Environment, migration and the European demographic deficit

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Received 31 October 2011
Accepted for publication 20 February 2012
Published 15 March 2012
Online at stacks.iop.org/ERL/7/015605

Abstract

Many countries in the more developed world, and some in the less developed, are facing new economic and social pressures associated with the ageing of their populations. Europe, in particular, is forecast to have a demographic deficit, which may be alleviated by in-migration to the region. However, several commentators have proposed that Europe will not be able to successfully compete with other regions, in particular Asia, in the coming years for the skills it will require. This letter explores these themes, arguing that climate change will increase the attractiveness of Europe as a destination of economic choice for future skilled workers, to the detriment of more environmentally challenged regions.

Keywords: demography, migration, climate change

1. Population structures

The current demographic profile of most regions of the world is population ageing—or more accurately age-structural transition—associated with the late stage of the demographic transition (Bloom et al 2003, Pool 2005). There is significant debate both around the drivers of this transition and the identification of a second demographic transition (Bongaarts and Feeney 1998, Bucht 1996, Cliquet 1991, Lutz and Goldstein 2004, Van de Kaa 1987, Vaupel and Lundström 1994). Typically associated with economic development, this is the decrease in both mortality and fertility rates. Mortality rates fall first, including infant mortality, enabling the survival of large birth cohorts into adulthood. Then population growth levels off and the profile of the population ages, as late life mortality rates fall and individuals survive to increasingly older ages. The second demographic transition it is argued brings sustained fertility below replacement level and declining populations if they are not maintained by migration.

The regions of the world are in different but converging stages of demographic transition. As a consequence some authors have attempted to re-categorize the globe in terms of its demographic development (Holzmann 2005). Most more developed countries are now in late stage, with a steady structural ageing of their populations, experiencing an increase in the percentage of older populations. Those in the less developed—especially in Asia and some parts of Latin America—are experiencing steady falls in both fertility and mortality rates, and are predicted to rapidly structurally age over the next couple of decades. It is projected that by 2050 the global number aged over 60 will triple to reach 2 billion. The numbers of those aged 80 and above will show an even greater rate of increase, rising from 69 million to 379 million by 2050. By this definition, the Asian/Pacific region is already the oldest world region and by 2050 will alone hold two-thirds of the world’s 2 billion elders. However, most countries in the least developed world still retain high rates of mortality and fertility.

Predicted population changes in Europe have highlighted two possible concerns: population contraction and population ageing. The world’s population has risen from 2.5 billion in 1950 to 7 billion today, increasing at some 76 million people a year. By 2050 the world will have some 9.8 billion people and a growth rate around 34 million a year. However, 95% of all population growth is occurring in the less and least developed countries. The population of the more developed is predicted to remain at around 1.2 billion or decline. The EU27 countries in particular will see population shrinkage of around 0.2% per year between 2020 and 2045. Italy and Germany will be particularly affected with projected falls
from 60 million to 57 million in Italy between 2010 and 2050, and 82 million to 79 million for Germany. However, the predicted UK population will actually increase by 16% over the same period growing from 62 million in 2010 to 72 million by 2050, a reflection of its projected immigration over this time.

The second concern is population ageing. The historically unprecedented situation of more older people (here defined as aged 60 or over) than children (aged under 15) which will be reached globally by the mid-century, has already occurred in the more developed regions where in 2010 21.8% were aged 60 or over, and 16.5% aged under 15, projected to stand at 32.6% and 15.4% by 2050. At this time there will be twice as many older people as young and the proportion of ‘working age’ (15–59) will have declined from 62% to 52%. The EU27 currently has 22% aged 60 and over, predicted to increase to 29.3% by 2030, and 34.2% by 2050. The proviso here is that by 2050 ages 60 and 65 may no longer be a meaningful definition for ‘old age’, and the ‘working age’ population may be significantly extended beyond these boundaries.

2. Consequences of ageing on the EU economy

The next decade will thus see a rapid shift towards increased elderly dependency ratios (EDR), the number of persons of working age (aged 15–64) per person aged 65 or over in most more developed countries. The EU-25 elderly dependency ratio, for example, is set to double and reach over 50% by 2050, as the working age population (15–64 years) decreases by 48 million between now and 2050, and the EU-25 will change from having four to only two persons of working age for each citizen aged 65 and above (European Commission 2006). Italy, for example, will see its EDR double between now and 2050 to reach 70:100 workers. In contrast the UK will increase only slightly, reaching 67:100. By 2050, the EDR will also exceed 70:100 in Spain and Japan, while remaining below 40:100 in Denmark, Iceland, Luxembourg, Mexico, Turkey and the United States.

The so-called demographic deficit, while a contested concept, but one which is generally accepted in the economic literature, caused by these population changes is perceived to herald negative implications for both nations and regions (Lee and Mason 2010). There are a series of assumptions behind this view which coalesce around two broad themes. Demographic decline leads to decline in economic activity and demographic ageing leads to economic burden due to increased requirement for pensions and health care.

For EU-25, it is projected that age-related public spending (pensions, health and services for older adults) will rise by 3–4 GDP points between 2004 and 2050, representing an increase of 10% in public spending. This will be particularly pronounced between 2020 and 2040. The other side is the potential reduced capacity of ageing populations to finance pensions and long term health and social care. This is seen to depend both on the growth of labour productivity and on the employment rate. Average annual growth in the EU between 2004 and 2010 was 2.4%, projected to fall to 1.2% by 2030 due to the reduction in the working age population (WAP). In 2010 the WAP comprised 70% of Europe’s population, with older and younger dependents equal in size, and representing a total dependency ratio (TDR) of 46:100 workers, the lowest recorded figure for Europe since the second world war. From 2010 to 2050, the TDR will increase to 73:100 workers. Even the Jozefowicz and Pearce (2000) analysis, which uses high fertility assumptions, comes to the same conclusion that the prospects of anything other than a reversal of the decline in the WAP in Europe before 2050 are slim.

3. Migration as a solution to Europe’s demographic deficit

Immigration has increasingly become perceived as a potential means to prevent population decline, maintain the size of the labour force and thus the support ratio, and slow down structural population ageing. In particular immigration has a potentially strong and long-lasting impact on population growth and structure through the interaction between the number of migrants, their relatively young age structure and their higher fertility. However, there is general agreement that migration will not prevent the age-structural transition and demographic deficit of Europe but may slightly alleviate it (Coleman 2002, Espenshade et al 1982, Espenshade 2001, Feld 2000, Lesthaeghe 2000, Pollard 1973, Szczuk 2003). Migration can, however, at very high levels, avert future decline in the total population (United Nations 2000) and in the population of working age (Coleman 2004, 2006).

There is thus general consensus in the literature that migration is a valid policy approach in the context of a demographic deficit. Immigration to Europe will in the short term achieve immediate increases in total fertility rates, population growth and labour market contribution. However, these are unlikely to achieve full replacement level, to be unsustainable over the longer term, and indeed may eventually contribute to a worsening of the demographic deficit, as the total fertility rates of the immigrant population falls and they age in place. The impact on innovation, economic growth, employment in general and welfare are more complex and contested. Migrant workers fill both the demand for highly skilled workers and the gap in unskilled employment arising from young people’s unwillingness to undertake these jobs, particularly in the growing personal care sector. Indeed the role of migrants as carers in this care sector is becoming increasingly important (Leeson 2010). The evidence is that migrants contribute to public welfare such as pensions and health care but usually do not draw on them, at least immediately.

It is thus essential that Europe continues to attract key skills over the coming decades, and thus encourages enterprises that will attract such workers. Yet future projections also suggest that Europe’s ability to attract skilled migrants will decline as it competes with North America, Oceania and Asia. As Holzmann (2005) points out, the European share of global WAP has fallen from around 25% in 1950 to 14% in 1995, projected to fall to 9% in 2025 and 6% by 2050. In 2010 the WAP comprised 70% of Europe’s
population, with older and younger dependents equal in size, and representing a total dependency ratio (TDR) of 46:100 workers, the lowest recorded figure for Europe since the second world war. As was discussed earlier, the EU TDR will increase to 73:100 workers by 2050. These projections assumed a natural fall in the net flow of migrants to Europe as a whole. This was based on the assumption that the proportion of global migrants to North America and Developed Oceania increases from 50% to 80% by 2025, to the detriment of European flows.

4. The role of climate change

This argument that Europe will not be able to attract the skills it requires is based on the assumption that Asia, in particular China, and the more economically advanced parts of Latin America and Africa, will prove to be more attractive destinations for skilled migrants who increasingly will be able to select where they place their skills. It thus overlooks a future in which different regions of the world will not only have different economic profiles, but increasingly different degrees of challenging environments within which to live (see Harper 2010, 2011a, 2011b for a fuller discussion of this). In particular, it is already accepted that the challenges which climate change may bring will impact upon sustainable economic development in a number of regions, specifically those in the South, potentially causing significant problems in areas as diverse as health, water supply, agriculture, infrastructure damages and financial and other economic services (IPCC 2007a, 2007b, 2007c, Shalizi and Lecocq 2010). Climate shocks have already had large impacts on economic growth in many Asian and Central American countries (IMF 2004) and it is recognized that an increase in the frequency and magnitude of such shocks due to climate change will reduce their chances of getting out of them or magnify the national consequences for economic growth (Shalizi and Lecocq 2010).

Coastal cities will again be especially significant here as their potentials for economic growth are reduced through the impact of climate change (Huq et al 2007). Hare et al (2011) report that on an asset base, the most vulnerable cities were found to be Miami, Guangdong, Greater New York, Kolkata, Shanghai, Mumbai, Tianjin, Tokyo, Hong Kong and Bangkok (Nicholls et al 2008). Thus Asian cities in particular, which under the above World Bank scenarios provide future new magnets attracting skilled migrants, may, it is suggested for example, begin to lose out to European cities, which are situated in less environmentally challenging zones.

Two other key factors are access to water and food. Increasing aridity in a number of regions such as southern USA, parts of Africa, the Mediterranean basin and Australia, may, it is suggested, make them less attractive to live in. In addition, while some regions, such as Australia, USA and the European Mediterranean may have the capacity to mitigate such factors as drought and aridity (Iglesias et al 2010), others such as the African Mediterranean may not (Shalizi and Lecocq 2010, Sissoko et al 2011). In relation to food production, as Hare et al (2011) point out, climate change will induce strong contrasts between world regions, by causing yield increases in some and decreases in others, to an extent that will not be easily solved by international markets (Battisti and Naylor 2009). Significant risks to food and water security are predicted for South Asia (Lal 2010, Mirza 2010), northern Africa (Sissoko et al 2011, Ben Mohamed 2011, Iglesias et al 2010) and parts of Russia (Dronin and Kirilenko 2010). In addition, even Australia, with its long experience of coping with highly variable climate, may find it challenging to adapt to future abrupt climate shifts and intensifying droughts (Risbey 2010).

Finally, other potentially economically attractive magnets for skilled migrants will face increasing vulnerability to other climate induced shocks, such as more intense tropical cyclones (Bender et al 2010), which will have an impact on local infrastructure and thus economic growth.

Alternatively, according to current climate predictions (IPCC 2007a, 2007b, 2007c), many northern and western European countries will provide environmentally attractive locations in which to live. It is thus likely that northern and western Europe will have an advantage in being able to attract highly skilled migrants from environmentally challenged locations. However, southern European Mediterranean countries, which will face a larger demographic deficit, will not have this advantage, and indeed may well be sources of out-migration if some of the climate scenarios come to pass.

5. In conclusion

Most countries of the world, with the exception of small parts of Asia and sub-Saharan Africa, will undergo age-structural transitions by 2050. This will result in a fall in the proportion of young dependents and those of working age, and a rise in older dependents. This is particularly the case in Europe. However, migration is likely to reduce the demographic deficit, as migrants currently increase national total fertility rates in the short term, especially those from Asia and Africa. In addition, research suggests that current Eastern Europe migrants pay proportionately more in indirect taxes, make much less use of benefits and public services, and are likely to return to their source countries before becoming old and dependent. In the UK, migrant workers fill both the demand for highly skilled workers and the gap in unskilled employment arising from young people’s unwillingness to undertake these jobs, particularly in the growing old age personal care sector. They also contribute to the UK economy through enhancing GDP by encouraging new investment, improving efficiency and increasing innovation and entrepreneurship, and thus protect it to a degree from the sustainability gap of public finances brought on by population ageing. Given the structural ageing of most world regions, the EU27 will have to increase its global skills’ competitiveness in order to attract the future migrant skills which it will need to sustain its economy. Here future climate change may, it is suggested, bring a competitive advantage to this region, as it is likely to be environmentally attractive to those with skills and resources looking to migrate away from environmentally challenged areas.
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