IJNRD.ORG ISSN : 2456-4184
INTERNATIONAL JOURNAL OF NOVEL RESEARCH AND DEVELOPMENT (IJNRD) | IJNRD.ORG
An International Open Access, Peer-reviewed, Refereed Journal

Expecting Brexit

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Abstract:

The Brexit vote ignited the unraveling of the United Kingdom's membership with the world's largest economic alliance. This paper will review evidence on the realized economic effects of Brexit. The 2016 plebiscite of Brexit inevitably transformed the expectations about future UK-EU relations. This paper will not only study the consequences of this event on different stakeholders but also provide new insights regarding the economic and political impacts of this decision by the UK. Voting for Brexit has had large impacts on the UK economy between 2016 and 2019, ranging from lower investments, higher import and consumer prices, and slower real GDP growth. However, at an international level, there was little or no trade diversion away from the EU member states, implying that many of the anticipated long-run effects of Brexit did not materialize before the new UK-EU trade relationship came into force in 2021. This paper will investigate the macroeconomic shocks of Brexit between 2016 and the end of 2020 before the new Trade and Cooperation Agreement was implemented in 2021.

Introduction:

Brexit refers to Britain's departure from the European Union (E.U.) in 2020. The E.U., an economic and political alliance established in 1993, aimed to promote peace and harmony in post-war Europe. Britain had been a member of this trading bloc since 1992, playing a significant role in its growth and fostering trade and commerce. However, on June 23, 2016, the U.K. voted to leave the E.U., with 17.4 million in favor of leaving against 16.1 million voting to remain. This decision set the stage for negotiations for an official exit, which occurred in January 2020. Despite the decision to leave, the economic relationship between the UK and EU remained unchanged until the beginning of 2021, when a new EU-UK free trade agreement, known as the Trade and Cooperation Agreement (TCA), came into effect. This agreement facilitates tariff-free and quota-free trade between the UK and the EU for all products. However, it also means that the UK is no longer a member of the EU's Single Market or Customs Union trading bloc. Consequently, Brexit has led to a reversal of the deep integration fostered by EU membership and the re-establishment of a customs and regulatory border between the UK and the EU.

This research paper will investigate the economic consequences of the Brexit referendum before the UK's new economic relationship came into effect. During the waiting period, which lasted from 2016 until the end of 2020, Brexit was perceived as a shock to the expectations of future economic policymakers. Specifically, the Leave vote increased the likelihood of economic disintegration, resulting in a decrease in the anticipated future openness of the UK to trade, investment, and migration with the EU. Additionally, it heightened uncertainty regarding future UK and EU economic policies, creating a more risk-prone environment for decision-makers.

Studying Brexit is crucial in the 21st century as it represents the most significant reversal of deep economic integration and liberalism in the modern era. There is no precedent for an industrialized economy leaving an economic area like the EU's common market. While trade agreements typically aim to enhance economic integration and reduce trade barriers, Brexit does the opposite. The unique nature of Brexit offers new insights into how shocks to deep integration and changes in expectations influence economic behavior and international relations.

Brexit constitutes a macroeconomic shock that impacts not only the manufacturing sector, which represents a small portion of the overall economy, but also services, investment flows, the exchange rate, and international policy coordination. The wide-ranging effects of Brexit on almost all sectors of the UK economy have enabled researchers to utilize various data sources and empirical methods to assess exposure to Brexit and estimate the repercussions of the Leave vote. These methods range from differences-in-differences analysis with microdata to synthetic control studies of aggregate output. We examine the strengths and weaknesses of these alternative approaches and highlight the consistency (or lack thereof) between findings derived from different data, methodologies, and levels of aggregation. A recurring theme crucial for future theoretical and empirical modeling is the necessity of reconciling micro-level estimates with aggregate outcomes to accurately quantify the effects of Brexit.

From existing research, we deduce that the Leave vote exerted a substantial negative impact on the UK economy even before it departed from the EU. The depreciation of the sterling following the referendum resulted in increased consumer prices and imported input costs, leading to a decrease in real wages. Heightened uncertainty and the anticipation of heightened future trade and migration barriers contributed to decreased capital investment, diminished demand, and slower GDP growth. Based on available evidence, we estimate that the UK economy was approximately 2 to 3 per cent smaller by the end of 2019 compared to what it would have been had voters chosen to remain in the EU. This decline is significantly greater in scale than the losses incurred by the US during the trade war with China initiated by President Trump and translates to a GDP reduction ranging between £650 and £1000 per person annually at 2019 prices.

An essential factor determining the long-term effects of Brexit will be how trade and investment flows react to the increased barriers brought about by the TCA. Interestingly, despite evidence indicating that trade at the firm and product levels was influenced by the prospect of heightened trade costs, there is little indication of aggregate trade diversion away from the EU before the implementation of the TCA. The EU's share of UK imports and exports remained relatively stable between 2016 and 2020, suggesting that aggregate trade shows limited responsiveness to news regarding future increases in trade barriers. However, there is already evidence indicating that the TCA has decreased UK-EU trade in 2021, particularly in terms of UK imports from the EU. Examining how the UK and EU economies react to this trade shock is a crucial focus for future research, especially considering broader concerns about the impacts of the COVID-19 pandemic on international openness.

Historical impact of decolonization, integration and immigration on the 2020 Brexit decision.

The political and societal influences in post-war Britain, along with its participation in European integration projects such as the European Economic Community (EEC), have profoundly shaped modern British policies. These factors significantly influenced the decision of Brexit. Key political events contributing to this debate include the initial rejection of the UK from the EEC due to foreign relations concerns, particularly with the United States, and Margaret Thatcher's firm stance on British economic involvement. These are further influenced by specific cultural and societal issues, notably decolonisation and immigration. The fluctuating movement of people across Europe significantly influenced Britain's economic and political stance, leading the country away from integration with the EU. As European attitudes evolved in the post-war era, British politics began and have continued to reflect a policy of isolationism and separatism, shaping the ongoing debate about Britain's role within the European community and on the global stage. By examining these changes and various interpretations of their impacts, we can gain a deeper understanding of Britain's current position regarding EU secession.

A common argument for Brexit originates from the belief that Britain stands apart from Europe and has historically acted as a uniquely independent nation, following the ideology of realism. This perspective is exemplified by the organization “Historians for Britain” a collective of British historians. The group advocated for significant reform of the European Union, one that would better recognize the UK’s distinct and individualistic history. The group’s chairman, Cambridge Professor David Abulafia, asserted in a 2015 publication that Britain’s unique past sets it apart from other European nations. In the article, Abulafia outlined the group’s platform, which focused on limited public involvement in the succession debate, renegotiation of EU membership, and greater autonomy for EU member states, including Britain. He concluded the article by stating that following Britain’s entry into the Common Market (EEC) in 1973, the emphasis should have been on economics rather than creating a stronger union.

Contrastingly, David Cameron, Prime Minister of the United Kingdom from 2010 to 2016, frequently referenced historical events in his arguments against British secession. Cameron invoked Britain’s historical role as both a European and global power, stating “From Caesar’s legions to the wars of the Spanish succession, from Napoleonic wars to the fall of the British Wall… Britain has always been a European power.” Cameron delivered this speech at a 2016 event leading up to Britain’s referendum on EU membership, emphasizing the EU’s primary objective as a means to prevent European self-destruction. He also invoked key historical figures such as Winston Churchill, who advocated for European unity to prevent future conflicts and counter the influence of the communist Eastern European bloc, contributing to the continent’s recovery after two devastating World Wars. Further opposition to Euroscepticism was evident in a response to the aforementioned publication by David Abulafia, signed by approximately 250 historians including David Andress and Richard Blakemore, among others. The letter directly refuted claims made by Abulafia and similar scholars, highlighting points such as Britain’s parliamentary history to counter the notion that Britain’s history is significantly distinct from that of Europe.

Additional commentary, particularly by Professor Neil Gregor of Southampton and Professor Ruth Harris of Oxford, utilized history to challenge the Eurosceptic narrative of continuity and separation. For instance, in contesting the notion that Britain has remained immune to ideologies that have affected Europe in previous decades, including communism, fascism, and extreme nationalism, Harris pointed out that this belief neglects the history of the British empire. Gregor further bolstered Harris' argument by emphasizing the UK's involvement in slavery, oppression, extortion, and expropriation. Such disputes and perspectives have intensified the British debate and underscored the importance of historical understanding when examining Brexit.

The Cambridge Journal, of Contemporary European History, aimed to elaborate on this perspective by analyzing various historians' interpretations of Brexit as a historic event. Instead of dividing viewpoints based on nationality, the journal categorized them according to specialities, covering a wide historical spectrum from the pre-war era to the post-Cold War period. Scholars such as Pertti Ahonen examined the two World Wars and their significant impact on immigration and emigration. Ahonen observed that the increased movement of people often generated negative attitudes within host countries, as foreigners were increasingly viewed as a threat to nationalistic communities and sovereignty as a whole. Additionally, David Motadel highlighted that the Second World War, in particular, led to a rise in far-right political organizations, serving as precursors to the pro-secession movement. Movements like the National Front, led by Enoch Powell, epitomized the convergence of anti-immigrant sentiment with heightened nationalistic extremism, advocating violence as a means of activism. This specific movement garnered support from members of pre-war fascist groups and effectively influenced politicians to enact more stringent immigration policies in the late 1960s and 70s.

In addition, historians from Contemporary European History commented on the impact of Cold War-era events. Thorsten Borring Olesen compared the modern British stance to that of the 1960s when the United Kingdom was initially denied entrance to the European Economic Community. However, Olesen notes that the consequences of contemporary divisions resulting from Brexit will be more damaging and impactful than those of the Cold War. The idea of British separation is also addressed. With the collapse of the Soviet Bloc from 1989 to 1991, British absence from Eastern Europe contributed to a more abstract understanding of democracy and prolonged the influence of communism over many nations.

However, this professed disinterest in the rest of Europe did not impede the flow of people to Britain from the East. Kathy Burrell of De Montfort University examined Poland as a case study for the consistent migration patterns from World War Two until the present. Burrell identified key motivations for such movements, including interwar and postwar displacement, heightened restrictions during the Cold War, and economically driven migration as previously communist countries struggled to transition. Drawn to the United Kingdom by its economic and political stability, as well as increasingly prevalent welfare programs, these Polish immigrants represented a significant demographic of border-crossers. This group has reshaped cultural and societal norms in British life, with their impact persisting throughout the past several decades, firmly establishing their continuous presence and influence in Britain.

The history of British integration within Europe is marked by internal debate and external factors. While most European integration began in the late 1950s with the signing of the Treaty of Rome, establishing the EEC, Britain did not fully commit until 1973. The United Kingdom first applied for membership in 1961 but was denied due to its close relationship with the United States. French President Charles de Gaulle believed that these relations would conflict with European interests, potentially resulting in a "colossal Atlantic community under American dependence and direction." Even after obtaining membership, internal disputes threatened continued involvement. A 1975 referendum revealed that approximately 67% of citizens wished to remain within the EC. However, divisions both within and among party lines reflected the polar sides of the debate. Supporters focused on Britain's influence on international affairs, defense issues, and economic benefits derived from integration. On the other hand, opponents were concerned with sovereignty, financial responsibilities, and societal challenges such as immigration. The referendum, although ultimately in favor of membership, showcased a growing divide that would only intensify in the following decades.

During the first wave of migration, between 1950 and 1975, the United Kingdom experienced one of the most significant increases in the proportional population of immigrants. In 1950, the minority population was approximately 1,573,000 people, second only to France. However, by 1975, this number had risen to around 4,153,000, trailing France by only 40,000. By this point, approximately 80% of foreign laborers were concentrated in the United Kingdom, France, Germany, and Switzerland. However, in the following years, several key events altered economic and political landscapes, which, in turn, motivated migration control policies. For example, the 1973 oil crisis reduced labor needs as economic growth stalled. Consequently, the growing unemployment levels in preceding years intensified hostility towards foreigners.

Tensions mounted once more in 1984 when Conservative Prime Minister Margaret Thatcher initiated tough negotiations for a restructuring of economic policy. In a speech delivered in Bruges, Thatcher argued that the EC's focus on developing a "social Europe" beyond single markets and currencies would ultimately "suppress nationhood and concentrate power at the center of a European conglomerate." This idea has persisted over time and has underpinned modern arguments. Nine years after Thatcher's speech, the creation of the European Union through the Maastricht Treaty established more defined sectors and policies for European integration. One major change included the establishment of a common currency. Like the EEC, the creation of the EU reignited skepticism and reluctance within Britain, as evidenced by the UK's decision to abstain from adopting the Euro. This rejection represents a fundamental divide between British thought and that of the European Union.

Following the creation of the EU, new dilemmas arose as its power extended to other sectors such as foreign policy and citizenship. These two areas played a significant role in shaping British opinion following decolonization and during a period of consistent increases in immigration. Post-decolonization, individuals from former colonies increasingly left their homelands in search of the benefits of the metropole. Previous decades saw movement primarily attributed to guest-worker programs, particularly in countries like Germany. However, new immigrants were drawn more permanently by Europe's national stability, economic opportunities, and better welfare systems. These significant movements of people sparked new debates regarding citizenship and immigration policies. Immigrants in Britain predominantly came from newly independent Commonwealth nations such as India, Jamaica, Australia, and Nigeria, fundamentally altering the cultural fabric of Britain. With this influx of people came changes in the geographic makeup of Britain. In cities, segregated pockets of immigrants formed into supportive communities. This community life helped sustain culture and served as the origin point for the spread of diversity. Food preferences became diverse as the quality of English cuisine declined, and restaurants serving foreign cuisine began to thrive, helping bridge the gap between cultures. These restaurants and shops were vital in providing economic opportunities for migrants and helped establish their role as integral components of British society.

However, despite their contributions, concerns over job security, coupled with the strain on infrastructure and welfare systems (such as Britain's National Health Service), led to a surge in anti-immigrant political organizations. Founded in 1967, the previously mentioned National Front (NF) movement gained traction in the 1970s, advocating for a strict and often violent platform. Assisted by pre-war fascists and racialized conservatives, the NF frequently motivated politicians to adopt harsher immigration policies in their campaign platforms. A 1977 New York Times article by Roy Reed elaborated on the NF's tendency to capitalize on "white anxieties" to garner support and highlighted the group's advocacy for repatriating non-Caucasian immigrants to their home countries. Although the group eventually lost momentum after its defeat in the 1979 elections, many far-right, anti-immigrant citizens and political parties maintain connections to the organization to this day.

The United Kingdom Independence Party (UKIP) was officially founded in 1993. Similar to the National Front, this party was primarily based on anti-immigrant sentiment and far-right leanings. However, in contrast to the NF, UKIP's objectives extended to issues of foreign policy and economics as well. Its platform focused solely on the secession of the United Kingdom from the European Union, driving the Eurosceptic debate that ultimately led to the 2020 Brexit decision. The party struggled to gain parliamentary support until 2014 when a rise in Euroscepticism across Britain propelled them to their first victory in a national election, securing approximately 27% of the popular vote. This mission was effectively embraced by Conservative Prime Minister David Cameron in 2016 when he introduced a referendum similar to that of 1975. Although UKIP virtually collapsed by 2017, the party's legacy continued to signify a significant shift in British thought, redefining politics both internally and externally in subsequent years.

Throughout the late 1990s and 2000s, another wave of migrants entered Europe as they fled conflicts in the Middle East, Africa, and Asia. Once again, these immigrants found themselves segregated into neighborhoods and cities that were predominantly foreign, such as Leicester, England. The responsive growth in concern over welfare programs and social services continued to fuel animosity towards these newcomers. This movement, compounded with the collapse of the Soviet bloc in the early 1990s, caused the number of people entering Britain and Western Europe to increase dramatically. The Maastricht Treaty's abolition of borders further fuelled Euroscepticism, as it allowed for easier internal European movements. Due to this increased intra-EU mobility, the number of migrants from other EU countries living in Britain tripled between 1995 and 2015. The accession of the 'A8' Eastern European countries such as Poland in 2004 contributed to one of the most significant increases in EU immigration of the 21st century.

However, despite anxieties regarding pay and employment opportunities, a Brexit Analysis report by the Centre for Economic Performance (CEP) argued that increased immigrant populations often lead to more consumption of goods and services, thereby increasing demand and creating more jobs. The report initiated discussions that contradicted the growing belief that immigration poses more negative economic challenges than positives. Statistically, it was reported that areas with the most significant growth in immigrant populations did not account for the greatest declines in job opportunities. Instead, the wage collapse of 2008 was attributed to the "global financial crisis and a weak economic recovery, not immigration." The analysis continued to discredit popular far-right thought by pointing out that EU immigrants tend to contribute more to taxes than they draw from social welfare and public service programs. Regarding intra-EU migration, for example, a study found that between 2001 and 2011, A8 immigrants paid approximately 15 billion euros more than they received from public spending. Furthermore, concerning refugees, the CEP claimed that the Syrian refugee crisis was less related to EU membership than commonly thought. Because there was already a cap on the number of refugees allowed into Britain and because the then-current policy prohibited refugees in other EU countries from living or working in the UK, Brexit reportedly would not make curbing the refugee crisis any easier.

Conclusively, although the report acknowledged that immigration had not recently had major positive effects on Britain, there also had not been major consequences for native citizens or the country as a whole. The article emphasized the importance of these immigrants in reducing the deficit through work, taxes, and their commonly younger demographic. Specifically concerning intra-EU migration, the article predicted a negative overall impact on the national level when such migration declines.

As Britain continues the process of seceding from the European Union, the free movement of EU citizens will cease, leaving non-British citizens in the UK to wonder about their future. However, the government has promised the implementation of a new system based on Australia’s "point-based program." This program aims to attract more educated and highly skilled citizens to fuel the shifting economy. As of January, migrants make up a little over 15% of the total British workforce, with their numbers spread across varying sectors and skill sets. Certain industries, including construction, hospitality, and manufacturing, have become increasingly reliant on this migrant workforce. Britain’s cherished NHS itself has consistently relied on foreigners to supply vast numbers needed in their daily operations, ranging from doctors to support staff. In London alone, more than 25% of NHS operations are conducted by foreign staff. Therefore, as employers and industries raise concerns regarding future gaps and vacancies caused by Brexit, much of the government's focus has shifted to planning ways to supplement these industries as immigration and citizenship policy is restructured. Starting in January 2021, this new system will treat EU and non-EU citizens equally and will specifically focus on those with the most potential to benefit the British economy. Skilled workers who are sponsored by a government-approved employer and who meet certain skill, language, and salary requirements will be offered a streamlined path towards citizenship. However, for low-skilled workers, no specific immigration plan has been introduced nor will be. Though seasonal agricultural immigration will be permitted, as this sector relies heavily on temporary, low-skilled employees, the lack of specific planning has been met with many open-ended questions regarding the future of other industries.

Policies regarding asylum-seekers and refugees have sparked concern. In 2019, the EU Home Affairs Committee published a detailed report on the potential implications of asylum policies and offered recommendations on how to best combat these issues. Such recommendations included a continuous agreement on standards and procedures at a minimal level as well as shared access to certain security data. A key point of contention in this document revolved around the United Kingdom's Home Office's plan to send asylum seekers back to their initial European entry country. This plan was highly criticized by UK Member of Parliament Claude Moraes, who argued that "Brexit should not be at the expense of asylum seekers and their children." Rather, Moraes emphasized the necessity of Britain and the European Union to share responsibility throughout this process. Specifically stressing the possible complications this plan would have for children, Moraes adamantly opposed any policy which would hinder the possibility of familial reunification or child security. Instead, Moraes encouraged further negotiations to establish a process more synonymous with the Dublin regulation, which would allow for easier and more efficient family reunification. Whether Britain will take this recommendation into account will drastically shape the future of policy surrounding asylum seekers and refugees both in Britain and Europe.

Ultimately, the impact of immigration historically and currently has had profound impacts on British political thought, policy, and international relations. Although the British government remains hopeful that this decision will benefit the country's economy, there are evident ramifications which could pose a threat to Britain. Negotiating a new trade agreement could potentially increase tariffs and thus generate undesirable inflation; the cost of both travel and communications may rise, and the new restrictions on the movement of people may pose serious threats to the labor force and economy. In addition, the "Divorce Bill," which established a series of payments that the UK must make to the European Union, will be a financial burden for the country in the coming years. Totalling nearly 35 billion euros, this money will be funneled into the 2020 EU budget, pay for previous financial commitments, and help to cover the staffing costs incurred throughout the Brexit process. Most of this money will be paid through installments over the next six years, though a smaller portion will extend until 2064. This payment plan is part of the withdrawal agreement which is hoped to ensure a smoother economic transition for both Britain and the European Union.

Expected Results of Brexit

This paper primarily focuses on the period before the Trade and Cooperation Agreement (TCA) came into force in 2021. In terms of policy, economic integration between the UK and the EU remained unchanged during this period. However, the Brexit referendum immediately impacted the economy by altering expectations. This shift affected both the first and second moments of belief about economic policy. The anticipated future openness of the UK to economic exchanges with the EU decreased (the first-moment news shock), while uncertainty regarding both the future of UK-EU relations and the UK's domestic economic policy increased (second-moment uncertainty shock). This section aims to explore the anticipated economic consequences of Brexit and how the Leave vote influenced uncertainty throughout the UK's economy.

The prevailing consensus among most researchers, policy institutions, and businesses is that Brexit will have a negative long-term impact on the UK economy. This is expected to occur through heightened barriers to trade, migration, and investment between the UK and EU. While EU countries are also anticipated to incur costs, these are typically projected to be smaller than the losses experienced by the UK due to the EU's lesser dependency on UK-EU trade. This consensus is rooted in historical evidence, such as the impact of the UK joining the European Communities in 1973, simulations of Brexit using general equilibrium trade and investment models, empirical gravity analysis of EU membership effects on trade and income, and surveys of businesses' expectations. Despite this consensus, the Leave campaign dismissed these concerns as "project fear" without delving into the substance of the economic arguments.

There is considerable disagreement regarding the projected costs of Brexit. The Office for Budget Responsibility (2020) presents 13 estimates of the long-term impact on UK productivity assuming trade between the UK and the EU is regulated by a free trade agreement. These estimates range from a decline of 1.8% to 6.4%, with one outlier being a 10% decrease. These declines are anticipated to manifest over approximately a decade. The variation in projected outcomes reflects uncertainties surrounding the extent of trade costs arising from non-tariff trade barriers in a free-trade agreement, as well as differences in modeling approaches. Studies incorporating dynamic effects of trade on production technologies often suggest losses that are two to three times greater than those predicted by static trade models. Van Reenen (2016), Sampson (2017), and Campos (2019) provide comprehensive reviews of the literature on the long-term economic ramifications of Brexit.

Looking at the short-term, most forecasters anticipated that a vote to Leave would dampen UK growth even before the actual exit from the EU. These projections were driven by the belief that increased uncertainty and adjustments to expected future disintegration would curtail investment and final demand. For instance, Baker et al. (2016) predicted an immediate 20% devaluation of the pound and forecasted a reduction of UK GDP of approximately 1% in 2017, followed by a slightly over 2% decrease in 2018. They also foresaw double-digit drops in investment for both years. In essence, these forecasts qualitatively align with the observed impacts of the Leave vote as detailed in Sections 5 and 7 (*Financial Times (2018, 2019) analysis of short-run Brexit forecasts concludes that, although the slowdown in UK growth took longer to materialize than predicted, independent forecasts performed well from 2017 onwards. But politically motivated forecasts by HM Treasury (too pessimistic) and Economists for Brexit (too optimistic) performed poorly).*

The significant spatial inequality within the UK spurred interest in predicting the regional impact of Brexit (McCann 2018). However, studies employing various theoretically-grounded measures of Brexit exposure offer conflicting conclusions regarding which regions will bear the brunt of its effects. Dhingra, Machin, and Overman (2017) assess Brexit's impact on local gross value added by combining sector-specific estimates of future trade barrier effects at the national level with sectoral employment shares across local authorities and metropolitan areas. They find that regions with larger service sectors, such as London and the southeast, are likely to experience more pronounced impacts. Conversely, employing regionalized input-output tables to gauge the proportion of domestic value-added linked to UK-EU trade, Chen et al. (2018) discover that economically disadvantaged areas in the Midlands and the North of England face higher exposure to Brexit.

Surveys capturing private sector sentiments toward Brexit offer valuable insights into firms' expectations regarding future policy and economic outcomes. Pre- and post-referendum surveys conducted by the Confederation of British Industry reveal a notable increase in businesses expressing negative expectations regarding future output changes following the Brexit vote (Costa, Dhingra, and Machin 2019). Subsequently, the Bank of England established the Decision Maker Panel (DMP), which collects monthly data on businesses' expectations through surveys of financial officers across a representative sample of UK firms. DMP findings indicate that firms perceive Brexit as a significant source of uncertainty and, on average, anticipate a decline in future sales and investment. Utilizing DMP data on sales expectations, Faccini and Palombo (2021) calibrate how firms expect Brexit to impact productivity distribution. Their calibration suggests that if Brexit were to lead to UK-EU trade under WTO terms, it would result in a long-run reduction of UK GDP by 7.6 per cent.

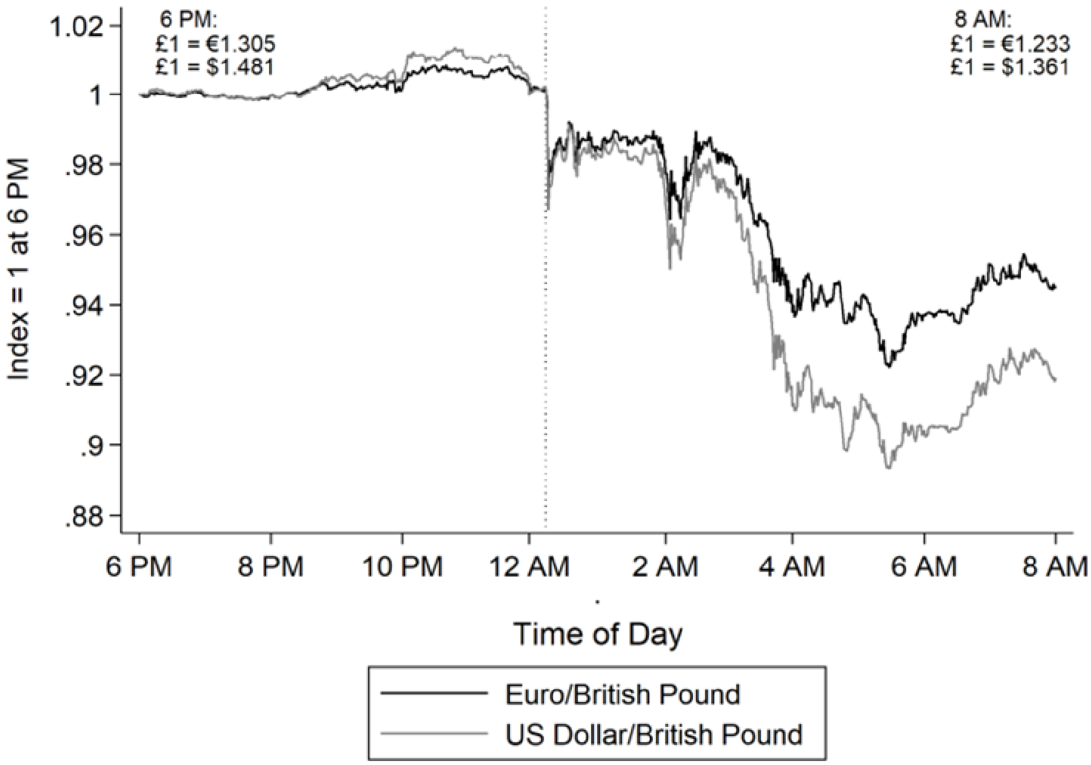
The DMP also facilitates the creation of a Brexit Uncertainty Index, calculated by determining the proportion of respondents who identify the referendum outcome as either the primary or one of the top two or three sources of uncertainty impacting their business. This index saw a significant surge, surpassing 50 per cent, in late 2018 and early 2019 during parliamentary discussions and subsequent rejection of the Withdrawal Agreement negotiated by Theresa May's government. It experienced another peak during the latter half of 2019 when Boris Johnson's government contemplated the prospect of exiting the EU without a deal, and again in September 2020 following the UK's threat to violate commitments outlined in the Withdrawal Agreement.

While researchers and members of the business community anticipate negative economic repercussions from Brexit, the expectations of voters are more varied. Before the referendum, the British Election Study inquired about how leaving the EU would impact the UK's 'general economic situation'. Curtice (2017) reveals that 23 per cent of respondents believed that departure would have a positive economic outcome, while 35 per cent anticipated negative consequences and 32 percent expected no significant change post-Brexit. Intriguingly, 90 per cent of those who anticipated an improvement in the economy due to Brexit voted to Leave, whereas 93 per cent of those who foresaw negative economic effects opted to Remain. Although this data doesn't establish the causal relationship between economic expectations and support for Brexit, it underscores the stark differences in perceptions regarding the economic ramifications of Brexit between Leave and Remain voters.

Financial Markets

The initial economic impacts of the Leave vote were evident in financial markets. As depicted in Figure 1, the value of the pound began to decline on the evening of the referendum, coinciding with early results from Sunderland—a northern industrial town—indicating a surprisingly substantial victory for the Leave campaign. As the referendum outcome became increasingly certain, sterling witnessed the most significant overnight drop among the four major world currencies since the adoption of floating exchange rates in the early 1970s (Costa, Dhingra, and Machin 2019).

Fig. 1 Sterling depreciation on referendum night



The day following the referendum, the FTSE 100 stock market index experienced a 3.8 per cent decline, while the pound depreciated by 8.1 per cent against the US dollar and 5.8 per cent against the euro (Breinlich et al., 2022). Despite initial setbacks, stock prices swiftly rebounded with support from relaxed monetary policies, although UK stock indices exhibited slower growth compared to their US and German counterparts in the year following the referendum (Gourinchas and Hale, 2017). Conversely, the pound continued to depreciate, especially following Theresa May's announcement during a Conservative party conference speech in October 2016 indicating the UK's intention to leave the Single Market. Furthermore, the depreciation of the sterling persisted, hovering around 10 per cent below its pre-referendum value over the subsequent two years. Gourinchas and Hale (2017) argue that this depreciation stemmed from market expectations that Brexit would hamper future economic growth in the UK. The impacts of this depreciation on consumers, firms, and workers are discussed in Sections 5 and 6.

Event studies analyzing stock returns around the time of the referendum provide further insights into market expectations regarding Brexit. The key finding of these studies is that the Leave vote had a detrimental short-term impact on the stock prices of firms more exposed to the UK market and susceptible to the depreciation of sterling. Ramiah et al. (2017) observe that the banking, travel, and leisure sectors bore the brunt of these negative effects. Additionally, Davies and Studnicka (2018) demonstrate that FTSE 350 companies with a higher proportion of affiliates in the UK and, to a lesser extent, the EU, experienced lower-than-anticipated returns. Conversely, their analysis of the German HDAX index, which also experienced a significant decline post-referendum, reveals no correlation between returns and the proportion of EU affiliates. This finding aligns with predictions suggesting that Brexit will disproportionately impact the UK compared to other EU countries (Dhingra et al., 2017).

Breinlich et al. (2018) discovered that UK-listed stocks in sectors less susceptible to fluctuations in the business cycle exhibited returns higher than expected, indicating investor concerns about a potential growth slowdown. They also observe that firms reporting earnings in sterling experienced lower-than-expected returns. Interestingly, Breinlich et al. do not uncover evidence suggesting that variations in anticipated increases in trade barriers influenced returns in the days following the referendum. Returns demonstrate no correlation with sector-level metrics of the EU's Most Favored Nation (MFN) tariffs or its limitations on services trade with non-member states. However, there is some indication that the MFN tariff metric is linked to decreased returns after May's Conservative Party conference speech in October 2016. This speech marked the initial official announcement of the UK's intention to depart from the EU's Single Market and Customs Union, a decision heightening the likelihood of future UK-EU trade being subject to tariffs.

Fisman and Zitzewitz (2019) devise a 'long-short' index of stocks that outperformed or underperformed the market on the day following the referendum, then monitor the index returns' progression to assess whether initial market expectations materialize. They observe that in July 2016, returns increased following events that heightened the likelihood of a Leave supporter winning the race to succeed Cameron as Prime Minister. However, they also note that by the end of 2016, the index reverted to its pre-referendum value, indicating that over time, Brexit became a less significant factor influencing investors' profit expectations.

Consumer and border prices

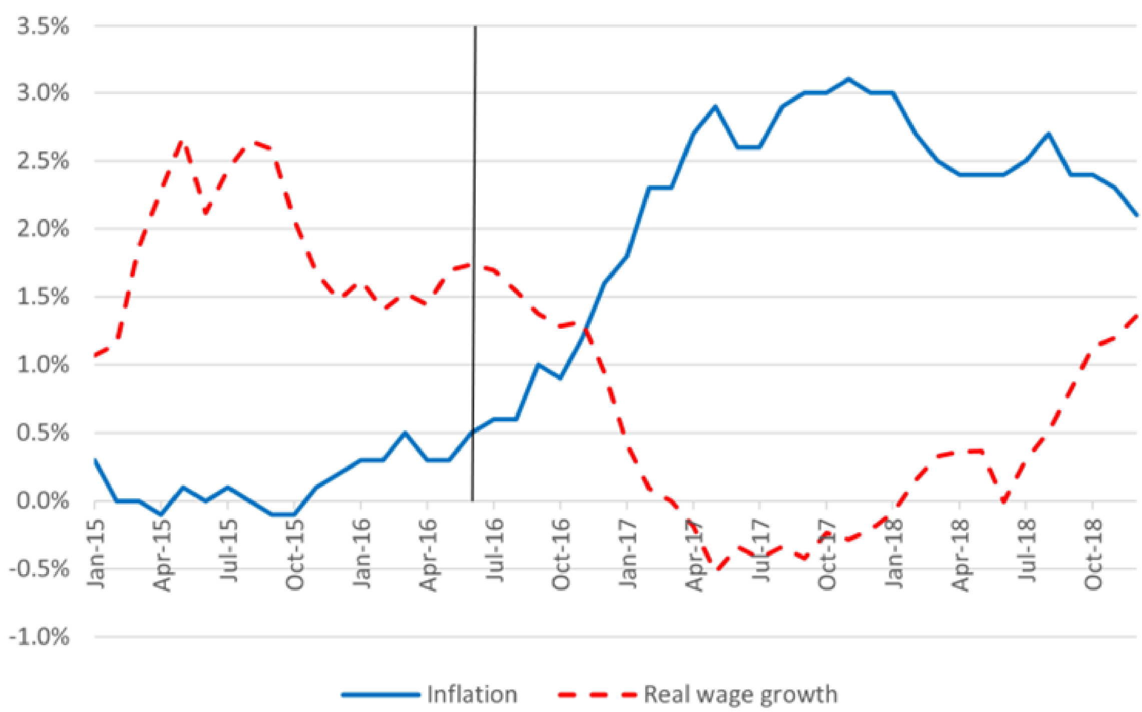
Several studies have utilized the depreciation of sterling following the Leave vote as a quasi-experimental shock to estimate the price effects of exchange rate movements. A consistent observation from this research is the high pass-through rate from the depreciation of UK border and consumer prices. Consequently, the medium-to-long-term price effects of the Brexit-related depreciation are effectively approximated by considering the UK as a small, neoclassical economy.

Breinlich et al. (2022) examine the impact of the depreciation on the cost of living. Their methodology leverages differences across product categories in the import share of consumer spending, considering both directly consumed imports and imported inputs utilized in domestic production. They construct an import share metric from UK input-output tables, which understandably tend to be higher for tradable goods like food or clothing compared to services such as restaurants or education. However, even services categories exhibit positive import shares because they rely on inputs from sectors utilizing imported intermediates.

Following the referendum, UK Consumer Price Index (CPI) inflation surged rapidly from 0.5 per cent in June 2016 to its peak at 3.1 per cent in November 2017, as illustrated in Figure 2. Breinlich et al. demonstrate, using an event study framework, that the inflationary spike is more pronounced for product groups with higher import shares. Additionally, they find that producer prices for goods sectors rose more in industries with a larger proportion of imported inputs in domestic production costs. These findings support the notion that the increase in inflation was driven by the depreciation of sterling. The study also calculates pass-through from the exchange rate to consumer prices, with pass-through varying across product groups with differing import shares. The results indicate a complete long-run pass-through contingent on the import share, implying that a 1 percent depreciation results in a 0.1 per cent greater price increase for product groups with a 10 per cent higher import share.

These findings suggest that the depreciation resulting from Brexit led to a significant upsurge in UK consumer prices. Assuming that prices for product groups with zero import share remain unaffected by the exchange rate, the estimates indicate that aggregate pass-through to consumer prices corresponds to the import share of overall consumer expenditure, which stands at 29 per cent in the UK. Consequently, the approximately 10 per cent decline in sterling after the referendum elevated consumer prices by 2.9 per cent, with the full impact unfolding over approximately two years. This substantial rise in the cost of living represented the primary conduit through which the economic repercussions of voting for Brexit were widely experienced, contributing to a marked decline in real wage growth from 1.7 per cent in the year leading up to June 2016 to 0.1 per cent per year between June 2016 and June 2018 (refer to Figure 2).

Fig. 2 UK inflation and monthly wage growth; monthly 2015-2018



Breinlich et al.'s (2022) findings align with evidence on border price movements derived from transaction-level customs data. Chen, Chung, and Novy (2021) investigate how pass-through to UK import prices varies depending on the currency used for invoicing transactions. They argue that considering vehicle currency invoicing is crucial in explaining the extent of the short-term increase in import prices following the referendum. Similarly, Corsetti, Crowley, and Han (2020) discovered that import prices invoiced in sterling exhibited a slower adjustment to the depreciation compared to producer or vehicle currency transactions. Nevertheless, approximately 36 weeks post-referendum, sterling prices had fully adapted to the weaker pound, irrespective of the invoicing currency, indicating rapid and complete pass-through of the depreciation into higher import costs.

Remarkably, Corsetti, Crowley, and Han also observe a nearly complete pass-through of the depreciation of export prices. They calculate that the sterling price of exports invoiced in local and vehicle currencies swiftly increased, mirroring the depreciation at a one-to-one ratio, resulting in a negligible impact on local prices in destination markets approximately six weeks thereafter. Export prices invoiced in sterling exhibited a slower response to the depreciation. Nonetheless, the perceived competitive advantage for UK exporters did not translate into an increase in export volumes, and the price of sterling-invoiced exports fully reflected the depreciation after approximately 18 months (Ayele and Winters, 2020; Corsetti, Crowley, and Han, 2020). These findings suggest that while the border price response to the Brexit depreciation escalated import costs, it did not confer any enduring advantage in price competitiveness to UK exporters in the long run.

Analyzing Portuguese customs data, Fernandes and Winters (2021) investigate the impact of the depreciation on the price of Portuguese exports to the UK. They assess price effects within firm-product-destination combinations by comparing changes in unit values before and after the referendum. Their findings suggest that the average euro-denominated export price to the UK decreased by approximately 2 to 2.5 per cent following the referendum, with more significant price declines observed for more productive exporters. This observation of pricing-to-market behavior by Portuguese exporters aligns with existing literature indicating that larger firms face less elastic demand and adjust mark-ups more substantially following exchange rate shocks (Berman, Martin, and Mayer, 2012). However, the authors note that given the roughly 10 percent depreciation of sterling, their results imply a high short-term pass-through of the exchange rate into sterling-denominated UK import prices. Furthermore, their event study estimates reveal that the decline in Portuguese export prices only persisted for about six months. Over longer time horizons, euro-denominated prices remained unaffected by the Brexit referendum, indicating a complete pass-through of the depreciation into UK import prices.

A critical aspect to consider in evaluating these studies is their external validity. The Brexit depreciation represented an unusually substantial and prominent exchange rate shock, driven by news regarding future policy rather than a shift in current economic conditions, such as an economic crisis, which often triggers significant depreciations. Burstein, Eichenbaum, and Rebelo (2005) provide evidence indicating that prices of tradable goods exhibit greater responsiveness to exchange rate movements following large devaluations compared to smaller fluctuations in exchange rates. Future research could explore whether smaller and less prominent exchange rate shocks yield consumer price pass-through patterns similar to those observed following the Brexit depreciation.

Labour Markets

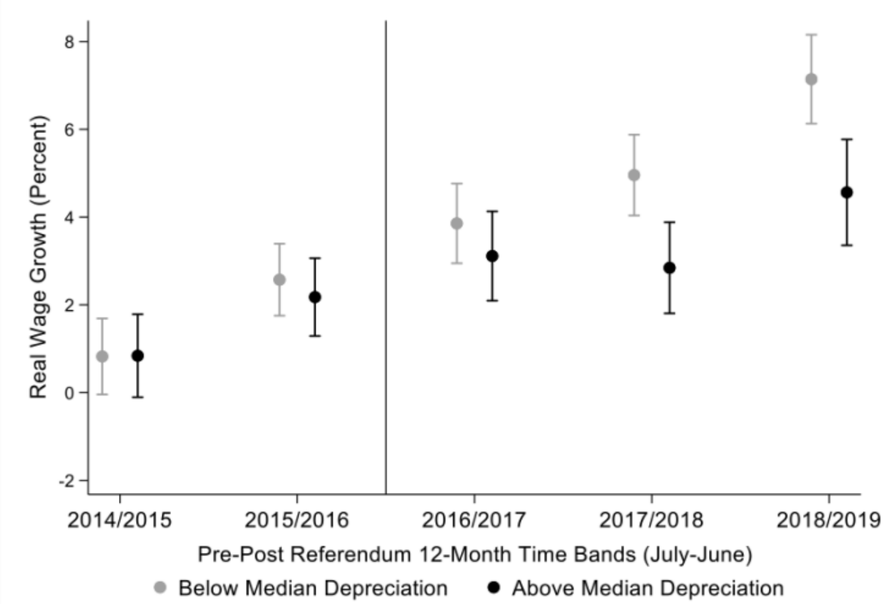
The impact of Brexit on employment emerged as a focal point in the Brexit campaign, closely intertwined with discussions regarding the labor market implications of EU immigration. Notable Leave proponents contended that new trade agreements with non-EU countries could generate 400,000 jobs (Daily Mail, 2017), while short-term government projections estimated potential job losses of approximately half a million in the event of a Brexit vote (HM Treasury, 2016). Although it remains premature to discern the long-term effects of both Brexit and Covid-19 on workers, researchers have already begun to investigate the immediate consequences of the Leave vote.

While some research suggests that exposure to Brexit may have contributed to slower employment growth (Javorcik et al., 2020; Hassan et al., 2021), studies utilizing representative samples of firms and workers have not identified significant effects (Bloom et al., 2019; Costa, Dhingra, and Machin, 2019). Aggregate data indicates no discernible impact of the referendum outcome on employment growth, with the UK unemployment rate remaining at historically low levels of around 4 per cent before the Covid-19 pandemic. Nonetheless, labor market outcomes other than employment appear to have been influenced by the referendum

The depreciation of sterling within the 24 hours surrounding the Leave vote exhibited variability across currencies, with smaller declines on average against European currencies compared to non-European ones. Costa, Dhingra, and Machin (2019) leverage this observation to assess the effects of depreciation on UK labor market outcomes. Sectors and regions display discrepancies in their susceptibility to sterling depreciation due to variations in their pre-referendum trade partners. Capitalizing on this diversity, they ascertain that the depreciation led to a resurgence of real wage stagnation, primarily affecting service sectors that were more exposed to the shock.

Sectors and regions reliant on imports from countries outside the EU experienced the most pronounced effects due to the substantial depreciation against non-European currencies. Intriguingly, the resurgence of real wage stagnation is primarily attributed to imports of intermediate goods rather than exports or imports of final goods. This is depicted in Figure 3, which categorizes sector-region pairs into groups based on above and below-median intermediate import-weighted exchange rate shocks. Before the referendum, both groups exhibited similar levels of real wage growth. However, following the Leave vote, real wage growth stagnated in sector regions with above-median import levels and did not recover until 2019.

Fig. 3 Brexit depreciation and real wage growth



Costa, Dhingra, and Machin's findings suggest that the upsurge in imported intermediate costs resulting from sterling depreciation was not counterbalanced by revenue gains from increased exports. As a result, real wage growth diminished due to a combination of reduced nominal wages and elevated consumer prices. By calibrating the estimated wage elasticity to conventional economic theory, Costa, Dhingra, and Machin unveil evidence of a production complementarity between imported intermediates and domestic workers. This complementarity is further evident in other adaptable aspects of labor market adjustment, such as job-related education and training, as well as overtime work, all of which experienced negative impacts from the sterling depreciation.

An important aspect of this analysis is its coverage of service sector workers. Despite services constituting the majority of employment in many countries, there is a scarcity of studies on the trade and labor market effects within the services sector. Measurement complexities and the challenge of identifying plausibly exogenous variations in services trade have often constrained previous research to focus on narrow subsets of workers, such as those in manufacturing sectors or those influenced solely by trade in goods, to achieve causal identification (Hummels et al., 2016). The significant sterling depreciation triggered by the Brexit vote represents a rare, unforeseen shock applicable to both goods and services, offering a unique opportunity to comprehend the impact of trade on all workers.

Javorcik et al. (2020) propose an alternative approach to utilize Brexit as a means to illuminate the labor market and regional effects of services trade. Their study examines the anticipated rise in services trade barriers due to Brexit and its impact on online job postings, drawing on data spanning from 2015 to 2019 from Burning Glass Technologies. Their measure of expected trade barriers relies on the OECD's Services Trade Restrictiveness Index (STRI) for professional services exports to 24 EU countries. Following the precedent set by influential literature on trade policy uncertainty, Javorcik et al. compute the discrepancy between pre-referendum STRIs with countries outside the EU and those within the EU's Single Market. This STRI gap serves as a destination-specific proxy for the anticipated escalation in trade barriers that UK exporters would encounter outside the Single Market. It is then combined with sectoral data on UK exports per worker to derive a sector-level gauge of trade policy uncertainty, which is subsequently interacted with pre-referendum employment shares to generate a shift-share metric of regional exposure to Brexit. Their primary finding indicates that regions more vulnerable to potential trade barriers in professional service exports witnessed a more pronounced decline in online job advertisements following the referendum, particularly for higher-skilled positions.

Despite its prominence during the referendum campaign, there has been limited investigation into the impact of the Leave vote on immigration thus far. Wadsworth et al. (2016) and Wadsworth (2018) provide an overview of the key topics discussed in the lead-up to the referendum, ultimately concluding that immigration from the EU had minimal effects on native labor market outcomes and had limited if any, impact on access to public services. Additionally, immigrants from the EU were found to make a positive net contribution to UK government finances.

There is documented evidence of a significant decrease in net migration to the UK from EU nations following the referendum (Wadsworth, 2018; Portes, 2021). However, the accuracy of this assessment is obscured by inconsistent data collection methods and the complicating effects of the COVID-19 pandemic, making it challenging to gauge the magnitude of the decline (Manning, 2021). Additionally, the UK has relaxed immigration restrictions for countries outside the EU (Portes, 2021), potentially leading to an increase in skilled migration from non-EU countries. Anticipated labor shortages reported by UK firms in real-time surveys conducted in 2021 suggest that immigration is likely to become a focal point of future research (De Lyon and Dhingra, 2021a).

Trade

In the foreseeable future, Brexit is poised to significantly diminish the EU's portion of UK trade. For instance, Bevington et al.'s (2019) analysis, employing the trade model crafted by Dhingra et al. (2017), projects that a free trade agreement akin to the TCA would precipitate a roughly one-third decrease in UK-EU trade and a 13 percent drop in overall UK trade. However, prior to the enactment of the TCA at the onset of 2021, trade barriers remained unchanged. During this interim period, the Leave vote impacted trade through two avenues: altering expectations regarding future trade policies and precipitating the depreciation of sterling subsequent to the referendum. Examining UK trade before the TCA agreement offers insights into both the trade repercussions of exchange rate fluctuations and, notably, how trade reacts to an anticipated yet uncertain unraveling of deep economic integration.

All other factors being equal, the depreciation of the sterling would be anticipated to bolster UK exports and curtail imports by lowering the relative cost of domestically manufactured goods. In fact, according to Broadbent et al. (2020), the Leave vote engendered a transient advantageous position for the UK's tradable sector, wherein producers reaped the benefits of the currency depreciation without yet encountering elevated trade barriers. Supporting this assertion, they demonstrate that the overall value of UK exports relative to GDP surged immediately following the referendum, and that the tradable segment of the UK economy expanded in comparison to the non-tradable sector from the time of the referendum until the conclusion of 2018. However, they abstain from dissecting alterations in the value of trade into price versus volume impacts.

Research conducted by Fernandes and Winters (2021) utilizing Portuguese data indicates that the Leave vote resulted in a reduction of UK imports across both the intensive and extensive margins. Their findings suggest that the outcome of the referendum led to a decrease in imports from Portugal by approximately 5-7 percent in the year following the vote, with approximately two-thirds of the decline attributed to reduced import quantities. However, their analysis does not provide insights into the underlying cause of this decline, which could be attributed to either the appreciation of the euro relative to sterling or shifts in expectations regarding future trade barriers between the UK and Portugal. Similarly, Martin, Martinez, and Mejean (2019) estimate that the Leave vote precipitated a 1.2 percent decrease in the number of new buyer-seller relationships between French exporters and UK importers. However, they do not uncover evidence of a decline in the value of French exports to the UK following the referendum.

Research conducted by Ayele and Winters (2020) indicates that the depreciation of the sterling did not lead to an increase in the volume of UK exports. Studies utilizing synthetic control methods suggest that, if anything, the referendum resulted in a decrease in aggregate UK import and export growth compared to other countries when trade is measured using a common currency (Du and Shepotylo, 2021; Springford, 2021). However, this decline could partly be attributed to short-term price rigidity in sterling-denominated prices along with the deceleration in UK output growth. The absence of an export surge aligns with findings discussed in Section 5, indicating that the depreciation elevated average import and export prices, thereby raising the cost of imported intermediate inputs without yielding a sustained improvement in price competitiveness for UK exporters. Nevertheless, there remains ample opportunity for further investigation into how UK firms responded to the currency depreciation.

An additional aspect of the literature aims to uncover the effects of Brexit anticipation on trade. Studies in this area yield divergent findings across various levels of aggregation and trade dimensions. Some research indicates a negative impact of the referendum on trade, particularly for products vulnerable to potential increases in trade barriers due to Brexit (Crowley, Exton, and Han, 2019; Ahmad et al., 2020; Graziano, Handley, and Limao, 2021). However, despite these findings, the EU's share of total UK trade has remained steady, and it is challenging to discern any evidence suggesting that the growth in UK-EU trade since the referendum has been slower for products more susceptible to Brexit-related risks (Freeman et al., 2021).

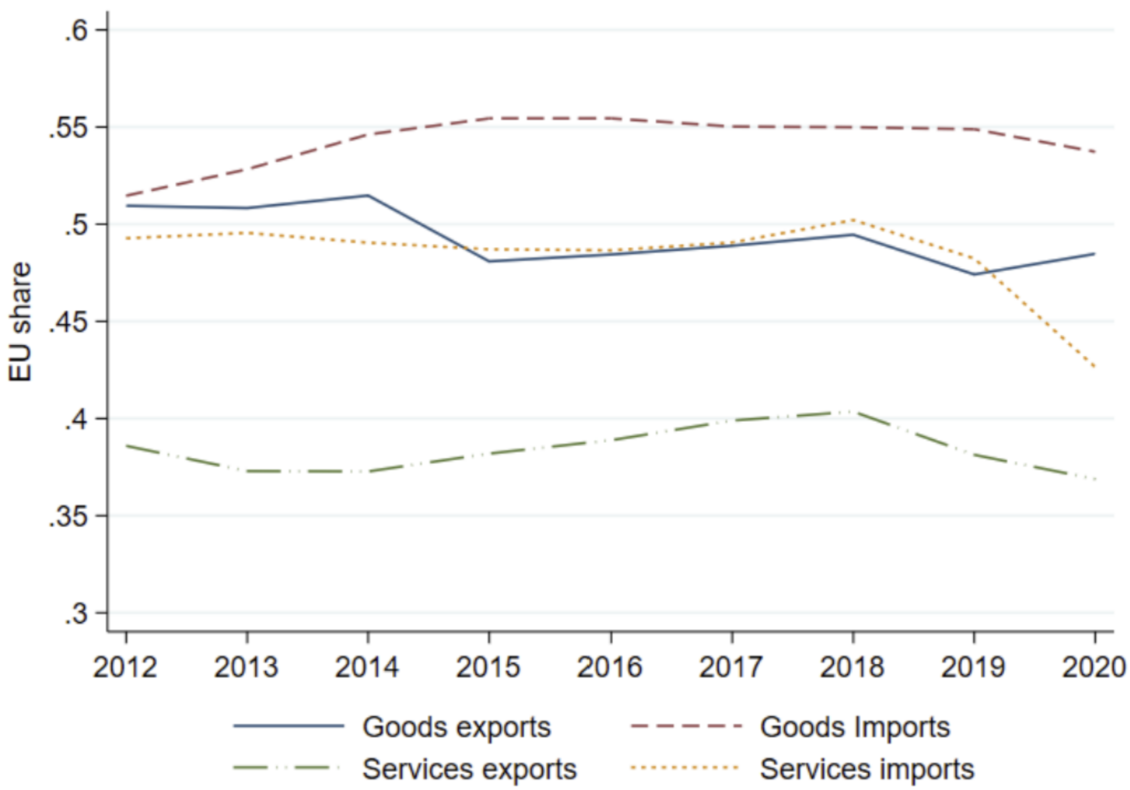
Graziano, Handley, and Limao (2021) demonstrate that Brexit-related uncertainty impacted UK goods trade even before the referendum. Employing prediction market contract prices as a dynamic measure of the likelihood of a Leave vote, the study examines whether fluctuations in the probability of a Brexit outcome influenced the relative trade dynamics of products with varying levels of exposure to Brexit risk. To gauge the extent of Brexit exposure across products, the authors utilize the EU's Most Favored Nation (MFN) tariffs, serving as an observable proxy for the anticipated effect of Brexit on both the expected future UK-EU trade costs' initial and variance. A higher EU MFN tariff signifies a heightened expectation of a tariff escalation on UK-EU trade post-Brexit, particularly if the UK and EU engage in trade under World Trade Organization (WTO) terms (reflecting first-moment trade policy exposure), along with increased uncertainty surrounding future tariff levels (representing second-moment exposure).

Analyzing monthly trade data for HS 6 digit products spanning from August 2015 to June 2016, Graziano, Handley, and Limao observe that an escalation in the likelihood of a Leave vote led to a decline in UK-EU trade concerning products subject to higher EU MFN tariffs. This impact is evident across both exports and imports, encompasses product-level entry and exit, and remains consistent when comparing shifts in UK-EU trade to trade interactions with third countries. In a related study, Douch and Edwards (2021) employ the synthetic control method to scrutinize bilateral UK trade flows. They contend that the anticipation of Brexit resulted in diminished UK exports to the EU (and to a lesser extent, non-EU countries) in the year leading up to the referendum.

Crowley, Exton, and Han (2020) also utilize the EU's MFN tariffs as a product-level gauge of Brexit exposure. However, they delve into alterations in goods trade immediately post-referendum by analyzing UK customs data at the firm-CN 8 digit product level. Concentrating on the extensive margin, they discover that the referendum induced a reduction in entry and an augmentation in exit for EU exports in products facing higher MFN tariffs and those subjected to import quotas by the EU. Assuming that products facing a zero tariff threat were unaffected by the referendum's impact on entry or exit, their estimations indicate that the Leave vote caused a 5.0 percent reduction in entry and a 6.1 percent increase in exit in 2016. Nonetheless, the authors exercise caution, noting that the aggregate statistics do not indicate a decline in aggregate export value or the number of exporters to the EU in 2016, a trend potentially attributed to robust entry growth for products unaffected by tariff threats.

While much research has centered on goods trade, Ahmad et al. (2020) adapt the identification strategy of Graziano, Handley, and Limao (2021) to examine trade in services, which contribute nearly half of UK exports. Ahmad et al. utilize quarterly data spanning 2016-18 across 12 services sectors and gauge Brexit exposure by industry using fluctuations in "restrictions to foreign entry" from the OECD's Services Trade Restrictiveness Index. According to their metric, industries with the highest Brexit risk exposure include air and sea transportation, finance, and insurance, while architectural, engineering, scientific, audiovisual, and computer services exhibit the lowest exposure. In alignment with Graziano, Handley, and Limao (2021), they observe that heightened probabilities of Brexit are linked to reduced UK-EU trade in industries with greater Brexit exposure.

These studies collectively offer compelling evidence that trade patterns reacted to Brexit-induced alterations in anticipations regarding future trade barriers. However, the extent of these reactions was not substantial enough to provoke a discernible alteration in the overall landscape of UK trade. As depicted in Figure 5, the EU's portion of UK trade remained largely stable from the time of the referendum until the onset of the Covid-19 pandemic. Specifically, for goods trade, it stood at 52.4 percent in 2015 and dipped only marginally to 51.7 percent in 2019, while for services trade, it hovered around 42.3 percent in 2015 and 42.2 percent in 2019.



A more intricate analysis akin to this comparison is conducted by Freeman et al. (2022), who scrutinize UK goods trade data starting from 2013. Employing EU and non-EU trade as controls, they aim to mitigate UK-specific supply and demand shocks that might uniformly influence trade with all partners. Furthermore, they utilize US trade data to offset export supply and import demand fluctuations in partner nations. Interestingly, Freeman et al. find no discernible impact of the referendum on bilateral UK-EU trade from 2016 to 2020. Moreover, they observe no indications of divergent alterations in the value of EU trade, neither for products subject to higher EU MFN tariffs nor for those encountering more non-tariff measures, as per the UNCTAD TRAINS database.

This sustained stability aligns with the forecasts outlined by Steinberg (2019), who configures a dynamic trade model incorporating uncertainties surrounding whether the UK will maintain its position within the Single Market post-Brexit or transition to WTO terms for trading with the EU. A notable aspect of his model is its capability to simulate both short and long-term Brexit effects within a cohesive framework. According to Steinberg's simulations, the Leave vote exerts minimal impact on trade until the actual Brexit implementation; however, once trade barriers escalate, UK-EU trade undergoes a steep decline. Additionally, Steinberg's analysis indicates that the secondary moment uncertainty shock contributes insignificantly to the overall welfare costs associated with Brexit.

Future Research

The Brexit vote led to the UK leaving the world's deepest economic integration agreement. Studying the resulting economic shock provides new evidence on the impact of trade policy changes. In this review we have summarized research analyzing the short run effects of the referendum. But the UK's eventual departure from the EU has now opened up a new set of research questions.

Although it may take a decade or more for the long-run effects of Brexit to materialize, we hope that future work will inform important questions such as: the quantitative impacts of deep economic integration; the importance of market access for services trade, investment flows and the geography of supply chains; the speed and margins of microeconomic adjustment to higher trade barriers; the impact of disintegration on innovation and productivity, and; the costs, benefits and political economy of regulatory sovereignty.

Better understanding the short and long run impacts of Brexit on pre-existing regional inequalities in the UK is also likely to be important, particularly given the regional divides in support for Brexit and the ambition of successive UK governments to 'level-up' poorer regions. At the same time, the uncertainty Brexit has created over the future relationships of Scotland and Northern Ireland with the rest of the United Kingdom raises new questions about the links between domestic and international integration, while the Irish Sea border between Britain and Northern Ireland provides a rare opportunity to study the impact of customs checks on domestic trade. There is also scope for insightful sector-specific studies of how industries adapt to higher trade costs and which non-tariff barriers are the most costly. Systematic analysis of how leaving the single market has affected sectors such as financial services, research and development, and transportation would start to open up the black box of non-tariff barriers.

Finally, future research should devote more attention to a topic that is conspicuous by its neartotal absence from this article: immigration. Despite the fact that migration seems to have responded to the Leave vote more quickly than trade flows, the economics literature is yet to probe the causes or consequences of post-referendum changes in migration, or to analyze the extent to which Brexit and Covid-19 have contributed to widespread reports of UK labor shortages during 2021. In this and other areas the policy changes Brexit has generated will provide fertile ground for research for years to come.