



Immigration and productivity in the UK

Category Name: MW 459

Summary

1. Arguments that immigration to the UK is vital for the economy, in particular that it is enhancing of UK productivity, are exaggerated. The findings of cross-country studies are not necessarily applicable to the UK – indeed they appear not to be so in key regards – and the findings of UK studies fail to provide convincing support to these arguments. Clearly much depends on the skill levels of migrants rather than on mere numbers.

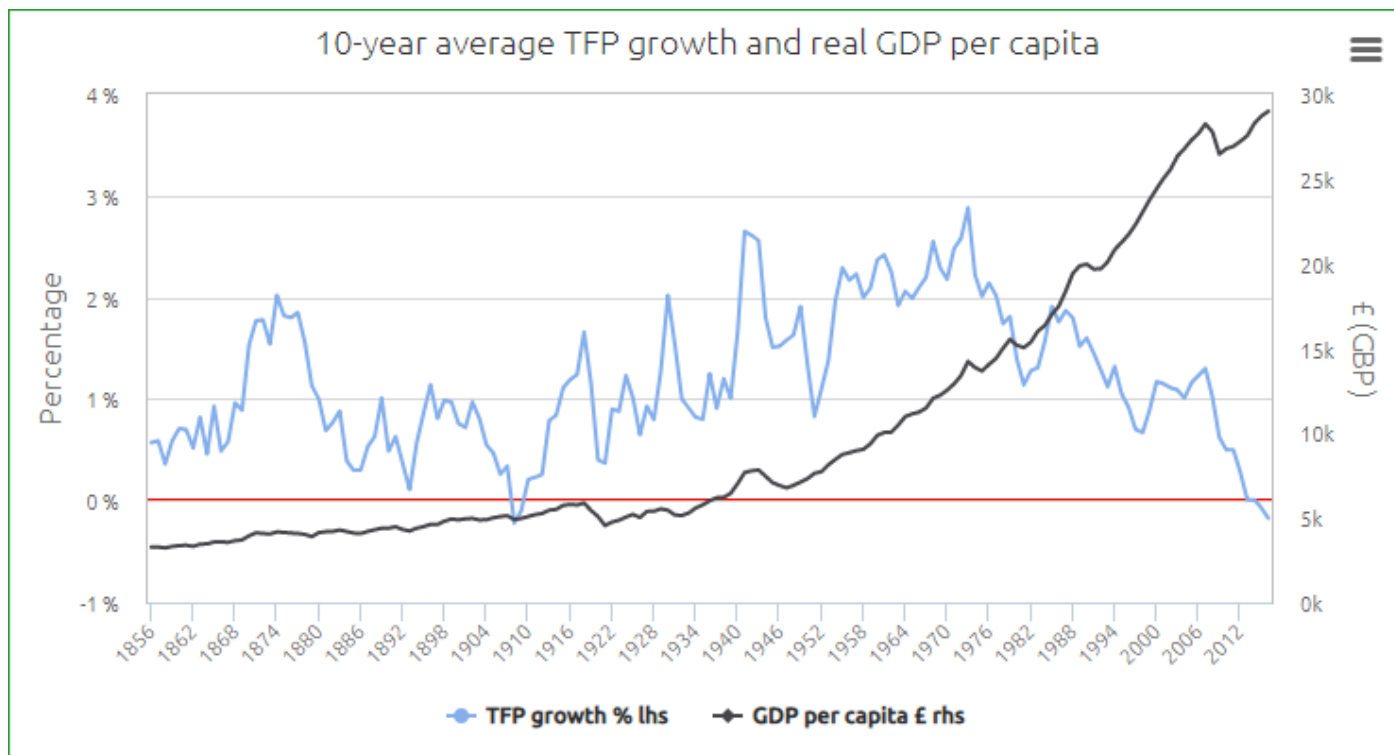
Productivity

2. Productivity is key to the performance of every economy. It is usually calculated and expressed as the measure of the value of economic output produced by each worker or by each hour worked. *The ability to improve standards of living depends almost entirely on an economy's ability to raise its output per worker over time.*

Productivity in the UK

3. UK Gross Domestic Product per capita is many times higher today than it was in the mid-nineteenth century whereas it would be only twice as high if productivity had remained constant. This enormous economic growth has been driven by higher productivity – additional inputs of capital and labour and especially their more efficient use. The latter is called Total Factor Productivity (TFP). Figure 1 below illustrates that over the past century high growth in GDP per capita was associated with annual TFP growth broadly in a range between 1% and 2.5%. However in the last decade its growth has collapsed below that range and GDP per capita has effectively stalled.

Figure 1: Ten-year average Total Factor Productivity (TFP) Growth and real GDP per capita. Data from: 'A millennium of macroeconomic data for the UK', Bank of England.

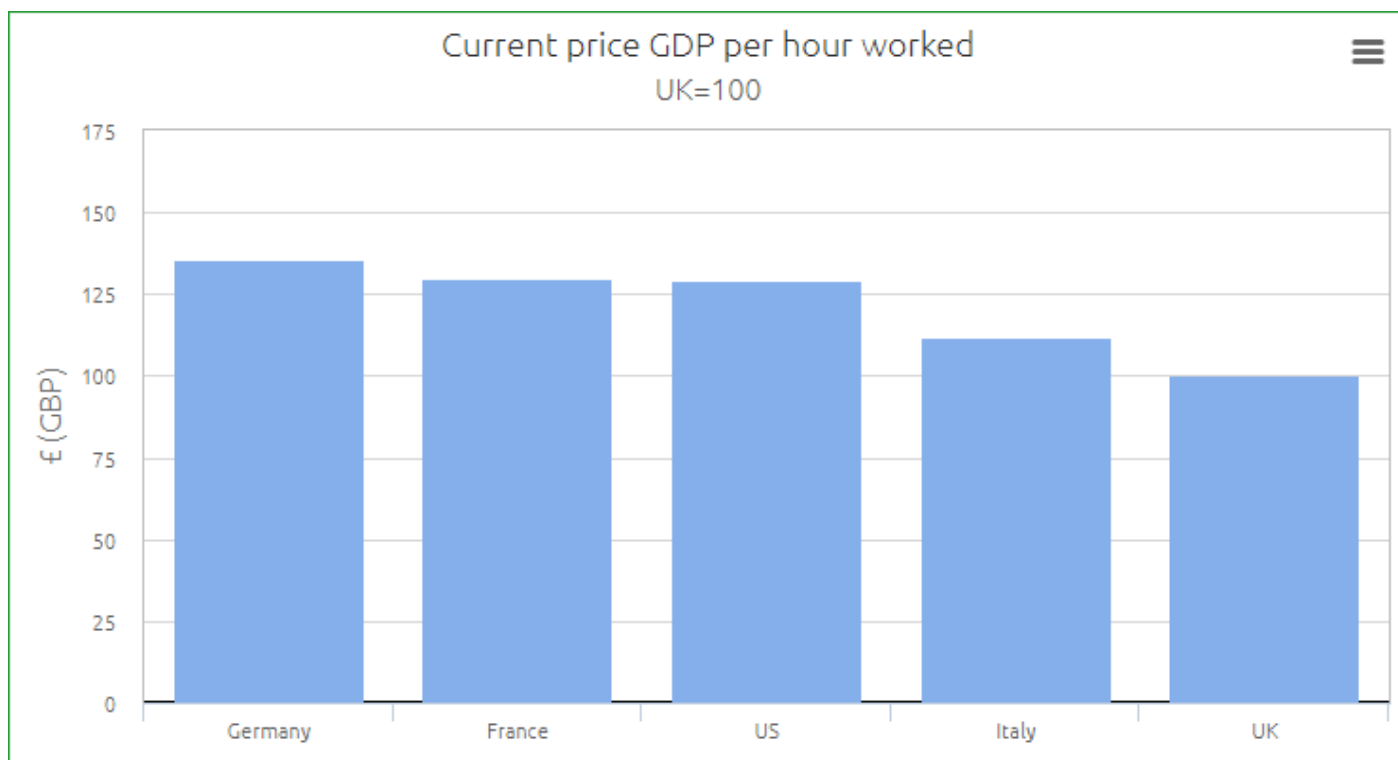


4. This fall-off in productivity is advanced as one of the main reasons for the stagnation in real pay over that period. If the value of output per worker does not increase, then there is much less scope for paying the worker a higher wage. The reasons why productivity levels in the UK have fallen so much behind the trend they exhibited before the recession is unclear. This is often referred to as the 'productivity puzzle'.

International productivity comparisons

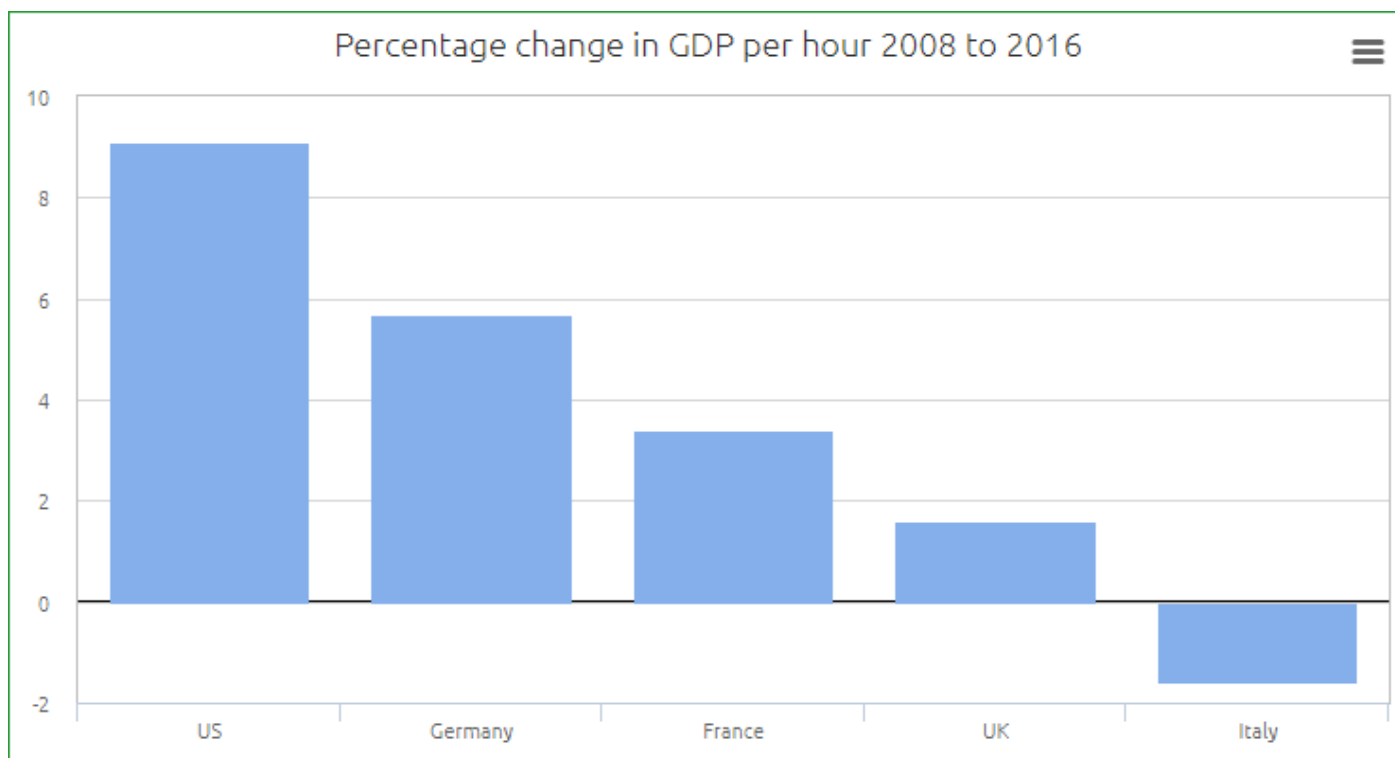
5. Compared with other developed market economies, levels of productivity in the UK can be low. Figure 2 below illustrates that in 2016 UK productivity was 9% below productivity in Italy, 22% lower than the USA and France, and over 25% lower than in Germany.

Figure 2: Current price GDP per hour worked. Data from 'International comparisons of UK productivity', Office for National Statistics (ONS).



6. These shortfalls between the UK and other developed countries in the level of productivity are longstanding and may be attributed to international differences in a range of fundamental economic characteristics such as amount of business investment, quality of education and training and quality of firm-level management as well as labour market factors that encourage or discourage participation in work. However Figure 3 below illustrates that growth in productivity in the UK over the period 2008-2016 has been half of that in France, less than a third of that in Germany and less than a fifth of that in the USA. This implies that the fall-off in UK productivity growth cannot be attributed merely to economic crash of 2008 and answers must be found elsewhere.

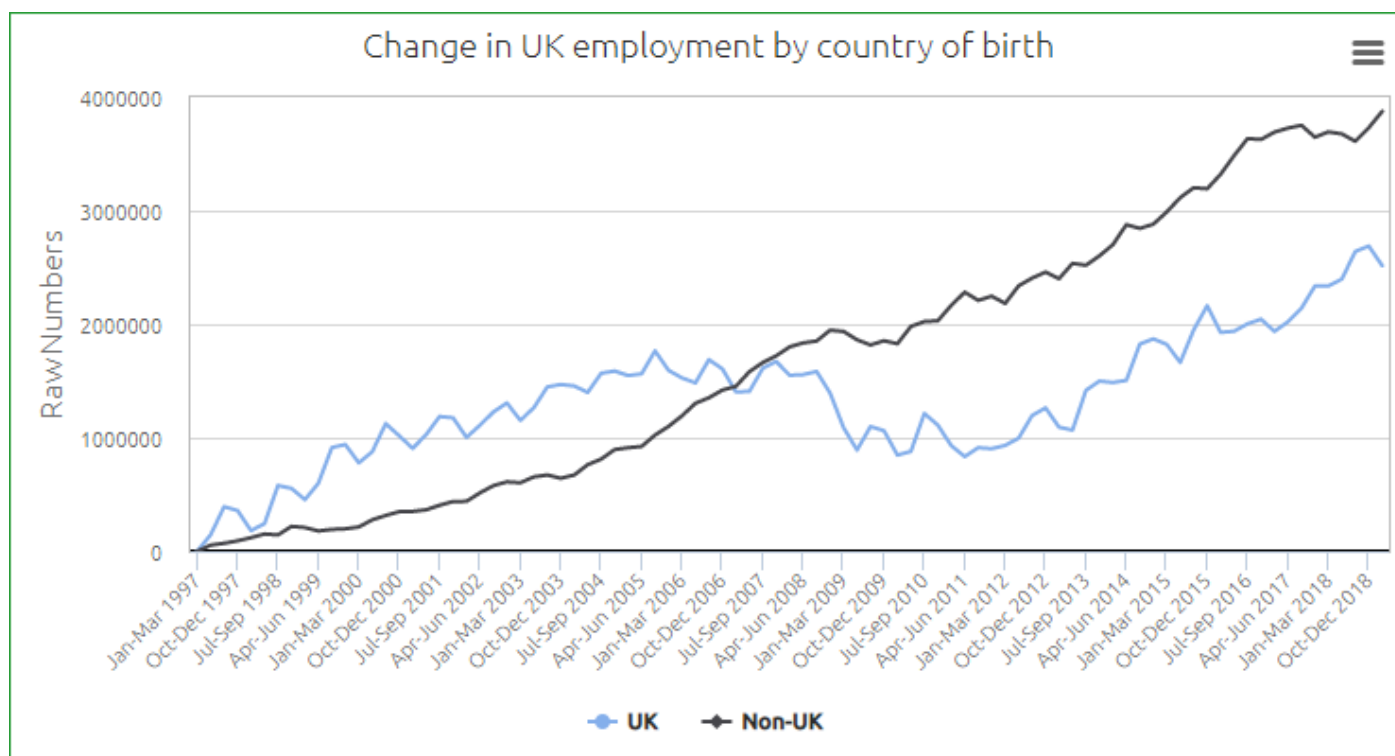
Figure 3: Percentage change in GDP per hour, 2008-16. Data from 'International comparisons of UK productivity', ONS.



Migration and productivity

7. From 1997 to 2008 growth in migrant workers in the UK was matched by growth in UK-born workers. From 2008 until the middle of 2018 growth in migrant workers outpaced growth in UK-born workers by two to one.

Figure 4: Change in UK employment by country of birth. Data from 'UK Labour Market February 2019', ONS.



8. Notwithstanding the continued absence of any solution to the 'productivity puzzle' in the UK, it is regularly advanced as an argument for high levels of immigration to the UK that migrants improve productivity and that the UK should as result welcome the free movement of workers from elsewhere in the EU and further encourage immigration from around the world.

The impact of immigration on productivity

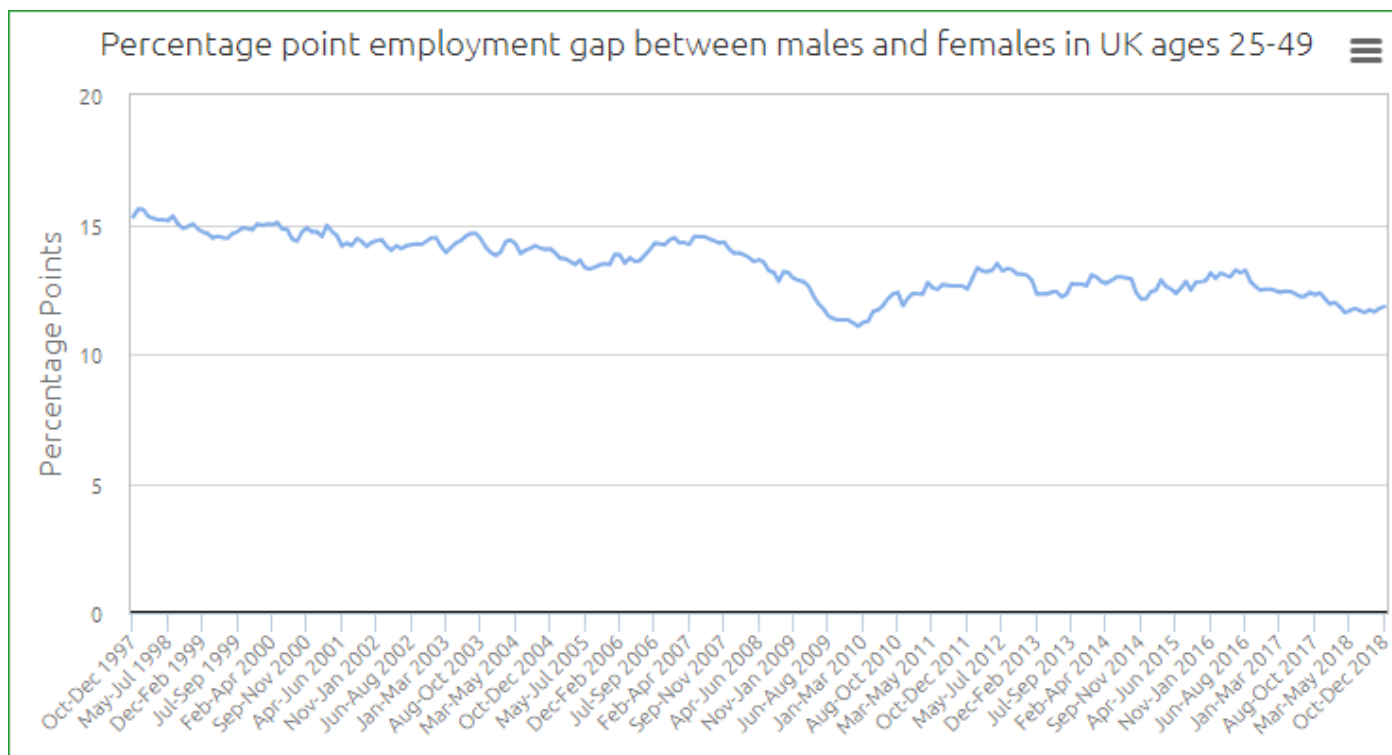
9. There are many ways by which new workers taken on by an employer might affect productivity. Firstly, if the productivity of the new workers on average is higher or lower than existing productivity then there may be a simple compositional effect raising (or lowering) overall productivity. They might be able to work harder or faster, they might have more experience leading to fewer errors, or they might be more skillful and able to produce a better product or deliver a better service. The converse might also apply. If the new workers are migrants, they might work more slowly because of language barriers. Their experience might be a detriment if they are used to carrying out tasks in a way that differs significantly from UK business practice in their sector and they have to adapt to new ways of working.

10. Secondly, there might be 'spill-overs' as the new workers may affect the productivity of existing workers, again either positively or negatively. For example, migrants might speed innovation by bringing new skills and introducing new practices to UK employers or they might hold back innovation by reducing the incentive employers have to improve efficiency through automation or investment in new equipment. Or, in what is usually described as being 'complementary' the availability of new migrant entrants to the workforce might encourage or allow existing workers to acquire higher levels of human capital, for example by increasing the need for supervisory roles and enabling more promotion of existing workers.

11. Proponents of the argument that immigration is productivity-enhancing have generally referred to a small body of recent academic research, firstly in particular a report published by the International Monetary Fund *'Impact of migration on income levels in advanced economies'* [Jaumotte et al 2016]. This concluded that immigration increases the GDP per capita of host economies, mainly by raising labour productivity. The report claimed that the effect is significant and a one percentage point increase in the share of migrants in the adult population can raise GDP per capita by up to 2 percent in the long run. Of particular interest for some commentators in the UK was the finding that both high-skilled and low-skilled migrants contribute to productivity as such a large proportion of the growth in the EU migrant workforce in the UK resulted from entry into lower-skilled employment following the accession of Eastern European countries in 2004.

12. However, while the paper contends that lower-skilled migration can improve productivity, this is the overall result of a cross-country analysis, not a result for the UK specifically and the ways in which it can do so are much less capable of universal application. For example, one of the main channels through which it was suggested that low skilled migration is able to increase productivity and therefore GDP per capita was through the importation of domestic help to free up higher-skilled women from housework and childcare and enabling them to work instead. This does not appear to be the case for the UK as the employment gap between prime-age women and men in the UK has changed very little during the period of very high immigration to the UK following 1997, fluctuating in a narrow two percentage point band before the recession and a slightly lower but similar band since the recession.

Figure 5: Percentage point employment gap between males and females aged 25-49. Data from 'UK Labour Market, March 2019', ONS.

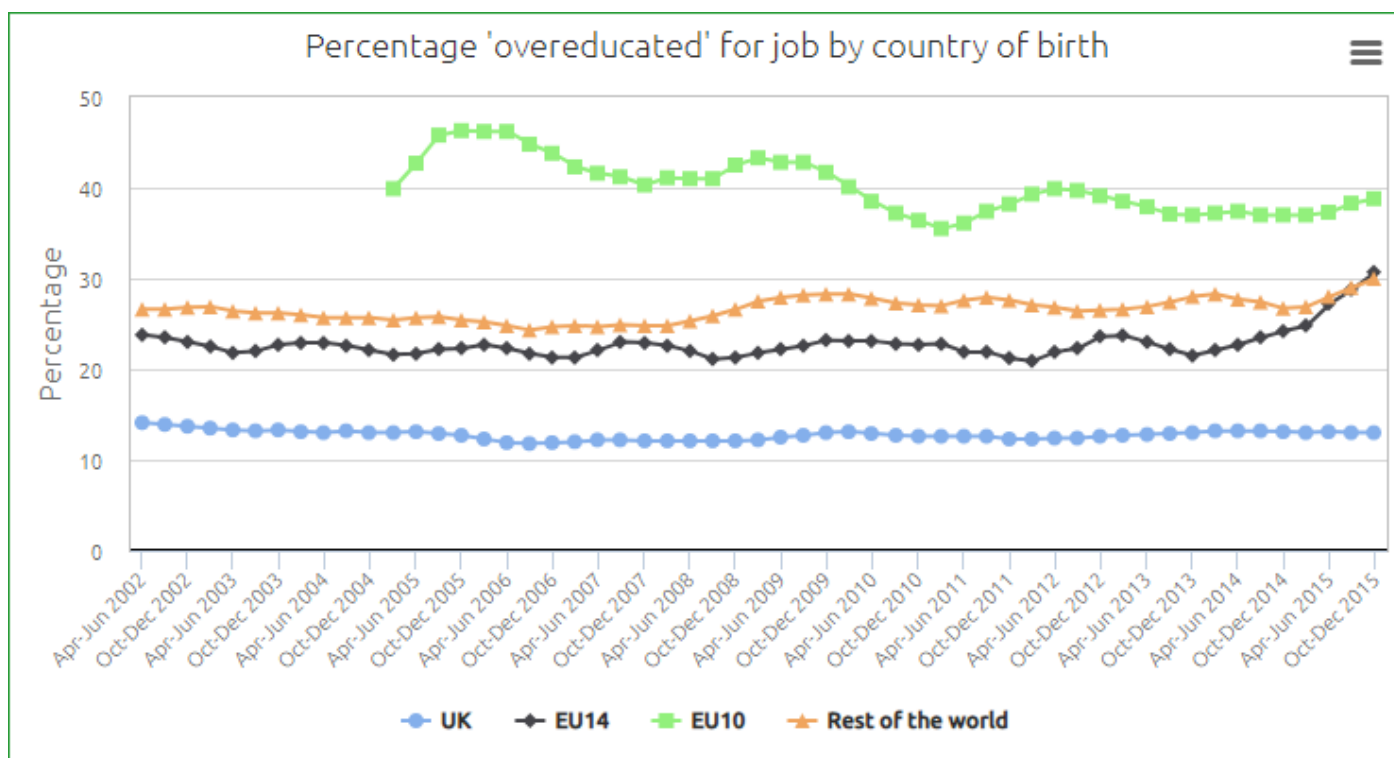


13. Indeed the authors noted 'we should be careful about generalizing our results to all countries'. Those who point to this paper as evidence that low-skilled migration to the UK is beneficial generally gloss over this cautionary note.

14. While the authors did not report country-by-country results, they did say that if the demand is mainly for low-skilled migrants in rapidly growing low-skilled sectors it is unlikely that labour productivity will increase as a result. That appears to describe the UK's experience certainly in relation to the large increase in migration from Eastern Europe, most of which has been into lower-skilled occupations despite the individuals in questions often being over-qualified for such positions.

15. An earlier study carried out for the OECD 'Immigration and Economic Growth in the OECD Countries, 1986-2006' [Boubtane and Dumont 2014] did include results for the UK, but relates to the period 1986-2006 and therefore covered a period of immigration to the UK dominated by selective immigration for skilled work from non-EU countries. Figure 4 above shows the very small contribution made by self-selecting workers from the EU prior to 2004, and that even by 2006 their numbers were small in comparison to entries subject to immigration controls. The study does not therefore have much applicability to migration from the EU allowed by free movement under the EU Treaties which has been characterised by a very large inflow of citizens from East European countries, many of whom might be well educated, but who on the whole have worked in lower paid jobs that are not high-skilled. The disconnect between skill levels and actual jobs was highlighted in the Migration Advisory Committee's 2014 report, '*Migrants in low-skilled work*', and a subsequent analysis by the Office for National Statistics (ONS) in 2016 found that while migrant workers were very much more likely to be working at a lower level than their qualifications would imply, this was so to an even greater degree for Eastern European workers, and that there had been a noticeable increase in 'over qualification' for all migrant workers whatever their origin in the most recent years.

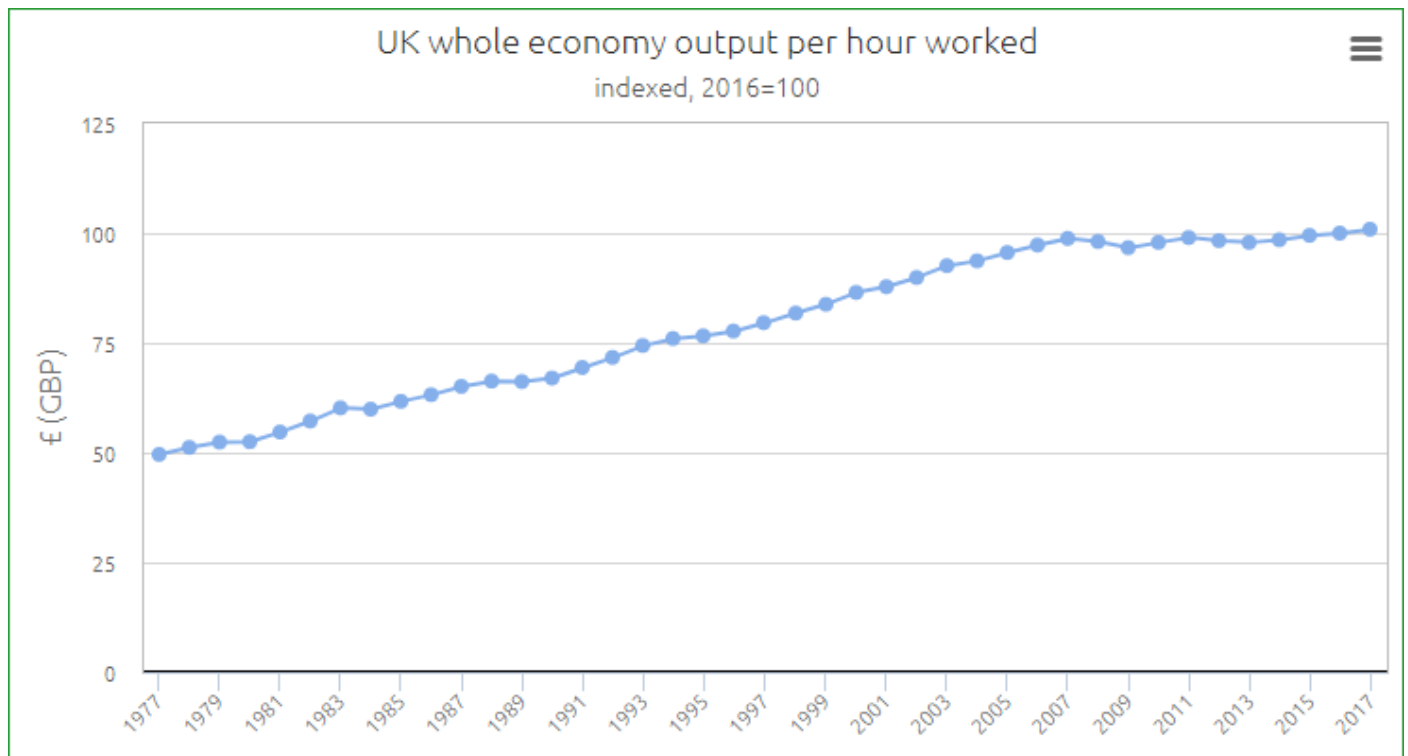
Figure 6: Percentage 'overeducated' for job by country of birth.



16. A further paper 'Immigration, Trade and Productivity in Services: Evidence from UK firms' [Ottaviano et al 2018] focused on productivity changes in the UK service sector at the company/firm level. It found that immigration was productivity-enhancing, but noted that over the period observed, 'twice as many immigrants worked in professional and managerial occupations relative to other less-skilled occupations' and that the points-based system from 2002 was precisely intended to target highly skilled immigrants. The authors specifically note that the 2004 accession of Eastern European countries, altering the composition of new immigrants and tilting it toward the less skilled occupations, took place very late in their sample.

17. These papers provide support for the argument that controlled immigration focused on the admission of relatively small numbers of highly-skilled workers to highly-skilled jobs may be productivity enhancing. However since 2006, despite the number of immigrant workers growing by over two million and the migrant share of the workforce nearly doubling, productivity has flat-lined.

Figure 7: UK whole economy output per hour worked. Data from 'Labour productivity key measures', ONS.



18. Of these additional migrant workers, large numbers have not been subject to any control on admission as they have exercised newly acquired rights to free movement following the accession of their home countries to the EU, so there has been no selection on the basis of skill level either of individual or job.

19. In view of the limited evidence base for the UK regarding the potential impact these inflows might have had on UK productivity and thus what lessons there might be for immigration policy in the future, the Migration Advisory Committee commissioned three new pieces of research for its Final Report on EEA migration [MAC 2018].

20. The first of these 'The Impact of Migration on Productivity and Native-born Workers' Training' compared regional and sectoral differences in the migrant share of the workforce with variation in productivity to estimate the impact of immigration on productivity using data covering the period 2004-2015 [Campo et al 2018]. The authors note conceptual difficulties with establishing a clear relationship between immigration and productivity, identifying the potentially non-random distribution of immigrants across labour markets as a key issue in establishing the *causal* impact of migration.

21. If immigrant flows are driven by productivity rather than vice versa or if changes in migrant worker flows and productivity are both driven by a further different variable then a simple regression of productivity on immigration may yield statistically biased estimates and erroneous results. They note that while it seems intuitively more likely that migrant workers will choose areas with more favourable labour market conditions, for example with more job opportunities and higher wages where productivity is likely to be higher, the direction of such bias in their regression estimates was not obvious. Thus either immigration flows might tend to be greater to low productivity areas because these seek more workers to expand or maintain output (rather than improving productivity to do so) or they might be greater to

high productivity sectors which are more attractive and likely to be growing.

22. The authors state that they attempted to tackle the issue of such endogeneity related to the non-random distribution of immigrants across regions or sectors by employing a shift-share instrumental variable approach. The purpose is to create counterfactual inflows that should be correlated with the real-world inflow but uncorrelated with local economic or labour market developments including, critically, sector or region-specific trends in productivity that on the demand side, may influence actual immigration flows.

23. They reported their results as suggesting that immigration overall had a positive and significant impact on productivity over the period 2004-2015, with a one percentage point increase in migrant share associated with a 2.96% increase in productivity at the local authority level. However they were unable to construct reliable estimates of impacts at a sectoral level i.e. by industry, or to distinguish between the impact of EU and non-EU migration. They noted that these results were not apparent in their initial estimates, but emerged only when they use the instrumental variable approach to identify causality. The implication of this they stated as being that immigration had been in fact concentrated in areas with slower productivity growth: or rather, areas that would have seen, absent immigration, slower growth, but that the influx of immigrants helped boost their productivity growth back to the overall average.

24. They further noted that their results showed consistently more positive results for immigrants with higher levels of education or working in higher-skilled occupations. When distinguishing between education levels, these results were that a one percentage point increase in the tertiary-educated migrant population was associated with a one percentage point increase in productivity (on a GVA per head measure) but that a similar increase in non-tertiary-educated migrant population was associated with a decrease in productivity of just under one percentage point.

25. When disaggregating estimates by the skill level of jobs occupied by migrants rather than by migrants' own skill level the authors found positive results for productivity resulting from migrants in both higher-skilled occupations and lower-skilled occupations, although they said that the latter result for migrants in low-skilled occupations should be treated with some caution. Notwithstanding this caution, it seems possible that the marked degree of over-qualification of migrant workers illustrated in Figure 6 could at least in part explain such a result. That is, individuals qualified to a higher level than the job requires might well perform better than those whose qualifications merely match the requirements for the job.

26. On the other hand, it is notable that the overall result differs very significantly from the estimates by Boultane et al for the preceding period 1986-2004 which in the UK's case was that one percentage point increase in the foreign-born share of the workforce was associated with a 0.4-0.5 per cent increase in productivity, rather than the 2.96% of Campo et al.

27. The second of the papers commissioned by the Migration Advisory Committee, 'Migration, Productivity and Firm Performance', focuses specifically on Total Factor Productivity, the variable illustrated in Figure 1 above, and examines the relationship between firm-level TFP by region and its relationship to migrant share in the firm's region [Smith 2018]. The author found that over the period 1998 to 2014 all regions exhibited a positive relationship between migration and the productivity of firms in that region with the largest positive relationship between migration and productivity in the North East and Scotland and the smallest in London. This might be thought to be an interesting result worthy of further enquiry when the North East and Scotland have the smallest migrant share in the UK of

the regions included in her analysis and London has by some margin the largest. Whilst it is possible that it derives from regional differences in migrant characteristics such as skills levels or regional differences in firm characteristics such as distribution across industry sectors it is also possible that it indicates diminishing returns from increasing migration.

28. The final paper on productivity was 'Examining the Link between Migration and Productivity' [Costas-Fernández 2018]. This also examines the period 1998 to 2014. The author notes that the raw correlation between the migrant employment and productivity is negative and larger for low skilled immigration, that the immigrant over-representation in high skilled occupations (noted by Ottaviano et al) had been decreasing since 1998 and that by the end of the sample in 2015 immigrants were over-represented in low skilled occupations in almost all sectors. Utilising a variety of different specifications, results differed markedly depending on method used, with one method pointing towards UK-born workers being more than twice as productive as migrants and another pointing towards migrants being almost three times as productive as UK-born workers.

29. In its own comments on the paper, the Migration Advisory Committee noted that while the eventual central estimates suggested that an additional migrant worker employed would be around two and a half times as productive as an additional UK-born worker, the 95 per cent confidence interval for the relative productivity of migrants to UK-born workers ranged from 25% cent more productive to over 500% more productive and stated 'Ultimately, we consider some of these values implausible'. Indeed, rather than endorse them, the Committee said merely that the results suggested that they were 'little evidence that immigrants are less productive than UK-born workers' [emphasis added].

30. Whilst the Committee also noted that it was not possible for the author to produce reliable estimates separately for EEA and non-EEA migrants, he calculated a counterfactual to estimate the difference to productivity made by the rapid increase in immigration from Eastern European accession countries from 2004 onwards. The result was that overall, if immigration growth from these countries were to be at pre-2004 levels, labour productivity would have been virtually unchanged. This accords with the lack of findings in much of the other research of any positive impact of low-skilled migration.

31. The overall conclusion of the Migration Advisory Committee in its Final report was that most of the studies it had considered (previous research as well as its own commissioned papers for the UK) did find that immigration raises productivity but observed that not only were these estimates subject to a lot of uncertainty, but that 'in many cases the implied magnitude of the effects seemed implausibly large *even though there was no obvious methodological flaw to the studies*' [emphasis added]. It observed that a common problem is that it was 'often hard to distinguish the share of migrants from a simple trend at industry or regional level so that other trends are ascribed to migrants or the estimates become very imprecise'.

32. That this latter is potentially a problem is well known as is the potential ensuing endogeneity, for example as described above in the discussion of Campo et al. All of the three papers commissioned by the Committee appear to have sought to address this by using a shift-share instrument. Smith devotes an extensive explanatory section (pp 19-23) in her Appendix 2 to the use of such an instrument, which has been conventional in immigration studies for some years.

33. More recently, however, the use of such instruments has been increasingly called into question, see for example Jaeger et al 2018. The authors note that this approach is unlikely to identify a well-defined causal effect of interest when there is only limited change in the country-of-origin composition of

immigrant inflows at the national level because in such a setting, the inflow rates of immigrants across regions will tend to be highly serially correlated. This is predicated on the assumption that new immigrants from one country of origin tend to follow previous immigrants from the same country of origin. In the UK over the periods observed the growth in migrant share was divided almost equally between immigrants from countries with large existing populations in the UK and immigrants from countries with essentially no existing population in the UK. These two groups are further likely to have been distinguished by skills levels. It is possible that whilst not a methodological flaw per se, the methodology might not have sufficiently protected against bias as a result.

34. However even if this were to account for the apparent implausibility to the upside of some of the results, and whilst the Migration Advisory Committee found that the evidence on the differential impact of high versus low- skilled immigration was not entirely conclusive, the evidence does point to high-skilled migrants having had a positive impact on productivity. It is by no means as clear that lower skilled migrants have had any positive impact and indeed some of results suggest no positive impact at all.

Conclusion

35. Productivity, vital to the economy, may be enhanced by migration into highly-skilled work which might introduce investment, innovation, and transfer of expert knowledge. This underpins and makes rational strategies to attract and admit 'the brightest and the best'. The evidence on productivity provides a clear economic welfare justification for selective migration policies. It does not provide support for uncontrolled self-selecting immigration or for any relaxation of present qualification requirements for immigration for work in the UK.

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