

Cambridge Econometrics' UK forecast assumptions (EEFM 2019)

July 2019

The UK forecasts are produced by CE's MDM-E3 model. They underpin the forecasts for the regions, Local Enterprise Partnerships (LEP) and local authorities in the East of England Forecasting Model (EEFM).

How the forecast assumptions were developed

Overview

In the context of the UK referendum vote to leave the EU, there is persistent political and economic uncertainty on what the nature of the deal between the EU and UK will look like. At the macroeconomic level, this will have numerous implications for a UK forecast.

The UK regional forecasts in the EEFM 2019 were published in July 2019. The assumptions on the impacts of Brexit for the July 2019 UK forecast were formulated in May 2019. In light of published research reports and political announcements up to May 2019, we concluded that there is very limited new evidence to motivate a revision of the Brexit assumptions. As of May 2019, the *political* particulars of the future relationship with the EU have not been agreed. In April 2019, the deadline to ratify the Brexit withdrawal agreement was extended to the 31st of October 2019, thus avoiding a no-deal exit outcome with no transitional arrangement, and allowing more time for negotiations.

As a reminder, our assumptions on the impacts of Brexit are based on what we think is most likely to happen, given announcements and published reports by think-tanks, non-profit organisations and the UK government.

In very general terms, we adopted the following *political* assumptions for our forecast:

- there is no “cliff-edge” moment as the UK obtains a transitional deal with the EU¹;
- UK agrees a bespoke deal with the EU;
- the UK secures an ability to reduce EU migration;
- the UK can remain in the single market for goods but not services (so there is no financial services passporting); and
- there are likely to be some continued payments for access to the EU from the UK (although these are negligible in macroeconomic terms).

These political assumptions were converted into *economic* and *modelling* assumptions, to explore the macroeconomic implications. The modelling assumptions provide inputs for our [MDM-E3](#) model, the central economic model used in the forecast. For this forecast, we focussed primarily on the macroeconomic effects of Brexit on **exports, migration and investment**.

MDM-E3 is an industrially-disaggregated model. This permits an assessment of the sector-level effects according to their exposure to the changes that might be brought about by Brexit. Our forecast incorporates these differential effects in a way that is consistent with the literature on the potential impacts of Brexit, both by sector and for the UK as a whole.

¹ For the remainder of this note, EU denotes all member states apart from the UK.

Export assumptions

We expect that there will be restrictions to trade with the EU. For the forecast, we assumed that the degree of restrictions to UK exports will differ at the sectoral level. At the broadest level, we assumed that the impacts on goods will be small, while the impact on services trade will be relatively larger. We made no assumptions on the specific types of trade restriction measures that will be adopted.

We derived an estimate of UK exports to the EU by broad sectors², based on trade data for 2014 and 2015³. Using this estimate, we formulated diminished export growth assumptions by broad sector consistent with the political assumptions outlined above.

We utilised the relationships within MDM-E3 to develop a forecast for imports; no explicit, additional economic or modelling assumptions were developed as inputs for the model with respect to imports.

We also assumed that trade with the rest of the world will continue as before. The implicit assumption is that UK will form trade arrangements with the rest of the world, similar to those in place at present.

Migration assumptions

As documented within the existing literature and the media, movement of labour is a primary consideration of the Brexit deal for both the UK and the EU, and will likely incur a plethora of political, economic and social impacts on households and the national economy.

The population assumptions are based on ONS central population projections, which we adjusted for the effect of Brexit on *total* net migration to the UK.

The scale of this adjustment is comparable with the lower-end impact estimates of Brexit on net migration from the literature reviewed by CE. The magnitude of estimated impact is motivated by the agreed policy on the settled and pre-settled status for EU citizens in the UK⁴, the recommendations made in the Migration Advisory Committee report⁵, and the anticipated replacement effect of the future higher net migration from the rest of the world.

Given existing migration restrictions to the rest of the world (RoW), we assume that migration restrictions will manifest as restrictions on low-skilled migration. At the same time, however, lower immigration of high-skilled workers is also assumed due to concerns over the economic outlook in the UK, and the anticipated costs of work permit proceedings. This effect is expected to have started taking place immediately after the outcome of the referendum in 2016. There is an implicit assumption that the EU workers will not be fully replaced by domestic and RoW workers.

The estimated decline in annual net migration is distributed across sectors according to their estimated reliance on EU workforce, which we obtained using employment by nationality data from the Annual Population Survey. For this forecast, we used the latest Annual Population Survey data available at the time for 2018.

Investment assumptions

Much of the published literature on the investment impacts of Brexit focuses predominantly on the potential decrease of foreign direct investment (FDI) into the UK, as well as (possibly) the implications this would have on productivity at the national aggregate level. We adopted a different approach, and developed investment assumptions at the sectoral level. We

² The broad sectors are outlined in more detail in the appendix.

³ More recent data are available to form the estimates. However, the proportion of UK exports to the EU relative to the rest of the world are not expected to have majorly changed over the years for which data are available.

⁴ "Settled and pre-settled status for EU citizens and their families" by gov.uk

⁵ "Migration Advisory Committee (MAC) report: EEA migration"

characterised long-term⁶ assumptions for investment for each broad sector according to several simplifying categories:

- there would be no change in investment levels;
- investment would slow down, due to some businesses moving a proportion of their activity out of the UK. This would result in a decrease in investment, proportional to the diminished level of activity in the UK;
- investment would adjust based on changes to public spending plans.
- investment would slow down, due to some businesses moving a proportion of their activity out of the UK, but also as a result of the diminished growth prospects of that particular sector within the UK. This could further dampen investment intentions within the UK, as multi-national organisations within those sectors may choose to divert a disproportionate amount of their investment to countries with better growth prospects.

In the last case, expectations of diminished growth prospects may stem from factors such as lack of Single Market access, or skill shortages that have been further exacerbated by migration restrictions. Expectations for growth may also dampen in sectors that rely heavily on cooperation with other member states or funding from the EU. The mechanisms through which expectations of sectoral growth may diminish were not explicitly accounted for when developing the economic and modelling assumptions. A judgement was taken on which of these are most applicable at a sectoral level.

Implicitly, no further judgements were taken on the impact of FDI on investment, including the potential impacts diminished FDI may have on productivity. However, our economic and modelling assumptions for investment are broadly in line with published studies which do consider the link between FDI and investment at the UK-aggregate level.

Detailed explanations of the assumptions in the forecast

The summary table below presents a qualitative overview of the specific long-term economic assumptions of the impacts of Brexit by broad sector:

Table 1: UK forecast assumptions

Sector	Export assumptions	Employment assumptions	Investment assumptions
Agriculture	Mild slowdown in EU demand	Strong employment constraints	Mild slowdown in investment
Mining & quarrying	No specific impact modelled	Moderate employment constraints	Moderate to pronounced slowdown in investment
Low and medium-low tech manufacturing	Mild slowdown in EU demand	Moderate employment constraints	Moderate to pronounced slowdown in investment
High and medium-high tech manufacturing	Mild to moderate slowdown in EU demand	Moderate employment constraints	Moderate to pronounced slowdown in investment
Construction	Mild slowdown in EU demand	Moderate employment constraints	Moderate to pronounced slowdown in investment
Utilities	Mild slowdown in EU demand	Mild employment constraints	No specific impact modelled

⁶ In the short-term, investment is expected to fall sharply, driven by persistent political and economic uncertainty. This was modelled in a separate exercise.

Transport, distribution, retailing, accommodation, catering, and administrative and support services	Moderate to pronounced slowdown in EU demand	Strong employment constraints	Moderate to pronounced slowdown in investment
IT, financial and insurance, real estate, professional, and scientific and technical services	Pronounced slowdown in EU demand	No specific impact modelled	Moderate to pronounced slowdown in investment
Public administration and defence, education, health and social work, and other services (arts and other services)	Mild slowdown in EU demand	Moderate employment constraints	Mild slowdown in investment

Source: Cambridge Econometrics.

Appendix: mapping to broad sectors

The broad sectors outlined above map to 31 EEFM sectors according to the following classifications:

Broad sectors	EEFM sectors	
Agriculture	Agriculture & fishing	
Mining & quarrying	Mining & quarrying	
Low and medium-low tech manufacturing	Food manufacturing	
	General manufacturing	
	Chemicals excl. pharmaceuticals (part)	
	Metals manufacturing	
High and medium-high tech manufacturing	Chemicals excl. pharmaceuticals (part)	
	Pharmaceuticals	
	Transport equipment, machinery & equipment, etc	
	Electronics	
Utilities	Utilities	
	Waste & remediation	
Construction	Construction	
Transport, distribution, retailing, accommodation, catering, and administrative and support services	Wholesale	
	Retail	
	Land transport	
	Water & air transport	
	Hotels & restaurants	
	Publishing & broadcasting	
	Telecoms	
	Business services excl. employment activities	
	Employment activities	
	IT, financial and insurance, real estate, professional, and scientific and technical services	Computer related activities
		Finance
		Real estate
		Professional services excl. R&D activities
Research & development		
Public administration and defence, education, health and social work, and other services	Public administration	

Education
Health & care
Arts & entertainment
Other services

Source: Cambridge Econometrics.