LONG ABSTRACT
The impact of international migration on England's local ethnic populations in the first half of the 21st century

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The last decade in the UK has been one of considerable change in demographic dynamics. Life expectancy has improved annually by 0.25 of a year (to 2007), total fertility has increased by 0.3 of a child (to 2008) and net international migration has risen by 50% (to 2007). As a result the projected future population has increased considerably. The UK population in 2031 was projected to be 65.6 millions in 2000; this had risen to 70.9 millions in the 2008-based projections. These developments have been paralleled by increases in the ethnic diversity of the UK population. The White British population decreased 2001-7 from 87 to 84% of England's population while the ethnic minority population increased from 13 to 16%. This shift in composition is a result of several factors: the demographic momentum in established ethnic groups as a result of young age immigration in the 1960s to 1990s, increases in immigration in the 2000s from the new EU member states and from "failed" states contributing to a flow of asylum seekers, the higher fertility of some immigrant groups balanced by higher death rates among most ethnic minorities.

These demographic developments have informed the estimation by a team of researchers at the University of Leeds of fertility rates, mortality rates, internal migration probabilities and international migration flows for the sixteen ethnic groups which are used in official statistics to differentiate the population. We have employed these estimates, along with assumptions about the future development of each demographic driver, to generate population projections by ethnic group. The projections have been carried out for local authorities in England together with the other home countries as single zones and in single year of age detail to mid-century, 2051. In effect, these projections show what happens when immigrants settle in a country.

Several sets of projections have been implemented to date.

A first set, *benchmark* projections, based on 2001 demographic rates estimated from the 2001 Census and assumed constant in the period 2001-2051, show much lower population growth to 2031 and decline thereafter.

A second set, *updated* projections, in which we use estimated rates for ethnic groups fixed to published demographic statistics in the period 2001-2006 but assumed constant thereafter, show growth to 2021 that nearly matches the National Population Projections (NPP) but which then slows to a stationary trajectory by 2051.

A third set, *mortality trended* projections, show what happens when we adopt continuing decline in mortality at a long term rate of 1%, with other rates or flows held constant. These show that 4.5 million people will be added to the population compared with the second set of projections. The additions occur in the older ages and demonstrate what happens when the baby boomers age under a regime favouring ever better health and longevity.

A fourth set, *official trended* projections, show what happens when we feed in assumptions aligned as closely as possible to the NPP. Our projected populations, however, fall well

below official numbers, 72.5 million people in the UK in 2051 compared with 77.5 million in the NPP (2008-based). The reasons for the differences are being investigated.

We plan further projections to test the sensitivity of the projections to assumptions, in particular the impact of adopting different long run assumptions about international migration flows and different assumptions about the distribution of immigrants and emigrants to local areas, which can effect local population projections profoundly.

Because our projections are based on 352 local authority areas in England with the three other home countries, we can examine the implications of internal migration structures and variations between local areas in the other components on the *future spatial distribution* of the different ethnic groups. Here we see two things happening: most communities become more ethnically diverse but that the greatest growth in ethnic minority populations is outside the local areas of highest concentration. The spatial segregation of virtually all groups falls substantially between 2001 and 2051, at an average rate of 0.7% per annum.

These projections provide an insight into what the future population of a society that has received five decades of net immigration inflow might be like at mid-century, provided, of course, there are not huge surprises in the next four decades.