

making population projections – a question of timing?

The ONS's user engagement on the timing of its next round of population and household projections suggests a more flexible approach that is also evident in the reports accompanying the latest sets of projections from the ONS and the GLA; and, as [Tony Champion](#) explains, users are increasingly being invited to consider the relevance of alternative 'variants' around any central projection – notably on the internal migration component because of its sensitivity to the length of the base period used to project forward from

The user consultation which the Office for National Statistics (ONS) carried out towards the end of 2020 followed up on the suggestion made in its latest round of projections that the next round should be delayed by a year.¹ Traditionally, the ONS has operated a two-year cycle, with the latest being the 2018-based set, which comprised the National Population Projections (NPP) for the four UK countries released in November 2019 and the subnational set for England (SNPP) in March 2020, the latter feeding into its household projections in June 2020.

The ONS's proposal that the next set should be 2021-based rather than 2020-based would mean that the initial results of the Census to be held on 21 March could feed into this process, while the various effects of the COVID-19 pandemic should also be clearer by then. The postponement of the Scottish Census to 2022 would, however, provide a case for a further year's delay, along with this giving more time for the effect of Brexit and a new immigration policy to be assessed. But apparently some of the users of these projections felt that a delay of even one year, let alone two, was undesirable. Timing therefore appears to be a big issue.

At the same time, there seems to be an increasing tendency for the producers of population projections to urge caution on users and suggest that they adopt a degree of flexibility in interpreting them. The ONS's 2018-based SNPP included four variants in addition to its principal projection, including two

based on alternative calibration periods for setting its assumptions on internal migration.² As detailed in a separate ONS report,³ this was because its principal projection was based on just the two previous years' records (i.e. mid-2016 to mid-2018) rather than the normal five years – this being because the method of estimating between-area migration had been improved in 2016.

The ONS recognised, however, that those two years may have been atypical for some local areas, so it also released an 'alternative' projection based on the latest five years of data (mid-2013 to mid-2018), as well as repeating the 10-year-based (mid-2008 to mid-2018) variant first provided in the previous (2016-based) round. Users were invited to choose between them: 'The variant projections are available as an alternative for anyone who considers that the respective outcomes are more likely, or are more helpful for their specific purposes.'⁴

The Greater London Authority (GLA) has taken this a step further in its 2019-based projections for London and the rest of the UK, released in November 2020, by abandoning its previous practice of having a single 'central' projection.⁵ Instead, out of its full suite of 13 alternative projections (nine variants and four scenarios), it focuses primarily on four variants. Two are based on alternatives to the central assumption about the level of net immigration from abroad and are labelled 'High population' and 'Low population'. The other two vary the internal migration

trend length, namely the 'Central Upper Bound' variant using the previous 10 years of data and the 'Central Lower Bound' one using the latest five years of data when London's migration to the rest of the country was accelerating.

The GLA's report on these variants contains charts of London's annual projected populations for 2019-2050 in which the space between these latter two variants is shaded in, thereby giving users the impression that the most likely trajectory lies somewhere between them.

The other distinctive feature of the GLA's 2019-based projections is that they make an allowance for the impact of COVID-19. This was not possible in the ONS's 2018-based SNPP: indeed, those were released in the week that the first national lockdown was imposed. Taking advice from a panel of experts, the GLA assumed an overall 30% reduction in both international and within-UK migration for the three years ending mid-2022 (which it adopted for all its variants), and also assumed that normality would not resume until 2028 (doing this by trending migration rates up to their projected long-term rates over each of the intervening six years).

Clearly, there is plenty of scope for the ONS's and the GLA's projections to differ, not least due to the alternative periods that each has adopted as the basis for their internal migration assumptions, but also with the GLA having one additional year of migration data to mid-2019 and the experience of several months of the pandemic. And what a big difference these factors make!

The difference that timing makes

The ONS has helpfully spelt out some of the differences arising from adopting its three alternative migration trend lengths.

Table 3 of its report³ lists the local authorities with the greatest differences in 2018-2028 population change rate between its two-year-based and five-year-based projections, with its Table 4 doing the same for the differences between its five-year-based and 10-year-based results.

Particular attention is given to the case of Stratford-on-Avon, which heads the list in its Table 3, with a 6.3% difference in growth rate: the two-year-based (principal) projection gives a population of 145,400 for 2028, up by 17,800 or 14% from its 2018 level of 127,600, while its five-year-based 'alternative' gives a 2028 figure of 137,300, i.e. up by 9,700 or just under 8%. Taking the longer base thus produces growth that is not much more than half of the two-year-based one.

The report then shows that this difference arises primarily because Stratford's net migration gain from the rest of the UK rises steadily over time from 400 for the year ending mid 2014 to 600 and 700 for the next two years, and then jumps to 1,700 and 2,400 for the final two years after the new method was

introduced. At first glance, it looks as if the new method has had a big impact, but more detailed inspection of the ONS's dataset reveals that the method change was responsible for less than 60 of the 1,000 uptick between 2016 and 2017. The acceleration in Stratford's migration intake over this period was real.

So, which of the two (or three if including the 10-year-based variant that gives just 133,200 for 2028) should those interested in Stratford's future population growth opt for? Clearly, local intelligence is needed to establish whether this recent uptick in its migration balance has derived from developments that can be expected to continue into the future or is more related to short-term factors such as the stage in the regional house-price ripple and/or cyclic fluctuation in out-migration from South East England.

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The same questions need to be faced in other parts of England, perhaps most notably in Greater Manchester. Here, planners were surprised by the positive shift in growth rate for the northern boroughs that the 2018-based projection indicated, along with a similarly unexpected reduction for the City of Manchester.

Again, this reflects a change in the recorded within-UK migration balances of these two parts of the conurbation since 2016; so was this because of the change in method? This was considered possible because a key part of the method change was the fuller recording of students leaving university cities at the end of their courses (hence the new method being dubbed the Higher Education Leavers Methodology or HELM), and Manchester – along with neighbouring Salford – is a major centre of higher education.

Further investigation of the ONS data for Greater Manchester, however, reveals that, as with

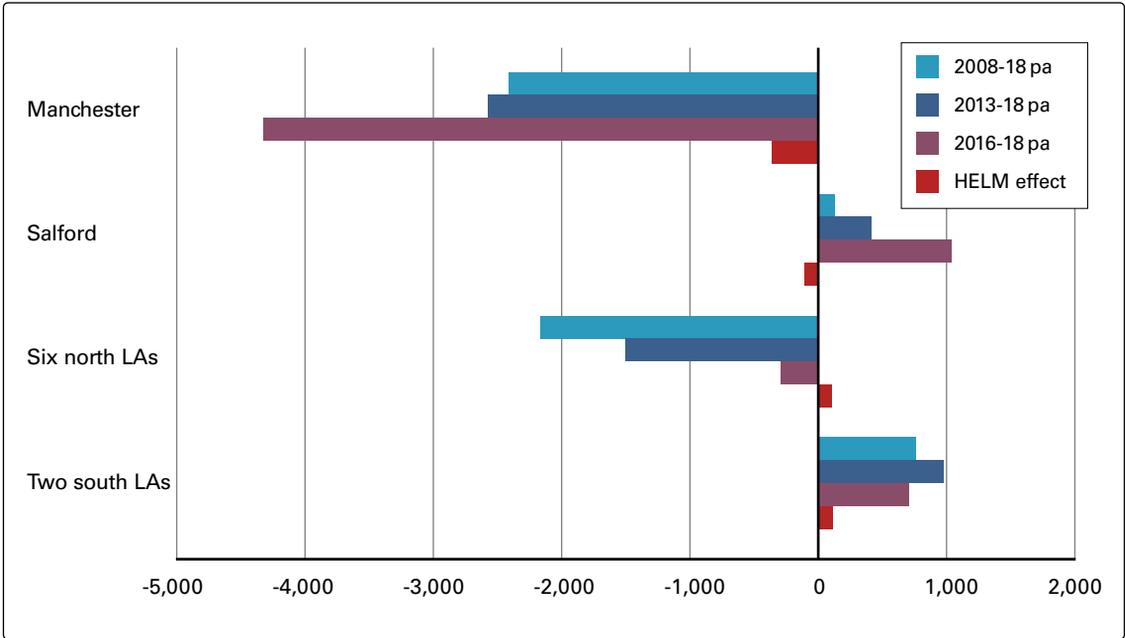


Fig. 1 Greater Manchester: annual average net within-UK migration, 2016-18, 2013-18 and 2008-18, plus HELM effect, by area

Source: Author's calculations from ONS data

Stratford-on-Avon, the method change played very little part in these migration shifts. As shown in Fig. 1, HELM did have the effect of reducing the net migration balances of Manchester and Salford and increasing those of the rest of the county, but the scale is minor compared with the overall change in migration balances. For Manchester itself, the HELM effect raised its net out-migration by some 370, barely one-fifth of the uplift between its five-year average (for 2013-2018) and its two-year average (for 2016-2018). Equally, the HELM effect for the six northern boroughs combined was minuscule in relation to the impressive reduction in their net within-UK migration loss in recent years. So, again, the question for users is whether this switch in trends within the county reflects a deep-seated change that can be expected to continue for many years or arises from short-term factors or 'period effects'.

But the real elephant in the room is London. This is partly because of its huge size and being well known for its large swings in migration that broadly reflect business cycles,⁶ but it is also because its migration exchanges with the rest of the country by definition affect population change there, as well as in the capital itself. Some London boroughs already feature in the ONS's analyses of differences between its three migration variants, notably with Barking and Dagenham displaying a big difference in overall 2018-2028 growth rate between the principal projection and the five-year-based variant (3.8% and 10.0%, respectively – a difference of 6.9% points)

and with London boroughs comprising four of the six areas in England with the biggest difference in growth rate between the 10-year and five-year bases.

The main reason why London boroughs appear in these rankings of the largest growth rate differences is shown in Fig. 2, on the next page. This updates the 2001-2016 chart published in the July 2018 issue of this journal⁷ with the latest available data through to the year ending mid-2019, separating out the latest three years that are based on HELM. In fact, as for our previous two examples, the change in method makes very little difference here, too, with HELM giving a net out-migration level only some 3,300 short of the old method. This pales into insignificance beside the almost 80,000 difference between the lowest net loss recorded for the year ending June 2009 and the other extreme of highest net loss in 2003-04, with the annual trend continuing a cyclic pattern that dates back to the start of this data series in the 1970s.

From Fig. 2 it is abundantly clear that the two years ending June 2017 and 2018 which form the basis of the ONS's principal projection are certainly not typical as far as London is concerned. Its average net exodus of 105,000 for those two years is considerably in excess of the 90,000 average for the latest five years, and far higher than the 67,000 average for the latest 10 years. The 38,000 difference between the latter figure and the two-year average is a large one: grossed up over the 25 years of the standard projection period, it translates into a

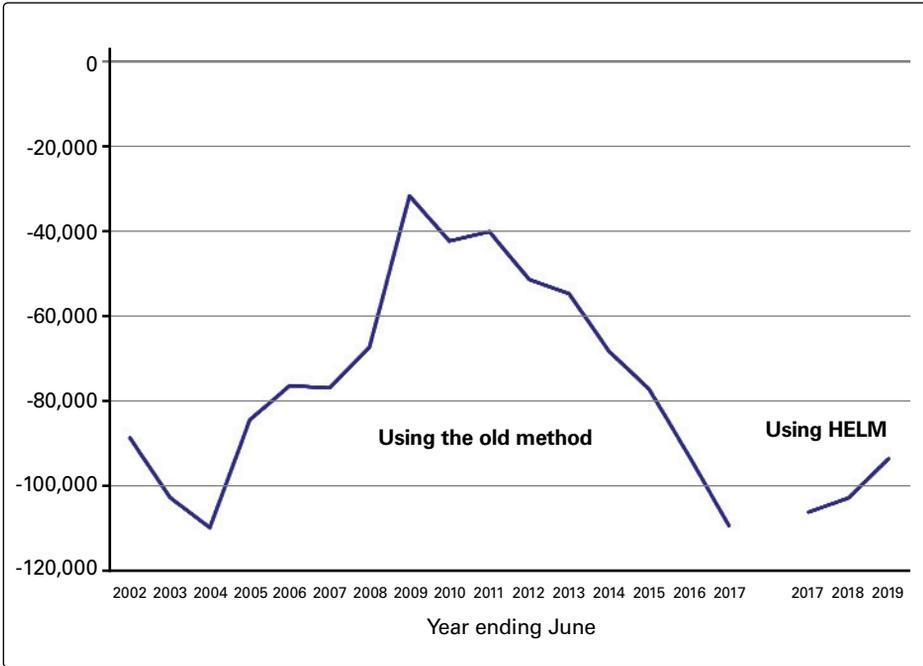


Fig. 2 London's net migration balance with the rest of the UK, using the old method, 2001/02-2016/17, and the Higher Education Leavers Methodology (HELM), 2016/17-2018/19
 Source: Author's calculations from ONS data

950,000 greater net exodus from London under the ONS's principal projection, all other things being equal.

Everything else is not equal, of course, because no component of population change operates completely independently of the others. The exodus from London is dominated by people in their 30s and early 40s, so any increase in its volume will mean fewer children being born there and more in other parts of the country. Similarly, any change in the number of older people leaving London will affect the future number of deaths there.

'Potentially, the internal migration variants hold important implications for the future population sizes of both London and other parts of the country'

Perhaps most important, however, is the link with London's gains from international migration, whereby the periods of higher net out-migration from London to the rest of the UK tend to coincide with periods when larger numbers are arriving in the capital from abroad. Whatever the reasons behind this link – some kind of displacement effect and/or both types of migration responding to an economic upturn that attracts more people to the UK while at the same time freeing up the housing

market – the extra overseas arrivals will help to offset the effect of the higher exodus to the rest of the UK. Unfortunately, this relationship is not included in the projections methodology of either the ONS or the GLA, unlike the effect of the net exodus on births and deaths, so users need to exercise caution in this regard.

Potentially, however, the internal migration variants hold important implications for the future population sizes of both London and other parts of the country. For example, focusing on the 20 years between mid-2020 and mid-2040 that are covered by both the ONS's and the GLA's projections, Fig. 3, on the next page, shows that London's population is projected to grow by some 685,000 under the ONS's principal projection, which is not much more than half of the 1.22 million increase projected under its 10-year variant.

A similar range is found in the GLA's projections between the one based on the latest five years of data and an additional internal-migration variant that assumes a return to the difficult economic climate that followed the global financial crisis of 2007. The GLA's outturn population increases for its five- and 10-year-based projections are both a bit larger than the ONS's equivalents, this being mainly due to its allowance for COVID's dampening effect on the next few years of migration, as well as adopting a somewhat higher level of longer-term immigration from abroad than the ONS. At the top end, the 'Great Recession' variant suggests that London's population could grow by 1.6 million over the two decades, i.e. by nearly a million more than the ONS's principal projection indicates, and

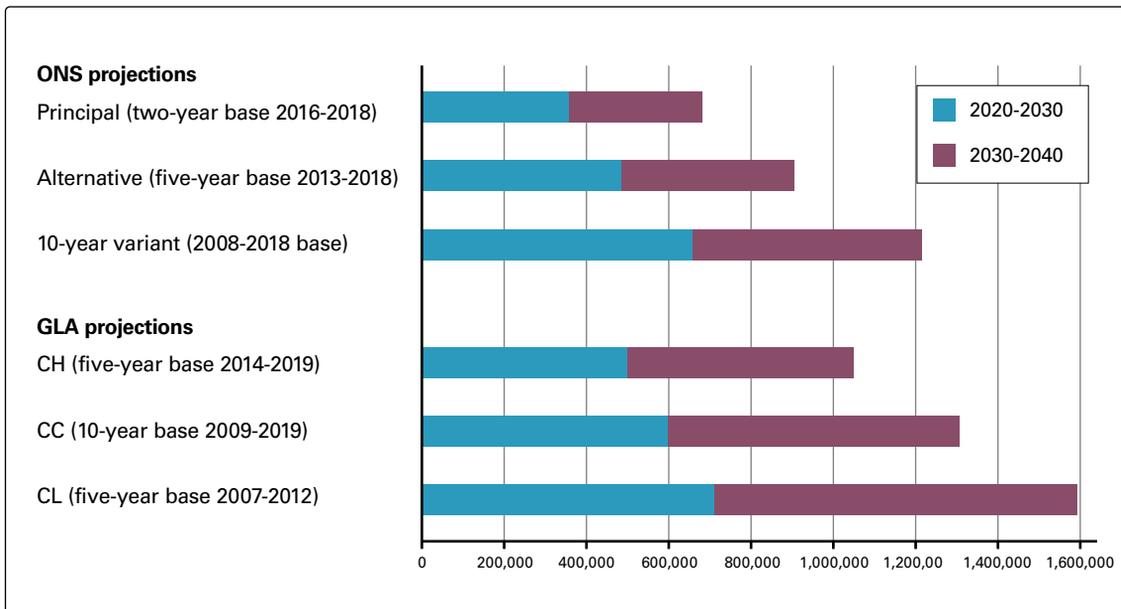


Fig. 3 London's population growth, 2020-2040, as projected using alternative base periods for within-UK migration
 Source: Author's calculations from ONS and GLA data

even for just the 2020s the difference is one of some 350,000. This variant was not one of the four that the GLA highlighted in its report, but can it be ruled completely out of contention given current events?

Finally, as mentioned at the outset, what transpires for London is bound to have significant impacts on the whole country: London's migration exchanges are certainly not limited to its neighbouring regions and are likely to be partly responsible for the uncertainty over Stratford-on-Avon, and possibly the Manchester case too. Table 1, on the next page, takes the two extreme sets of projections shown in Fig. 3 and shows the population growth projected for the 2020s for the rest of England divided into four broad regions. The difference of around 350,000 for London, already mentioned, equates to a 3.9% point difference in growth rate for the decade. Interestingly, despite this being primarily due to lower out-migration, the impact is not on the adjacent Wider South East, which also sees stronger growth under the GLA's CL projection (five-year base 2007-2012), because like London this also experiences a slowdown in its net migration exchanges with the rest of England.

Instead, the main impact is felt further afield, with the South West, the Midlands and the North all seeing lower rates of growth under this scenario compared with the ONS's principal projection, which incorporates a much higher level of net out-migration from London. The latter suggests that the government's regional levelling-up agenda faces less of an uphill struggle – in population terms at least – under the conditions pertaining in recent

years than during and after the 'Great Recession', so from that perspective it must be hoped that the economic knockback caused by current events take on a different shape from those of a decade ago.

Paying heed to variant assumptions

In sum, given the big differences that the length of time used for calibrating migration assumptions makes, it is clear that the choice of timing of the next round of projections requires careful consideration of all the available evidence. The examples above suggest that a two-year base can throw up significant departures from the longer-term picture that should be checked before being used to project ahead for even a decade, let alone the normal 25-year horizon. In particular, the case of London provides support for the 10-year base that the GLA has traditionally used for its 'central' projection of migration.

Given current circumstances, though, the government might be considered prescient in recently reaffirming that planners should continue to use the ONS's 2014-based projections for housing needs assessment.⁸ With these being based on 2009-2014, they may yet turn out closer to what unfolds over the next few years than any of the six alternatives covered above. On the other hand, the overall rate of national population growth of around 2.5 million currently being projected for 2020-2030 (see Table 1) is considerably below the extra 3.7 million expected from the 2014-based projections, while there is now speculation⁹ that national population growth may weaken further due

Table 1**Projected population growth, 2020-2030, for regions of England, based on the ONS's 2016-2018 based principal projection and the GLA's 2007-2012 based variant**

Broad region	ONS principal (based on 2016-2018)		GLA CL (based on 2007-2012)		Difference	
	thousands	%	thousands	%	thousands	% point
London	362	4.0	711	7.9	349	3.9
Wider South East	642	4.1	768	5.0	126	0.8
South West	354	6.3	231	4.1	-123	-2.2
Midlands	650	6.0	415	3.8	-235	-2.2
North	495	3.2	353	2.3	-143	-0.9
England total	2,503	4.4	2,477	4.4	-26	0.0

Source: Author's calculations from ONS and GLA data

Notes: Wider South East comprises the South East and East of England regions; North comprises the North East, North West and Yorkshire & Humberside

to the latest signs of rising death toll, falling birth rate, and reduced net immigration.

Taken along with concerns over how far the pandemic will affect the operations of the forthcoming Census, the only certainty is that there is no ideal time for making population projections. Having said that, whatever time is chosen, there is no substitute for users following ONS advice and checking the assumptions for the variants as well as those of the central projection in order to see which relate most closely to their area of interest.

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Notes

- 1 *National and Subnational Population Projections – Update on Our Invitation for User Feedback: December 2020*. Office for National Statistics, Dec. 2020. www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/articles/invitationtoprovidefeedbackontimescalesforfuturenationalandsubnationalpopulationprojections/december2020
- 2 *Subnational Population Projections for England: 2018-based and Methodology Used to Produce the 2018-based Subnational Population Projections for England*. Office for National Statistics, Mar. 2020. www.ons.gov.uk/releases/subnationalpopulationprojectionsforengland2018based
- 3 *Impact of Different Migration Trend Lengths: March 2020*. Office for National Statistics, Mar. 2020. www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/articles/impactofdifferentmigrationtrendlengths/march2020
- 4 *Impact of Different Migration Trend Lengths: March 2020* (see note 3), p.8
- 5 *2019-based Trend Projections: Analysis of Variants*. Greater London Authority, Nov. 2020. <https://data.london.gov.uk/dataset/trend-based-population-projections>

- 6 I Gordon, T Champion, N McDonald and C Whitehead: *Review of Research on Migration Influences and Implications for Population Dynamics in the Wider South East*. Report for the East of England Local Government Association. LSE, Dec. 2017. www.lse.ac.uk/business-and-consultancy/consulting/consulting-reports/review-of-research-on-migration-influences-and-implications-for-population-dynamics-in-the-wider-south-east
- 7 T Champion: 'How many extra people should London be planning for?'. *Town & Country Planning*, 2018, Vol. 87, Jul., 251-57
- 8 'Housing and economic needs assessment'. *Planning Policy Guidance*. Ministry of Housing, Communities and Local Government. Para. 005, 'Why are 2014-based household projections used as the baseline for the standard method?', Ref. ID: 2a-0050-20190220. Updated 16 Dec. 2020. www.gov.uk/guidance/housing-and-economic-development-needs-assessments
- 9 M O'Connor and J Portes: 'Estimating the population during the pandemic'. Blog Entry. Economic Statistics Centre of Excellence, 14 Jan. 2021. www.escoe.ac.uk/estimating-the-uk-population-during-the-pandemic/