

Brexit, Sectors and Trade Flows

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This document is a synthesis of the analyses included at this MEEO report on Brexit, Sectors and Trade flows developed by Cambridge Econometrics and CityREDI. At the end of the document a discussion section has been included reflecting on the analysis presented here and additional material coming from other external sources.

Sectors and Trade Flows

Our sectoral and trade analysis is based on the EURegio database. The EURegio database covers the interregional trade relationships between 14 sectors and 240 EU NUTS2 regions (Nomenclature of Territorial Units for Statistics) for the period 2000-2010 (Thissen et al., 2018). Our analysis uses the most recent data available at this moment.

Throughout the UK, industries are deeply interconnected with those in the rest of the EU through complex cross-border supply chains. Such supply chains comprise intricate processes of value-adding by firms in different countries, with component goods and services crisscrossing borders multiple times before reaching the final consumer (Bailey et al., 2018). Our research allows us to understand the role in shaping UK regional trade behavior which is played by global value-chains, whereby goods and services crisscross borders multiple times before being finally consumed by household and firms. Our trade related effects based on input-output analysis, considers the global fragmentation of production processes by including information on intermediates as well as final goods. Our data allows us to examine the impacts of different trade scenarios and to map out the sensitivity of UK sectors and regions to different post-Brexit scenarios.

The analysis shows that East Midlands and West Midlands regions are heavily dependent on trade in a series of non-services sectors such as manufacturing goods. Both regions are heavily dependent on trade relationships with the EU, in particular for import activity. In the case of exports outside the UK, both regions have a very similar sectoral distribution with more than 60% of the exports having an EU country as the destination country. Both regions display similar import trade dependency from EU countries. Between 60% and 68% of the regional imports in these regions come from the EU countries, with West Midlands being the region

with the highest EU trade dependency in imports. Sectorally, the distribution of exports to the EU is very similar in both regions. Agriculture, Mining-quarrying and energy supply; Food beverage and tobacco; Textiles and Leather; Coke, Petroleum, fuels and chemicals; Electronic, Optical Equipment and transport equipment; Construction; Real estate, renting and business activity are all characterized by more than 60% of the regions' exports leaving to the EU countries.

Meanwhile, the bilateral trade relationships between West and East Midlands show a trade surplus for East Midlands. The East Midlands region exports more to the West Midlands than the other way around. In terms of volume, the top two bilateral trade relationships between these the West Midlands to East Midlands comprise services imports and exports or Real estate, renting and business activities.

The Midlands regions are heavily dependent on imports coming from Inner London (around 25 and 20% of the imports in West and East Midlands respectively). Both regions display a similar sectoral distribution of their imports and exports, and both regions export more to geographically closer areas within the UK.

Brexit analysis

In general, Brexit analyses (CBI, 2019; Chen et al., 2018; KPMG, 2018; Thissen et al., 2019) show that the UK economy is heavily dependent on EU trade relationships and therefore the final outcome on the Brexit negotiation will have profound consequences for the Midlands economy and society. In particular, due to its industrial structure the Midlands economies have high levels of vulnerability to Brexit. The sectors that the Midlands regions are specialised in are highly susceptible to the likely outcome of Brexit because they are linked with the presence of potential high tariffs and non-trade-barriers (NTBs).

In order to analyse the levels of exposure to Brexit in the Midlands Engine we rely on two different analyses based on two different methodologies. On the one hand, Cambridge Econometrics uses a top down approach, relying on CE's E3ME model and other local area data (Cambridge Econometrics, 2018). On the other hand, City-REDI uses an Input-Output approach, based on EU Regio (Thissen et al., 2018) interregional trade relationships data to evaluate the level of exposure and competitiveness loss to No-Deal Brexit in the Midlands in

terms of its GDP and Local Labour Income based on the approach already pioneered (Chen et al., 2018; Thissen et al., 2019).

Our section also includes a comprehensive illustration of the regional and sectoral trade flows into and out of the Midlands regions including information of the interregional bilateral trade flows between West and East Midlands and with the rest of the UK. Finally, our analysis also includes an analysis of the main trading partners for the West Midlands and East Midlands outside the UK. This information is mainly based on the EU and non-EU trade dependency in terms of direct imports and exports of the West and East Midlands regions by sector and compares them with the UK regional average.

Our Brexit analyses include three different scenarios with respect to the baseline scenario (staying in the EU) and covers different levels of geographical disaggregation (NUTS1, NUTS2 and LEP areas). The implications of Brexit in the Midlands local economy are measured in terms of GVA, employment, GDP and labour income. Our analysis covers short-term as well as long-term effects (forecast effect in year 2030).

The UK regional comparative analyses of the economic implications of Brexit (Chen et al., 2018 and Cambridge Econometrics, 2018) show that the Midlands Engine is more susceptible to the effects of Brexit than the **UK regional average** due to mainly its regional industrial structure, no matter the scenario used for the whole suit of indicators included in the analysis.

The long-term implications of Brexit display a homogenous effect at the LEP level (Cambridge Econometrics, 2018). While the results seem to show harder effects in the case of West Midlands, the Single Market and Customs Union scenarios finds that Stoke-on-Trent and Staffordshire as well as Worcestershire as the most affected areas in terms of reduction of GVA and employment in 2030, with respect to the baseline scenario of remaining in the EU. The WTO rules scenario gives a very different picture with regard to employment and GVA. The GVA analysis finds that the most affected areas are Greater Lincolnshire and The Marches, due to the harder effect of this Brexit scenario in agriculture goods.

The short-term Brexit analysis considers the degree to which the Midlands regions and their sectors are exposed to the negative trade-related consequences of Brexit using an analysis of the nature and scale of their trade relationships (Chen et al., 2018). We quantify the shares of regional and national GDP and labour income that are at risk due to Brexit. Our results show that 12.2 percent of UK GDP are potentially at risk because of Brexit negative trade-related consequences. On average, around 13% of the Midlands regional GDP or Labour Income is at

risk because of Brexit negative trade-related consequences. In terms of sectors, manufacturing is the most-exposed macro sector in these two regions.

In our sectoral analysis an industry's exposure to Brexit is defined as its value added – embodied in a product or service – that crosses a UK-EU border at least once. Exposure levels indicate how much the industry has to restructure its supply chains (by re-shoring stages of production and exploiting non-EU markets, for example) in order to mitigate the value added and employment losses due to reduced post-Brexit trade with the EU. Our research suggests that up to 2.5 million jobs are directly exposed to a No Deal scenario in the UK (Los et al., 2017). Among the sectors, manufacturing is the most exposed sector in West Midlands with a 32.3% of its GDP at risk due to EU-UK trade relationships. The frictionless trade enabled by the EU's Customs Union and the EU Single Market allow such pan-European JIT supply systems to operate so smoothly, and today these systems are almost ubiquitous in many areas of the UK and EU manufacturing, engineering, logistics, retail and distribution industries. They are especially important in those regions of the UK with strong manufacturing bases such as the Midlands (Bailey et al., 2018). Not only the manufacturing sector is at risk because of Brexit in West Midlands, but 25.5% of GDP in primary industries, 12.2% of GDP in Services and 4% of GDP in Construction are also exposed to negative trade related risks (Chen et al., 2018).

The most recent research produced by the City-REDI team also examines the implications of Brexit on the competitiveness of UK and EU regions and sectors ([Thissen et al. 2019](#)). The analysis is based on a complex calculation incorporating all of the value-chain issues discussed above, along with detailed knowledge of the actual spatial arenas in which the various industries of different regions do actually compete. This analysis demonstrates again that the adverse competitiveness implications of Brexit are far more severe for UK regions than for regions in the rest of the EU. In addition, the new key finding from our most recent research is that: Brexit is likely to exacerbate intra-regional inequalities as well as inter-regional inequalities, with the larger agglomerations being less adversely impacted than the smaller towns and rural areas in the same region.

Again, if we examine the specific case of the West Midlands, we see that competitiveness of the automotive industries is very severely hit. The loss of competitiveness of the West Midlands automotive industries accounts for 5.5% of total revenues, a figure which is sufficient to wipe out the profits of many of the local industry's firms ([Thissen et al. 2019](#)). There would also be a loss of competitiveness of many of the West Midlands other manufacturing industries of a

similar in size, although the key difference is that the loss of competitiveness in the West Midlands automotive industries is largely insensitive to the actual form of the final UK-EU post-Brexit trading arrangements. As such, withdrawing from Single Market and Customs Union has a severe loss of competitiveness effect of the industry, largely irrespective of whatever deal is finally negotiated.

Discussion

There is now a large body of evidence from many sources including our own research using different modeling techniques and data sources which suggests that in the long run the implications of leaving the EU are likely to be much more serious and problematic for the weaker (and primarily Leave-voting) regions of the UK than for the stronger (and primarily Remain-voting) regions of the UK (Los et al. 2017a; Chen et al. 2018; HM Government 2018; Levell and Norris Keiller 2018; Clarke et al. 2017; Borchert and Tamberi 2018a,b; Gasiorek et al. 2018; Cambridge Econometrics 2018; HoCEEUC, 2018; IPPR 2018; Oliver Wyman 2018; Thissen et al., 2019). London and its hinterland along with Scotland are likely to be less affected by Brexit than the Midlands and North of England, Northern Ireland, and Wales (Billing et al. 2019).

In the UK, the adverse effects are likely to be more severe in regions least able to respond to adverse shocks. Many of the UK's economically weaker regions, with lower levels of diversity, skills and connectivity, including regions that voted to leave the EU (such as the UK's non-core regions in the Midlands and North of England) are at greater economic risk as a result of Brexit (Billing et al. 2019). These economically weaker regions are the least resilient to economic shocks and changes. In comparison, London and northern Scottish regions have much lower exposure levels than the Midlands regions. These quantifiable differences in regional resilience, allied with a likely pattern of Brexit-related shocks that impact more harshly on weaker regions, imply that the post-Brexit UK economy will be one of even greater interregional imbalances (Billing et al. 2019).

As part of other research work on the interregional inequalities and UK sub-national governance responses to Brexit, economic impacts were also comprehensively reviewed, and initiatives by UK sub-national governance bodies in preparation for Brexit were examined (Billing et al., 2019). The various potential impacts of Brexit on UK regions were discussed and the sub-national governance challenges raised by them and significantly, the evidence

suggests that the UK sub-national institutional system is largely unprepared for the post-Brexit reality. The vast majority of evidence suggests that Brexit is likely to make the UK's interregional inequalities worse, with many Leave-voting regions being especially vulnerable. Although there have recently been some tentative steps towards a more place-based governance system and understanding of economic risk mitigation, the UK's highly centralised and top-down governance system appears uniquely ill-equipped to deal with these eventualities. Indeed, the centralisation of governance and stalling of many policy areas, including regional economic development, has led to a situation in which many regions and sectors are unable to react dynamically and effectively to the realities of the impacts of Brexit. The many observed Brexit-related initiatives and activities appear to be largely ad hoc and uncoordinated and vary in effectiveness between localities, reflecting the widespread policy paralysis evident in the UK institutional system.

This is also the case for different sectors. Our work has demonstrated that while manufacturing and agriculture are relatively very exposed to Brexit, in total it is actually the UK services industries that are the most exposed, with some 2.5 million jobs directly affected ([Los et al. 2017b](#)). The jobs which are the most exposed to Brexit tend to be the more productive jobs, which poses a challenge to the whole UK productivity debate, although these are not the financial services industries in The City, which actually face relatively very low levels of exposure to Brexit ([Los et al. 2017b](#)). The broad aspirations outlined in the Political Declaration provide no real clues as to how Brexit will impact on the numerous different services occupations and activities which are currently very exposed.

The earlier movement towards some sort of long-term UK-EU customs-type partnership combined with a 'backstop' agreement may have served to avoid a 'cliff edge' in the short term which would have fundamentally ruptured almost all of the international Just-In-Time types of relationships which are largely ubiquitous in sectors such as automobile manufacturing, aerospace, as well as whole swathes of the supermarket retail and the medical supplies industries (Bailey et al. 2018). In the short-term, this may have mitigated some of Brexit's most adverse impacts on the weaker UK regions with major manufacturing sectors, but the long run the implications for these regions still depend on what type of UK-EU trade relationship is negotiated in the long run. With new proposed deal some of these mitigating features are largely removed, making the adjustment processes more challenging. For these economically weaker regions, while customs alignment is more important in the short to medium terms, in the

medium to long term it is access to the EU Single Market that is still the most critical issue because these weaker regions are more dependent on EU markets. While the future is still unclear, such that we are still largely in the dark regarding this matter, the recent renegotiated deal makes Single Market access much less likely. However, until a new and comprehensive UK-EU trade arrangement is negotiated, which could be years away from now, it is not possible to say anything more specific regarding the implications of the UK's withdrawal from the EU for the different parts of the UK.

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