the main challenges as outlined in the last years. For that, *Brexit* was the keyword searched in all mentioned sources above. In order to discover some previous contributions, *leaving EU*, *UK exit*, *UK withdraw* were also included. Finally, the most relevant were selected and grouped in four directions: overall economic implications, trade, migration and labour, finance. Regarding the timeframe, the article emphasizes mostly the contributions published after 2016, when Brexit emerged as an important keyword for economic research. One of the remarks was that the research topics were time sensitive: before the vote, many of the studies were focused on costs and benefits, and after the Referendum the interest moved to issues like which are the next steps, the process of Brexit, negotiations, sectoral studies etc.

From the methodological point of view, the paper is based on three pillars: time (2016–2019), keywords (Brexit) and the selected databases (Web of Science Core Collection, Scopus and Science Direct). In any future research the framework could be extended for all three

dimensions. The methodology was designed as a qualitative approach of the literature. The selection of the resources was subjective, based on reading and analysing the content of the articles, aiming to provide a reliable big picture on economic issues related to Brexit. The bibliometric analysis and the use of specialized software such as VOSviewer was considered, but the results would be more relevant in the future, for a longer period and for a deeper investigation. Some of the limitations of the research are: (1) the field study is focused on mainstream contributions; (2) the use of Brexit as keyword in all searches; (3) the sectoral studies were excluded. Nevertheless, these issues will not significantly diminish the quality and the relevance of the conclusions.

2. Literature review

The literature on Brexit multiplied in the last years. The need for papers able to provide the big picture, in an objective and comparative manner, emerged quite soon because “the consumers” of information on this topic are a heterogenous group, with individuals, institutions and organizations, with different levels of knowledge and understanding. Before the vote, first stage in the timeline, the focus was on the possible impact of Brexit. Most of the reviews emphasized the negative impact of leaving the European Union, both for UK and EU and some mentioned the rather confusing results, based on wide distribution of the estimated percentages (for GDP, trade, migration, etc.) (Kierzenkowski et al., 2016; Chadha, 2016; Ebell & Warren, 2016). One of the most exhaustive contribution in this period was the meta-analysis published by Busch and Matthes (2016a), which provides a systematic overview of studies published before April 2016. They showed that diverging results are related to different methods and assumptions.

After the vote, the focus changed. The most important question became *how?* and for some authors *why?* Troitiño et al. (2018) deliver a new conceptual approach of Brexit, seeing it as a process that began decades earlier, based on historical background, political aspects, legal and economic matters. Many contributions are related to different scenarios – different arrangements (Tetlow & Stojanovic, 2018; Office for Budget Responsibility [OBR], 2018); no deal/further delay/deal/never Brexit (Nabarro & Schultz, 2019). Some other studies organize main contributions of the literature based on the question *who?* A report of the European Parliament (European Parliament, 2017) makes a summary of scenarios and models for simulating the impact of Brexit, issued by official sources (OECD, HM Treasury, Netherlands Central Planning Bureau) and independent academic institutions or think tanks (LSE, IFO, Open Europe). Likewise, Belke and Gros (2017) mention six model-bases attempts of official sources and independent academic institutions (OECD, HM Treasury, Netherlands Central Planning Bureau, LSE, IFO/Munich, Open Europe/London) developed to simulate the consequences of Brexit, all of them concluding that “Brexit will lead to a significant disruption of trade links and will impose economic costs on both sides”.

In examining the Brexit, the paper makes the distinction between “ex ante” and “ex post” studies. Most of the published articles centred on modelling the effects of Brexit on UK economic growth and trade using different methodologies: short-term forecasts with various methods and assumptions; long-term estimates of the Brexit economic impact produced by

official and independent organisations. One of the first studies, written by Pain and Young (2004), used simulations based on the National Institute's Model of UK economy (NiDEM), comparing the outcome with a baseline case of no exit. For estimating the short-term economic impact of Brexit to UK, Baker et al. (2016a) applied the National Institute's Global Econometric Model (NiGEM). The same econometric model (NiGEM) was used to simulate the long-term implications of UK exit (Ebell & Warren, 2016). On the other hand, Van Renen (2017b) has begun to investigate the long-term economic effects of Brexit since 2013, applying the Computable General Equilibrium Model (CGEM), a model that estimates how an economy react to changes in policy, technology or other external factors and generates a new equilibrium for the world economy. There are some previous contributions which aim to present the literature by covered topics. A reference work (Begg, 2017) is organised on the following directions: ex-ante assessments, short-term projected effects of Brexit, labour market, public finance and role of economists. Campos and Coricelli (2017) examine the past, present and future of UK-EU economic relations, tackling themes such as economic growth, international trade, FDI, financial markets and migration. Martill and Staiger (2018) discuss the consequences of Brexit for the future of Europe in the field of institutional relations, law, justice, foreign affairs, and democratic governance. In 2019, Campos (2019) surveys the Economics literature on Brexit and discusses the short-run effects of the vote and expected long-term consequences of Brexit.

This paper is similar to the last group of contributions, but fills at least two gaps: *the time* – the research covered almost completely the years 2016–2019; this values the opportunity to filter and present the information knowing post-vote evolutions, with the successive delays and debates related to a deal/no deal Brexit; *the perspective* – our purpose was to discuss the core issues of the economic debates and also to identify future directions for researchers. For many years' economic costs and benefits of integration were studied. Now, they will start to learn about the effects of disintegration. In the last three years only the tip of the iceberg was visible, with traditional theories and tools used to estimate the impact of Brexit, but the recent history proved that the impact of this kind of political decision on economic theory could be huge and impossible to predict.

3. Results of the research

In this early stage, the estimation of economic impact of Brexit has generated a reach literature which identifies the main issues, rather than providing strong results and conclusions. One of the biggest problems with this literature is the high number of papers and studies published in a short period. To fill this gap, the paper provides a systematic review of the most important contributions and group them in *four research directions*. The results of this analysis are structured as follows: overall economic implications of Brexit measured by GDP; Brexit and trade; migration and labour market; financial issues and Brexit.

3.1. Overall economic implications of Brexit – the impact on GDP

Before the vote, the economic impact of Brexit on UK economy was intensely discussed. *Detailed projections*, under different scenarios for the post-Brexit UK-EU relationship *were*

produced by academics, institutions and consultants. It is recognised that Brexit will have consequences for both EU and UK, with losses considerably larger for UK as revealed in the most available articles. Belke and Gros (2017, p. 6) summarise the conclusions of this type of studies: “the main story is one of economic losses by both parties, but disproportionately between them in money amounts in a ratio of around 1 to 2 or 3 for UK and the EU-27 respectively. In terms of percentages of GDP, the losses for the EU-27 would be about 10 to 15 times lower given the 1:5 ratio in the GDP of UK relative that of the EU-27”. Moreover, the impact on EU will involve rethinking the governance structures, the economic and institutional arrangements. For UK, Brexit would mainly influence the trade, the labour market, the public finance and London’s position as a financial centre. In the same time, the economics of Brexit is just one problem. All experts admit that political and social aspects related to the separation process will be critical for the future of UK, EU and the rest of the world.

The literature on the costs and benefits of leaving EU multiplied in 2016–2019 but previous discussions and studies could be identified. One of the earliest analysis, in 2004, suggested that withdrawal from EU would mean that the level of output in UK economy would be 2.25% lower (Pain & Young, 2004). Later, Ottaviano et al. (2014) showed that leaving EU it is likely to entail heavy losses for UK economy – a GDP loss of 1.1% (optimistic) and of 3.1% (pessimistic). Ex-ante assessments of the Brexit impact focused on (1) macroeconomic forecasts (2) projections of the short-term consequences based on diverse scenarios and (3) long-term analyses of different likely outcomes (Begg, 2017).

Although almost all articles seem to converge in the same direction, there are some *differences in the estimated results* (values, percentages and indicators) caused by different assumptions in a high uncertainty regarding market reaction and by the lack of methodological accuracy. Campos (2016) identified three types of estimates: type 1 showing gains (economists for Brexit); type 2 reporting a zero effect (pre-May 2015, done by pro-Leave think tanks); type 3 revealing medium and long-term losses from Brexit (central estimates).

Short-term evaluation emphasises the resilience of UK economy, not only for trade or labour market, which are more likely to change on long-term but also for financial markets (Obstfeld, 2016). The recent forecast published by Directorate-General for Economic and Financial Affairs [DG-ECFIN] (2020) shows that UK GDP growth has been slowing since 2014, when it reached a post-crisis high of 3.1% to 1.8% in 2017, 1.3% in 2018 and 1.4% in 2019. Overall, UK GDP is expected to fall by 8.25% in 2020 in the context of COVID-19 pandemic. The most sensitive part of the economy was the financial market, with a pound sterling devaluation causing a higher inflation rate (+2% in the first quarter of 2017 compared to a year ago). Using two scenarios (optimistic and pessimistic), Dhingra et al. (2016) estimated the effects of Brexit on trade and UK’s contribution to EU budget equivalent of a fall in income between 1.3% and 2.6% (GBP 850 to 1,700 per household per year). Along the same lines, Welfens and Hanrahan (2017) mentioned an exit bill for UK close to 2% of GDP. The economic effects will go to the next level in stage three, post-Brexit.

In the long-run, Dhingra et al. (2016) think that the decline in income increases to between 6.3% and 9.5% of GDP (GBP 4,200 to 6,400 per household per year). Busch and Matthes (2016b) warn about the sizeable net economic long-term costs, in a pessimistic scenario of around 10% of GDP loss. The figures mentioned by Van Reenen (2016) show a welfare

loss from 1.3–2.6% (for calculation based on a standard multicountry, multisector, computable general equilibrium model) to 6.3–9.5% (for dynamic models which incorporates productivity effects). Other studies use historical evidence in predicting the economic consequences of joining EU, like Crafts (2016) who measures net welfare costs of 2.2% of GDP in the case of UK exit. Belke and Gros (2017) estimate the losses average for the UK between 1.31% and 4.21% of GDP for the optimistic and pessimistic scenarios respectively. Sampson (2017) considers that, in the long-run, Brexit will make UK poorer (between 1% and 10% of UK's income per capita) because it will create new barriers to trade, FDI and immigration. Vandebussche et al. (2017) predict a loss of 4.47% of UK GDP in a “hard Brexit scenario”, four times as much as a “soft Brexit scenario” of 1.21%. Van Reenen (2017b) has begun to investigate the long-term economic effects of Brexit since 2013, applying the Computable General Equilibrium Model (CGEM), on two scenarios: a “soft Brexit” with UK in the Single Market, estimating a cost about 1.3% in lost income; a “hard Brexit” with a welfare loss between 6% and 9% of GDP. Hantzsche et al. (2018) estimate the economic impact in 2030 of different Brexit scenarios comparing with stay scenario using NiGEM model, calculating the following losses: 3.9% of GDP (deal + FTA); 2.8% of GDP (deal + backstop); 5.5% of GDP (no deal). Much more optimistic, Steinberg (2019) finds that in the long-run, UK GDP will fall by 0.5–1.4%.

International organisations (IMF, OECD) and important *institutions* (Bank of England, HM Treasury, NIESR, PricewaterhouseCoopers, European Parliament, Whitehall) have looked at overall economic impact of leaving EU, showing that Brexit would have negative consequences.

In May 2016, International Monetary Fund [IMF] (2016) has talked about possible economic effects of Brexit, such as: a high financial market volatility, a hit on UK output and incomes and an erosion of the London's status as a global financial centre. A study published in OECD Policy Paper (Kierzenkowski et al., 2016) identifies the channels through UK will be affected. On short-term they estimate that, by 2020, GDP would be over 3% smaller, due to tighter financial conditions, weaker confidence, higher trade barriers and an early impact of restrictions on labour mobility. On long-term, they predict that, by 2030, GDP would be 2.7% lower in an optimistic scenario and 7.7% lower in a pessimistic scenario, due to capital, immigration and declining technical progress.

In 2016, Bank of England has warned that Brexit could result in financial instability with damaging macroeconomic effects because of UK financial openness. Two years later, the Bank' governor declared that the Brexit Referendum has hurt UK economy and made people poorer.

HM Treasury published in 2016 two reports. The first HM Treasury (2016b) examined the long-term impact of remaining a EU member compared to 3 alternatives: (1) membership of the European Economic Area (EEA), like Norway; (2) a negotiated bilateral agreement, such as that between EU and Switzerland, Turkey or Canada; (3) WTO membership without any specific agreement with EU, like Russia or Brazil. The annual loss of GDP per household after 15 years was estimated at: (1) GBP 2,600; (2) GBP 4,300 and (3) GBP 5,200, and the conclusion was that UK would be permanently poorer if it will leave the EU. The second report (HM Treasury, 2016a) predicted that, two years after the Referendum, GDP would be around 3–6% lower than the in the case of not leaving scenario.

In 2016, NIESR published some articles that explore the implications of leaving EU for UK economy. On short-term, Baker et al. (2016b) have suggested that the level of GDP in 2017 would be 1% lower than the baseline forecast with UK in EU and by 2018 could get to 2.3%. On long-term, Ebell and Warren (2016) projected that by 2030, UK GDP would be 1.5% to 2.1% lower in a Norwegian scenario, 1.9% to 2.3% lower in a Swiss scenario, and 2.7% to 3.7% in the WTO scenario.

In the same time, a PricewaterhouseCoopers report [PwC] (2016) identified 5 potential impacts of Brexit on UK: increase in uncertainty, lower levels of trade and investment, reduction in migration, in regulation and in fiscal contributions. Using a Computable General Equilibrium Model (CGEM), it estimated that the level of real GDP in 2030 could be 1.2% lower in the FTA scenario and 3.5% in the WTO scenario, as a result of trade and migration effects.

The European Parliament (European Parliament, 2017) assessed the likely impact of Brexit on EU, finding that the losses would be insignificant but the impacts on EU member states and sectors could be greater. On the other side, it is considered that the losses for UK could be highly significant, over ten times greater as a share of GDP.

A government study (Whitehall, 2018) analysed the potential effect of EU exit focusing on the long-run impacts and opportunities, on the same HM Treasury 3 alternatives for 15 years, estimating the following losses: (1) 0.6–2.6%; (2) 3.1–6.6% and (3) 5.0–10.3%.

In UK economic press, especially for the Financial Times, Brexit is the most read and commented-on topic since Referendum. The process is approached from different perspectives through expert analyses on the main themes and sectoral studies. The Economist (2018) has presented that the government's own economic analysis finds that Brexit will damage the economy and the responses for this problem are that the work is incomplete, the forecast for 15 years cannot be accurate and the analysis does not model the government's preferred Brexit outcome (FTA like Canada's).

A *pro-Brexit* group is "Economists for Free Trade" that thinks that leaving EU has potential benefits and no costs. The main voice of the group, Patrick Minford argues that Brexit will raise UK's welfare by 4% as a result of increased trade (Minford, 2015; Minford et al., 2016). In the same way, Bootle et al. (2018) find that the level of GDP could be between 2–4% higher in 15 years than if UK had remained in EU.

In a report of Council of Foreign Relations, Kahn and Tananbaum (2016) look at Brexit as a great threat, considering that if policymakers respond effectively, the benefits could be substantial; if not, the risks could cause a global economic contagion.

Scanning the literature regarding the economic impact of Brexit, two things were discovered: a great concentration on UK implications of exit comparing to the effects for the EU; and a higher number of long-run studies rather than short-term estimations. The effects of Brexit on UK economic growth in the long run are estimated by economic literature as can be seen in Figure 1.

Reviewing all these studies, the conclusion is that the impact of Brexit on GDP is placed in a range from some benefits (2–4%) to significant losses estimated on the long-term between 0.13% (optimistic scenario) and 10.3% (pessimistic scenario). Although the authors are reaching different results – various degrees of losses – almost all of them have the same opinion that Brexit will negatively influence UK economy.

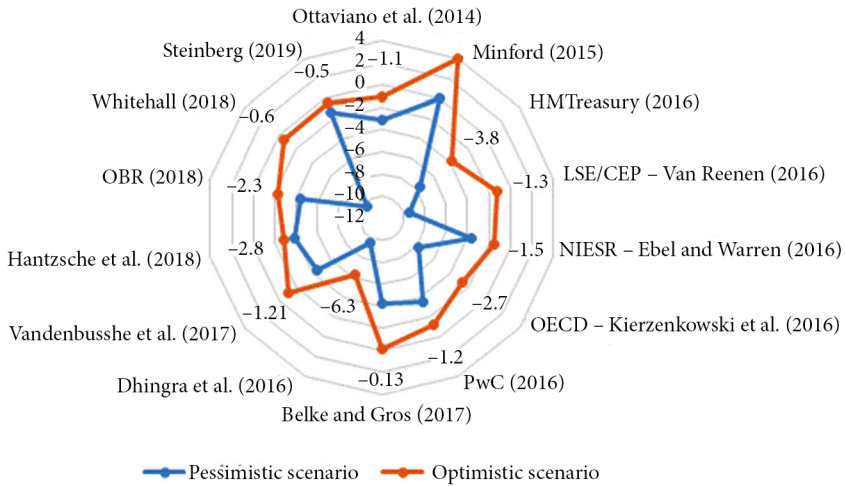


Figure 1. The long-term impact of Brexit on GDP in the economic literature (by 2030)

3.2. Brexit and trade

Free trade was from the beginning a central issue in the political and economic debate about the economic impact of Brexit. In fact, the long-term negative effect of Brexit is expected to operate through its impact on trade and FDI.

The starting point in evaluation of the Brexit costs is the value and the importance of trade between UK and EU – European Union is UK’s largest trade partner. In 2016, EU members accounted for 46.9% of UK goods export and 54.7% of goods import. Belke and Gros (2017) emphasise that a significant disruption of trade links will impose economic costs on both sides, smaller for EU because of its economic size. Higher tariff and non-tariff trade barriers will determine increases in trade costs between UK and EU after Brexit. In addition, there will be losses due to reduced trade integration within EU and by pound sterling depreciation.

Campos and Coricelli (2015) consider that exit from EU may have severe effects on UK financial sector, and through these, on trade and FDI. They argue that the benefits of financial services specialisation in UK depend of their interactions with trade and FDI.

Van Reenen (2016) suggests that UK-EU trade will be depressed by about a quarter after Brexit. The author (Van Reenen, 2017a) focuses on Brexit’s impact via the changes in trade patterns and FDI, concluding that UK will have higher trade costs that determine a trade and welfare decrease.

A KPMG study (KPMG, 2017) evaluates the overall effect of Brexit on different sectors and the extent to which trade and labour are affected, on three basic scenarios: “hard Brexit” – trade and labour equally restricted (labour 50%, trade 50%); “free trade” – significant concessions on trade and restrictions on labour (labour 90%, trade 10%); “free labour” – significant restrictions on trade and free movement of EU labour (trade 90%, labour 10%).

Vandenbussche et al. (2017) use world input-output model to predict the trade impact of Brexit on the domestic value added for every EU country, quantifying the future costs in

two scenarios: “soft Brexit” – with zero import tariffs and an increase of 2.77% for non-tariff barriers; “hard Brexit” – with a rise of import tariffs to most-favoured nation rates and to 8.32% for non-tariff barriers. According to Brakman et al. (2017), UK value added exports will fall by 13% under “soft Brexit” and 17% under “hard Brexit”. Steinberg (2019) predicts that trade flows with the EU will fall by 8.2–44.8% and the consumption by 0.5–1.3%.

The political and economic debate related to trade and Brexit include also comparisons between UK-UE and UK-Transatlantic Trade and Investment Partnership (TTIP). Belke and Gros (2017) say that goods and services trade between UK and EU is of a similar order of magnitude as transatlantic trade (between EU and USA), considering that for EU, Brexit might thus be of comparable importance (with the opposite sign) as TTIP. Jackson and Shepotylo (2018) look at Brexit as a source of policies change and explore its welfare implications. They present the interaction with major trade policy initiatives under five Brexit scenarios and their estimates suggest that the impact of Brexit is negative in all policy scenarios, with lower welfare losses under a soft Brexit scenario.

On the other side, the “Economists for Free Trade” group (Minford, 2017, 2018) recommends abolishing all trade protection. They assume that the gain in consumer living standards from leaving EU customs union is 3.2% due to the fall in tariff-equivalents and 0.8% due to an improvement in the terms of trade.

3.3. Migration and labour market

Free movement of people and labour was one of the main reasons for Brexit. The political discourse did implicitly acknowledge the role of the immigrants’ perception in the voters’ position regarding Brexit. Prime Minister David Cameron in 2010 first introduced the goal to cut net migration to less than 100,000 a year and this figure continued to be a promise for Theresa May in 2017. Even if now the goal was reformulated as “no specific target but a sustainable level of migration”, the problem still is in the centre of the debate (BBC, 2019). Academic literature agrees on the importance of this issue. As an example, Dokoupil and Preis (2016) analysed “migration crisis” and how expected changes could impact small territorial units, emphasising that one of the main reasons for Brexit was the Schengen system and the free movement of people and labour within common market. Their study is made in the context of possible developments of the Schengen influenced by Brexit and migration crisis.

Because of the Brexit, the fall of net migration from EU to UK both on short-term and long-term is inevitable and it is already going on. In 2017, Oxford Review of Economic Policy dedicated a special issue to different aspects related to Brexit, including labour market and migration. Portes and Forte (2017) analysed the determinants of migration flows to UK, concluding that some fall in net migration from EU to UK was inevitable, and not necessarily related to the Referendum, even factors like uncertainty could have a short-term effect. The article discusses long-term impact based on two key issues: (a) the policy regarding non-UK citizens from and outside European Economic Area, with two possible scenarios – equal/non-equal treatment; (b) the solution for skilled migration. They elaborated a forecast for the migration to UK from all EU member states, except for Croatia and Cyprus, concluding that net EU migration could fall up to 95,000 in central scenario, and up to 150,000

in an extreme scenario over the period to 2020. The figures related to migration are not clear. Office for National Statistics (the UK's largest official statistics producer) admitted that data about migration in the last decade were “underestimated” and they decided to downgrade the status of migration figures to experimental. Nevertheless, the short-term consequences of the Brexit are indisputable, since the number of migrants from EU more than halved since the vote of 2016. EU migration reached the lowest level since 2013, with 92,000 people arriving from EU to UK for work, and more Central and Eastern Europeans leaving than arriving (BBC, 2019).

Is it good or bad? Most studies on the impact of reducing migration agrees on negative consequences: reduced overall employment, reduced GDP per capita and reduced productivity, shortage of skilled workers in some industries, reduced number of jobs. A possible positive effect could be a higher salary for employees, because of supply – demand game on the labour market and an increased power of negotiation. But labour market has subdivisions and it is possible that old immigrants to earn the difference, not the native who voted for Brexit.

The Brexit discourse related to migration linked EU membership of UK to the high level of immigration, even if data from different reports show that the most of migrants to UK came from Commonwealth countries (Simionescu et al., 2017b). Using some non-EU countries as a benchmark (Russia and Ukraine), studies reveal that EU enlargement after 2004 combined with the policy decision to open the labour market for Central and East European countries increased migrants flow to UK (Simionescu et al., 2017a). Nevertheless, impact on UK real economic growth and price stability was positive. Post-Brexit migration policies could negatively affect the British economy. Some authors directly link migration to labour market policies, based on the fact that work is the main reason for EU citizens migration to UK (Sumption, 2017). This is the argument to focus on the qualitative side of migration and to recommend policies based on which jobs are eligible for labour migration, the nationality specific criteria or the rights of the migrants. This approach emphasises also some trade-offs which are related to the set of rules which will be implemented after the negotiation of Brexit.

In this context, the complex mechanisms of labour market could generate unexpected effects on *unemployment*. Petrongolo (2016) explains that a reduction of EU citizens working in UK will not necessarily increase the number of employed UK citizens. It is possible to have some positive effects on their wages, if they will have the power to push them up. Regarding the jobs, there are studies which shows that new migrants often compete most directly with previous immigrants and less so with indigenous workers, leading to the somewhat ironic implication that a curb on new migrants will benefit ‘old’ migrants more than those who voted for Brexit. PwC (2016) estimates a reduction of employment by 350,000–600,000 jobs in 2030 comparing to 2016 in the case of UK exit. Using the model of world input-output, Vandebussche et al. (2017) evaluate the trade effects of Brexit on the employment for every EU country. The results indicate that Brexit would cost jobs: in UK, 526,830 jobs in the “hard Brexit”, four times as many as a “soft Brexit”; in EU, 1,209,470 jobs in the “hard Brexit”, four times as many as for a “soft Brexit”.

3.4. Financial issues and Brexit

It is known that UK is net *contributor to EU budget* and the main economic benefit of leaving EU would be a lower net contribution and thus fiscal savings. Boulanger and Philippidis (2015) suggest for UK equivalent variation gains of EUR 8.9 billion on withdrawal from EU budget. In the Institute of Fiscal Studies report (Emmerson et al., 2016) are analysed the direct and indirect consequences of the Brexit for UK public finance, estimating a negative effect between GBP 20–40 billion in 2019–2020. Starting from the statement that UK “sends GBP 350 million per week to Brussels”, Begg (2017) considers that the true amount is between 0.3% and 0.7% of GDP, depending on whether a gross payment or one net of EU money spent in UK is used. Based on interviews with experts in the law, trade and politics, Dunt (2018) finds that the transfers cut the capacity of London financial services by 10% and the City has lost 100,000 jobs and GBP 12 billion in revenue within a year.

Another aspect of financial implications of leaving EU is related to *taxation*. Analysing different issues in this field (custom and VAT, corporation tax, state aid and tax, or the hypotheses that after leaving EU, UK can become a tax heaven), Freedman (2017) concluded that Brexit presents both opportunities and dangers. The opportunities are related to the new-found freedom, but the danger is related to the politicians’ reaction in tax area.

On the other side, London is EU largest financial centre. As regarding the effects of UK exit on the *financial market and pound sterling*, the views are quite similar.

In June 2016, a survey of Centre for Macroeconomics [CFM] (2016) asked experts for opinions on the impact of Brexit for the financial sector. Almost all panel members thought that a positive vote would lead to “a significant disruption to financial markets and asset prices for several months, which would put the Bank of England on high alert”. The first question asked panel members to assess whether “would be substantial negative long-term consequences for UK financial sector if UK were to leave the EU?” A strong majority agreed that there would be substantial negative long-term consequences. The second question asked about “the probability that UK experiences such a significant disruption to financial markets and asset prices”. 82% either strongly agreed or agreed with this statement.

Jackson (2016) wonders if the London will continue to be attractive as a financial centre, characterized by the size and interconnectedness, its cosmopolitan nature and available skills, and labour market flexibility. For the banking sector, she shows the short-term implications of Brexit for sector’s profitability, in a financial architecture with low interest rates. Danielsson et al. (2016) think that Brexit would create new opportunities and risks for UK and EU financial markets. They see a substantial shock for these markets with an initial reaction that indicates weakness for the pound sterling and financial assets and with great losses for the banks. Adesina (2017) shows that the results of Brexit referendum determined persistent volatility in the stock market and exchange rates. In a wider context, Alexander et al. (2018) examine the legal and regulatory implications of Brexit for financial services, the impact for UK financial sector, euro area and international financial system. Samitasa et al. (2018) study the effects of Brexit through the financial system, using an object-oriented simulation model. They show that both UK and EU economies will suffer as a direct result and that, in the long run, both sides are worse off. Applying the detrended fluctuation analysis, Bashir

et al. (2019) find that the Brexit vote affected FTSE 100 index negatively, but this trend has not continued. James and Quaglia (2019) explain the City of London's apparent failure to influence the Brexit policy.

For the *pound sterling evolution*, Baker et al. (2016b) considered that the risk and uncertainty will cause a depreciation by around 20% immediately following the Referendum, determining inflationary pressure. Gerlach and Giamberardino (2016) estimated the potential size of the effect of UK's Referendum on pound sterling by looking at the relationship between daily changes in the pound exchange rate and bookmakers' odds of Brexit. They suggested that an outcome in favour of remaining might appreciate pound sterling by 5% and an outcome in favour of leaving might depreciate pound sterling by 15%. Corsetti and Müller (2016) foreseen a depreciation of the pound sterling that will generate an export boom. The Deputy Governor of Monetary Policy in Bank of England (Broadbent, 2017) explains why the currency reacted this way: "in the eyes of the market, leaving EU will make exporting harder and more costly. To help compensate the currency needs to be cheaper".

Since the Brexit vote of 23 June 2016 (GBP/EUR 1.3056), the pound sterling has lost 5% of its value against euro in one day, 8% in a week, 9% in a month and 12.3% in two years. After a time of stability in early 2017, the pound sterling has again started to depreciate. According to European Central Bank data, on August 29, 2017 GBP/EUR hit 1.0757, the lowest level against the euro since 2009, followed by periods of low appreciation to 1.1748 (March 27, 2017), depreciation to 1.0772 (August 13, 2019) and appreciation again to 1.205 GBP/EUR (February 18, 2020). In fact, between June 2016 and May 2020, the monthly exchange rate of the GBP to EUR has remained below 1.2.

The studies reviewed identify the main financial issues of the analysis – public finance, financial market, pound sterling – and the conclusion is that the research in this field will add-up and it will provide more answers in the years to come.

Conclusions

Following the bibliographic study of the economic implications of Brexit, the research identifies the main directions that have emerged in last years and to analyse the most important ones, considering the number and the relevance of the published scientific contributions. These were grouped those around four themes: overall economic implications; trade; migration and labour market; and financial issues. For the next years, these will continue to be the core of the research, but some new topics and directions will emerge, due to the transition to post-Brexit stage of the process. The public's and non-academics' expectations will be centred on policy tools, roadmaps, short-term prognoses and implementation challenges. The theoretical research will face some other challenges, such as attempts to re-interpret the mainstream models, as most have been used to assess the impact of liberalization policies and economic integration, not the "disintegration" process.

Another aim for this review was to examine if Brexit is an impulse for academic economists to change their methodological orientations. The conclusion, based on more than 3400 papers scanned, and 284 papers read and analysed is that the specialists will stick to their position and will continue to search for new and improved models to study the economic

issues related to Brexit. This will be the trend at least in mainstream publications, despite the failure of models in predicting and explaining the previous crises and other big changes of the world economy.

Finally, the most important conclusion after such an extensive study of the literature is that a new field of study already emerged in economics. The selection of titles provided by the paper could be a valuable resource for the academics from different fields, young researchers, business people or policy makers interested in economic implications of Brexit.

From the methodological point of view, the paper is based on three pillars: time (2016–2019), keywords (Brexit) and the selected databases (Web of Science Core Collection, Scopus and Science Direct). In any future research the framework could be extended for all three dimensions. The methodology was designed as a qualitative approach of the literature. The selection of the resources was subjective, based on reading and analysing the content of the articles, aiming to provide a reliable big picture on economic issues related to Brexit. The bibliometric analysis and the use of specialized software such as VOSviewer was considered, but the results would be more relevant in the future, for a longer period and for a deeper investigation. Some of the limitations of the research are: (1) the field study is focused on mainstream contributions; (2) the use of Brexit as keyword in all searches; (3) the sectoral studies were excluded. Nevertheless, these issues will not significantly diminish the quality and the relevance of the conclusions.

An important question of this paper was about the role that economists are expected to play in the near future. Most scenarios have shown that the economic impact of Britain's exit will be negative for both partners, UK and EU, but this it was not important for the politicians and voters. An ignored lose-lose situation is further evidence that economists' arguments are not the first to be considered when it's time for political decisions. Nevertheless, their contribution cannot be overlooked and the need for tools and results will continue to be the fuel for this new star of economic research – Brexit. To sum up, maybe the economists have lost a battle but have not lost the war.

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