



Programming Brexit: How will the UK's IT sector fare?

Mikkel Barslund and Matthias Busse

Summary

The British economy has always been able to rely on a continuous inflow of high-skilled workers from the rest of the EU and the UK is currently home to over three million EU citizens. As a result of the UK's decision to leave the European Union, however, the image of the UK in the eyes of foreign workers may have become tarnished.

By using LinkedIn data, we analyse the movements of IT professionals between the EU and the UK and thereby illustrate what is at stake for the UK, as exemplified by this particular 'shortage sector'. LinkedIn data show that on an annual basis the UK gains over 6,000 IT experts more than it loses to the EU. Moreover, these mobile IT professionals also tend to be much more qualified than domestic IT experts are. This reliance on the EU for IT recruitment – one in ten new hires comes from the EU – suggests that even if the UK is not aiming to restrict high-skilled immigration, curbing overall immigration could have unintended negative spill-over effects on its capability to attract talented EU nationals in the future. The UK government should perhaps bear this in mind during negotiations with the EU27.

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Introduction

During the Brexit campaign the *Leave* camp articulated one of their key aims as a slogan: *take back control*. This mantra can be applied to many policy fields in which EU laws have had an impact on national regulations and practices, but none was as hotly contested as immigration policy or, more precisely, the free movement of labour within the EU. Prime Minister Theresa May repeatedly affirmed that the ability to manage the immigration of EU citizens would be a non-negotiable demand once Article 50 was triggered.

At the same time, most politicians in favour of Brexit nevertheless regard high-skilled immigration as desirable for society and the economy.¹ Numerous studies have shown that immigration increases GDP, raises tax revenues for the government and boosts net contributions to the social security system, although the impact on GDP per capita is less clear.² The benefit of high-skilled immigration is bound to be more advantageous. It would therefore be surprising if 'taking back control' aims to reduce the labour inflows of occupations or skill levels indiscriminately.

It is likely that immigration controls for EU citizens will be more easily overcome by high-skilled workers, for example via a system based on an earnings threshold or on points. In fact, it may be that the right to work in the UK will not be much impeded for most high-skilled mobile workers. Nevertheless, barriers and regulations to reduce 'low-skilled' migration will have the side-effect of increasing the administrative burden for employers and employees for all. This will be of some relevance to SMEs, in particular.

Furthermore, pledges to ensure that jobs are filled with Brits first, by shaming companies who do not follow this practice, will affect low as well as high-skilled immigration. In general, the uncertainty surrounding post-Brexit policy in the coming years may already have had a negative impact because some companies are struggling to fill vacancies.³ Second, it remains to be seen which parts of the EU *acquis* relevant for mobile workers will be maintained, in particular regarding the regulation on the coordination of social security entitlements. Such rights granted by EU regulation are important in the decision-making of mobile workers (see Eurobarometer 2014). Lastly, the heightened immigration debate may negatively affect the image of the UK as a society open to foreigners, in itself diminishing its attractiveness.

¹ E.g. Wilkinson (2016).

² See for example Bonin (2006), Brücker et al. (2013), Dustmann and Frattini (2014), D'Auria et al. (2008), Hagist et al. (2011) or OECD (2014).

³ "Employers start to feel pinch of EU labour shortages", *Financial Times*, 13 February, 2017.

While uncertainty about future immigration policy towards EU27 nationals abounds, it is clear that its design has the potential to disrupt certain sectors and industries. One such sector is the IT industry. As this paper shows, filling IT jobs may become much harder post-Brexit. The UK has a large net import of IT professionals, with one-in-ten new IT hires coming from the other EU27 countries. This is important because not only is IT a service sector in itself, it is also an increasingly important component of many other industries.

UK: A large net recipient of mobile EU workers

It is well-known that labour mobility in the EU is comparatively low.⁴ According to Eurostat, around 3.5% of the EU's population was born in another EU member state and only 0.3% of its population moves cross-border every year. The UK is one of the more mobile western European hubs. Almost three million non-UK EU citizens currently live in the UK.⁵ Put in perspective, that is nearly 5% of its population, ranking the UK first among the large countries in its share of population born in another EU country.⁶ The share of EU citizens in total employment is even higher, i.e. around 6.6%, with the share among 30-34 year olds even reaching 13%. At the same time, UN data shows that only 1.9% of Britons live in another EU member state, foremost in Spain, Ireland and France. This picture of comparatively less mobile UK citizens is not only for the stock but also for recent flows. Outward UK citizen mobility only reaches 0.2%, compared to the 0.45% EU average.⁷

EU27 nationals living in the UK tend to be somewhat better educated than UK nationals (see Figure 1). A larger proportion is high-skilled and a smaller proportion low-skilled. Only 11% of the EU mobile citizens in the UK have lower educational attainment, i.e. below upper secondary education, as opposed to 15% of UK nationals. Interestingly, (young) mobile citizens moving to the UK are much better educated than the average (young) mobile citizen moving within the EU; the UK thus seems to be a magnet for the most educated youngsters.

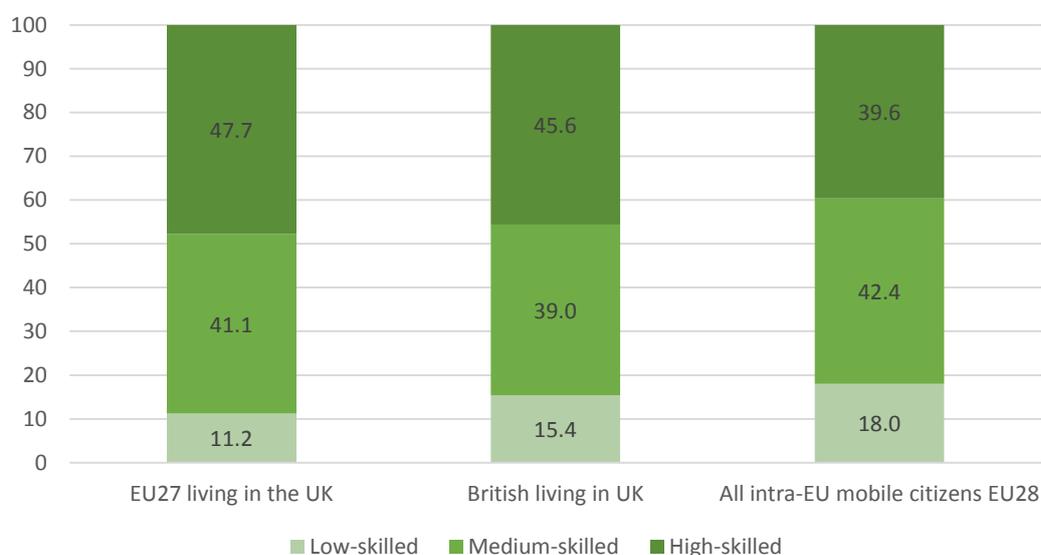
⁴ Barslund and Busse (2014).

⁵ Eurostat, 2017.

⁶ Overall the UK ranks sixth after Luxembourg, Cyprus, Ireland, Belgium and Austria.

⁷ Eurostat, 2017.

Figure 1. Skill levels of mobile and UK populations, aged 30-34



Source: Eurostat (edat_lfs_9912).

Moreover, EU mobile citizens in the UK not only tend to be more educated but also achieve a higher employment rate than UK nationals. In 2015, around 79% of EU citizens in the UK were working, whereas only 73% of natives were employed. Likewise, the unemployment rate of EU nationals is marginally lower than that of British citizens.

Against this background, a number of studies have concluded that the free movement of labour within the EU is an economic benefit to the UK overall.⁸ This is even more the case with regard to specific sectors that are experiencing severe labour shortages and where there is ample labour supply within the rest of the EU. It is therefore useful to take a closer look at these highly productive sectors that are dependent on foreign recruitment and where the EU labour pool plays a crucial role. Recent analyses show that for many professions foreign (EU) labour takes a share of more than 25% of employment in the UK. The top ten professions in terms of mobile citizens' share in the sector are almost exclusively low- to medium-skilled, with the notable exception of IT and telecommunications.⁹ This sector not only appears to be dependent on foreign recruitment but is crucial to the UK economy.

The UK IT sector depends on foreigners

The IT sector is important not only because it is a high value-added industry on its own but it is also believed to be a key driver of productivity improvement in the wider economy. It is also an important services export industry for the UK, with IT services-related exports from the UK

⁸ See Dustman et al. (2010); Blanchflower & Lawton, (2009); Vargas-Silva (2013); and Dustmann & Frattini (2014).

⁹ The Migration Observatory, 2016 and Office for National Statistics, 2014.

totalling €25 billion, which represents around 8% of all service exports.¹⁰ It is also a growth industry. Secondly, the IT sector has been identified in both the EU and the UK as one of the recruitment bottlenecks at present and in the future.¹¹ Moreover, the average salary of IT professionals is comparatively high and thus (net) contributions to the welfare state are likely to be substantial.

Besides the large potential benefit to the UK economy per IT recruit attracted, this group is also known to be particularly mobile since language barriers are often less of a consideration due to work being performed in common international programming languages. Consequently, the impact of foreign recruitment on the economy in this sector could be significant.

No single official data source allows us to consider major industries in detail when it comes to the cross-country mobility of workers. Instead, we have relied on LinkedIn profiles to track the mobility of IT professionals within Europe and beyond to and from the UK. LinkedIn profiles include information on the current work location and changes are time-stamped. A mobile worker is thus classified as a person who changed his/her location during 2014 from an EU country to the UK or vice versa. In this study we narrow the observation down to IT professionals, i.e. persons who took up a post in the IT sector.¹² Focusing on 2014 avoids any Brexit (anticipation)-related impact since referendum campaigning only started in earnest in 2015.

LinkedIn data insights

Quantity

The overall LinkedIn sample tracked 70,000 IT movers within the EU and 33,000 between the EU and the UK alone. Thus, the UK is a partner country in almost half of the total mobility of IT workers. Some 19,600 IT professionals were identified via LinkedIn as having moved from an EU country to the UK in 2014. In the same year the UK lost 13,300 IT professionals to the EU, providing a net gain of 6,300 IT professionals in a single year (Figure 2). Put in perspective, every tenth new IT hire (as recorded by LinkedIn data) in 2014 was a non-UK EU mobile citizen. In the EU only 2% of 2014 hires came from the UK.

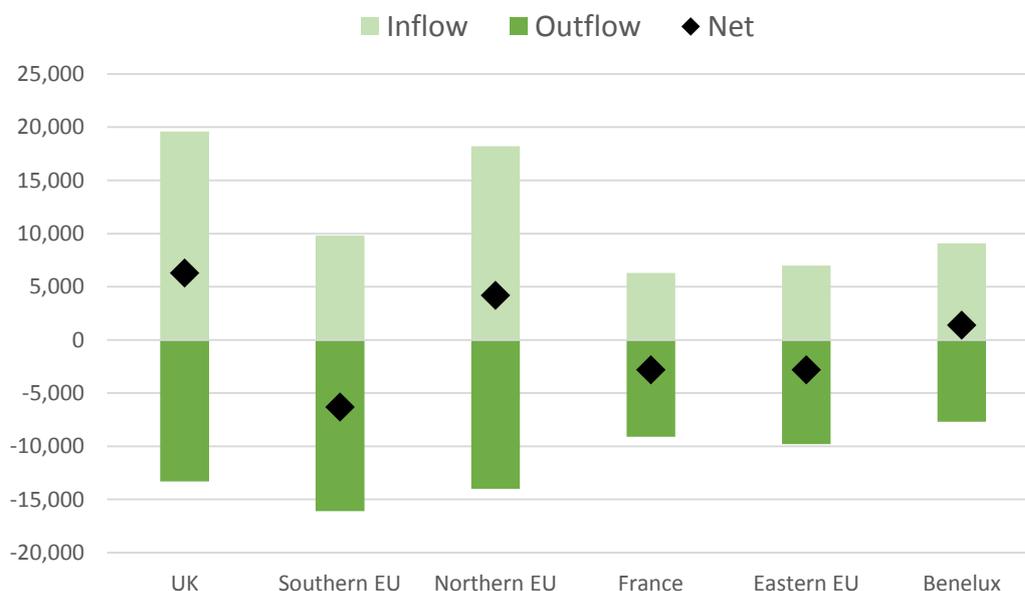
Indeed, of all EU countries, the UK achieves the largest net gain among the EU member states, closely followed by the second-largest surplus, which is achieved by the northern EU countries. The UK is clearly very attractive for IT professionals, whereas France, eastern EU and southern EU member states are a net source region.

¹⁰ Specifically, telecommunications, computer, and information services.

¹¹ CEDEFOP, 2016 and European Commission, 2016.

¹² IT professionals are the ideal test group since they are likely to have a LinkedIn profile, thus making the LinkedIn sample highly representative of the actual IT population (see Barslund and Busse, 2016).

Figure 2. IT mobility by region

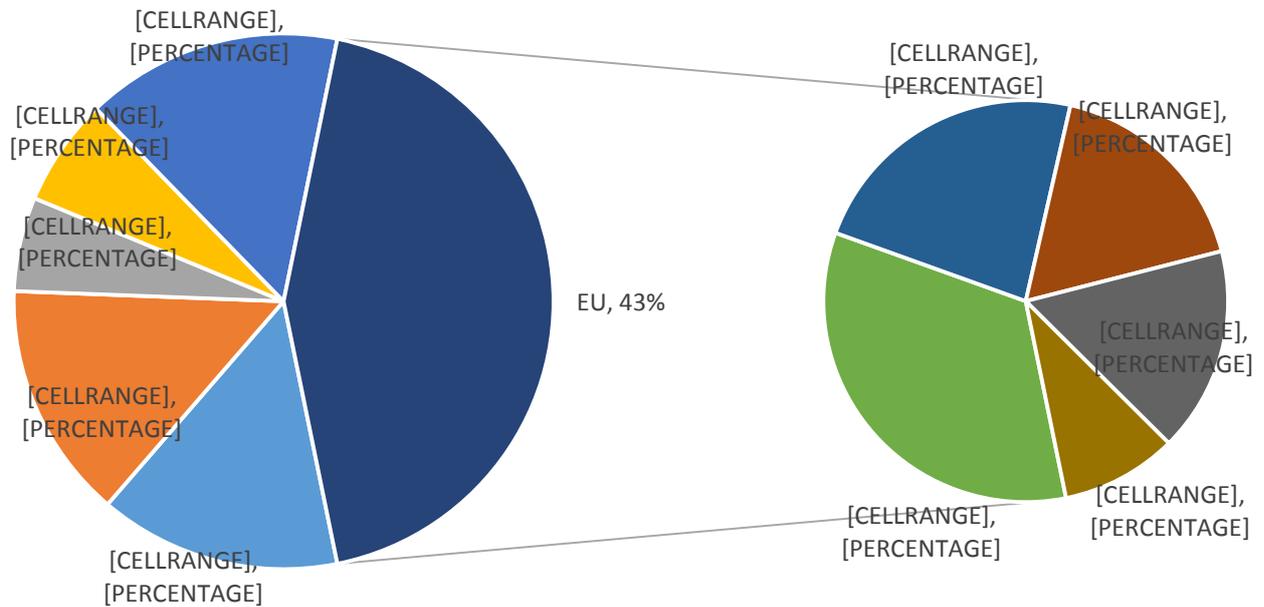


Source: LinkedIn study data (this also applies to other figures not cited otherwise).

Note: Southern EU includes Cyprus, Greece, Italy, Malta, Portugal and Spain; northern EU is Austria, Germany, Denmark, Finland and Sweden; eastern EU is Bulgaria, Croatia, Estonia, Czech Rep., Hungary, Latvia, Lithuania, Poland Slovak. Rep, Slovenia and Romania.

The UK is thus profiting from the EU labour market in net terms. Moreover, the LinkedIn data clearly show how interwoven the labour markets of the UK and EU truly are. The EU labour pool is the single-most important supplier of IT professionals for the UK, from which it draws around 43% of its foreign IT recruits (see Figure 3). For recent IT graduates the UK is even more dependent on the EU, with more than 50% stemming from the EU.

Figure 3. IT immigration to the UK by source country, 2014



The EU is also the most popular destination for its IT workers, taking a share of 31%. Every tenth IT immigrant to the EU comes from the UK, a surprisingly large share given its small share in terms of global and EU population. From a regional perspective, southern Europe provides the most IT professionals to the UK, both in gross and net terms (see Figure 4a&b). Nearly half of the net loss to the UK stems from southern Europe. Eastern Europe is the second largest (net) supplier to the UK, whereas the other three regions achieve a near-balance.

Figure 4a. EU mobility vis-a-vis UK by country group, 2014, as a % of total IT movements between EU & UK

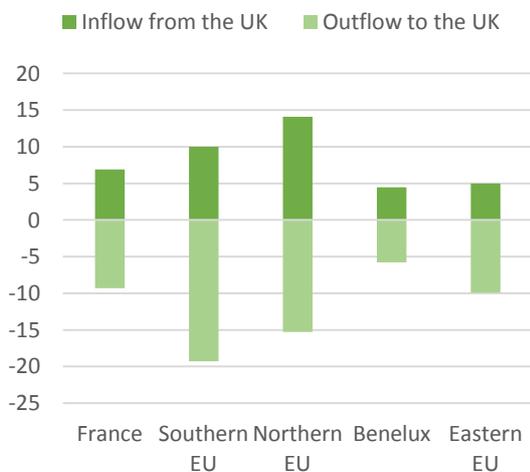
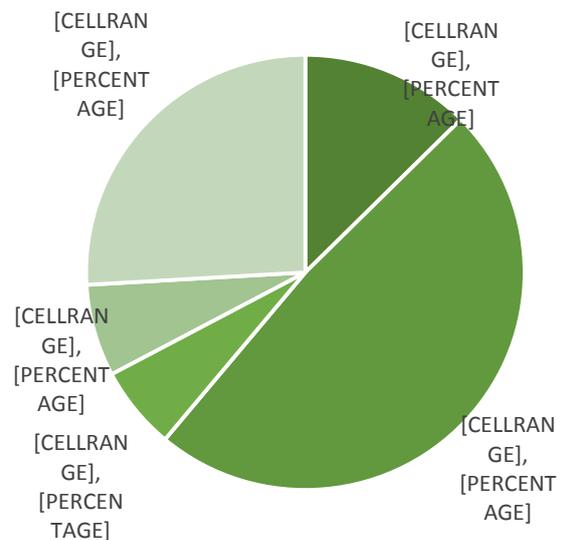


Figure 4b: Share in total EU net loss to the UK of IT talents



Despite this substantial gross outflow to the EU, the UK clearly gains IT talent from every single region in the EU, to the great benefit of its economy. The dependence on EU recruitment becomes even more apparent in view of the UK's net loss of 3,800 IT professionals to non-EU countries. Only due to the 6,300 surplus with the EU is the UK able to gain IT talent globally. One could thus argue that the UK is highly dependent on the EU's IT talent pool while the EU is much more diversified and in fact incurs a net loss vis-à-vis the UK. Size is not the only consideration, however, and one has to look beyond mere quantities.

Quality

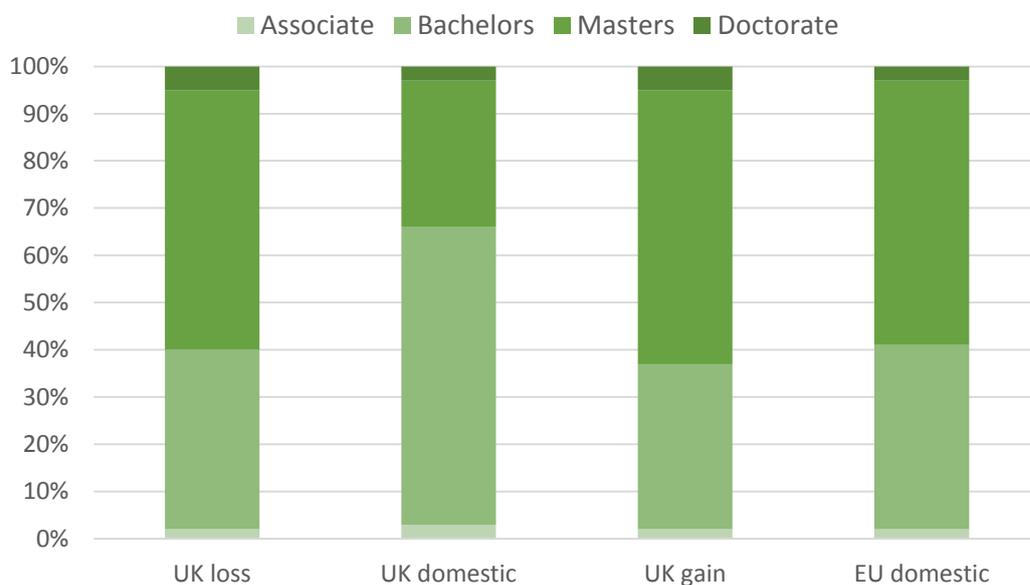
As we have shown in a previous study on the 'talent war' between the EU and the US,¹³ not only does quantity determine the true winner but the quality of those received and lost is significant.

It should be said that the 'quality' of IT talents is not directly quantifiable. The most viable measure of talent that is systematically captured and comparable is educational attainment. Unlike the OECD data on educational attainment (which is outdated in any case), the LinkedIn profiles allow us to differentiate between bachelor-level, Masters-level and PhD degrees for all countries. The level of academic degree attained is not the ideal proxy for talent, however, because the concept itself is almost impossible to define.

An analysis of LinkedIn profiles reveals that mobile IT workers from both the EU and the UK have a more advanced level of education than those UK workers taking up an IT post domestically (see Figure 5). A mobile worker is twice as likely to have Masters degree or a PhD as a domestic IT worker.

¹³ In the EU-US context quality strongly favoured the US, which might also be the case for the UK due to its very attractive research centres, high salaries and overall appeal (see Barslund & Busse, 2016; Morehouse and Busse (2014)).

Figure 5. Educational attainment of mobile and 'immobile' IT workers starting a job in 2014



The difference between EU IT workers and EU immigrants to the UK is only significant for PhDs; the average EU IT professional moving to the UK is thus more or less representative of the entire IT population. However, the most striking result is the identical educational attainment of those leaving the UK for an IT position in the EU and vice versa. In terms of 'quality' gained and lost the EU and UK seem to be on a par. The big caveat, however, is that 'immobile' domestic British IT professionals tend to have a substantially lower educational attainment than those the EU gains and loses. In view of this, the 6,300 net surplus of the UK becomes even more crucial to the UK economy.

Conclusions

The IT sector in the UK depends heavily on mobile IT professionals from other EU countries. One in every ten new IT hires in the UK comes from another EU country. LinkedIn data insights reveal that the UK attracts more IT professionals from the EU than it loses to the EU, yielding an annual net gain of 6,300 IT experts. IT professionals from the EU also have – on average – higher educational attainment than their UK-born peers. Not only is the flow of IT professionals considerable; the IT sector ranks among the top ten among both sectors and occupations with the most foreign-born workers. Moreover, looking at the ten occupations with the largest share of foreign-born employees in more detail reveals that IT and telecommunications professionals have by some margin the highest average salary. For this reason, IT professionals from other EU countries are likely to make a substantial positive contribution to public finances.

Since IT professionals are highly skilled they will in all likelihood retain part or maybe even full access to the UK labour market. But making access more cumbersome – either by instituting an earnings threshold, a points system or some other mechanism – will increase hiring costs for employers. It may also deter some employees from going to the UK in the first place. In particular, because the EU regulation on the coordination of social security will no longer apply to the UK, this could make moving back to EU countries more costly.

It remains to be seen what impact Brexit will have on net migration flows, but it is clear that there is lot at stake for high-value and high-paying sectors – such as the IT sector – and this will depend on the final design of UK migration policy post-Brexit.

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