N8 Research Partnership

The impacts of demographic change in the functional economies of the North of England

Strand 1: Modelling Demographic Change: Projecting Future Population, Health, Labour Force and Households in Northern England

Philip Rees, Chengchao Zuo, Pia Wohland, Paul Norman University of Leeds
Carol Jagger Newcastle University
Peter Boden, Martyna Jasinska Edge Analytics Ltd

This paper reports on a new set of projections[1,2] of local authority populations in Northern England. We use the future populations by age and sex as a foundation to project the need for old age support, the long term ill population, the labour force and the number of households. In the Strand 1 Report[3] we review **past demographic change** and identify ageing as a process that had been occurring in the UK and northern England for over a century. Our society has adapted to and mitigated the degree of ageing experienced to date, so we should be optimistic that we can do so in the future, despite media foreboding[4]. Previous systems of social support for people in old age did not take proper account of demographic changes with the result that the Pay as You Go State Pension was only sustainable because its benefits compared with other schemes across Europe were so poor[5]. Recent policy developments and legislation suggest that policy makers are now fully informed about how demographic developments will affect social security in old age. Reforms in progress, although subject to resistance by those with generous entitlements, will enable us to cope.

Migration plays an important role alongside ageing in changing the populations of northern England. Long established net internal migration losses to the rest of England are likely to continue as will the decentralisation of population from metropolitan centres to the accessible countryside (Table A)[6]. We discuss the results of official sub-national population projections (SNPP) and suggest that there is scope to improve. We considered that the official SNPP allocated too high a share of UK immigration to Yorkshire and the Humber when compared with alternative estimates based on administrative data related to immigration[7].

The SNPP also fails to take into account the effect on population change of the changing ethnic composition of the population. For these reasons we used recently completed ethnic group projections for England Local Authorities (LAs) to assess northern England's demographic prospects[1,2].

Origin	Destination					Totals
	NE	NW	YH	RUK	ROW	
NE	42.4	7.0	10.9	28.6	7.0	95.9
NW	6.9	154.7	22.0	88.9	31.0	303.4
YH	10.5	21.0	82.6	76.9	22.0	212.8
RUK	25.5	82.0	69.6	1,930.6	338.0	2,445.7
ROW	22.0	44.0	50.0	448.0	0.0	564.0
Totals	107.3	308.5	235.1	2,573.0	398.0	3,621.9
Net Internal	-3.6	-7.9	-5.8	17.3	0.0	0.0
Net International	15.0	13.0	28.0	110.0	0.0	166.0
Net Total	11.4	5.1	22.2	127.3	0.0	166.0

Table A: Migration flows (1000s), Northern England, 2008-9 *Notes: NE = North East, NW = North West, YH = Yorkshire and the Humber, RUK = Rest of the UK, ROW = Rest of the World*

The geography of local government was revised in 2009 and in 2010-11 regional bodies have been abolished and replaced by Local Enterprise Partnerships (LEPs)[8]. To make our 2001 based projections relevant, we ensured delivery of the results for new geographies in two steps. First, the population data for 2001 LAs were aggregated, where needed, to LAs defined in

2009. Second, we aggregate LA populations to Local Enterprise Partnerships (LEPs). However, the memberships can overlap because LAs were allowed to bid in more than one consortium. Care must be exercised in using LEP results because three LEPs in northern England, Leeds City Region, Sheffield City Region and North Yorkshire, overlap. A simple aggregation of LEP populations over counts the North of England population.

Under our TRENDEF projections, the population of northern England will experience moderate growth (12%) (Table B), at a rate a little below that for England as a whole though more slowly than favoured regions in England, particularly the Greater South East. Table B reports on one of our projections, aligned to the National Population Projections (NPP) trends but using independent estimates of sub-national immigration. This moderate growth means that aggregate demand for goods and services in the North of England will continue to grow in the next quarter century. The region will not experience the declines projected for the eastern Länder of Germany, for example, which have an equivalent sized population and an industrial and commercial infrastructure in need of renewal.

That growth includes two structural trends which will influence economy and society in the region. Firstly, there will be a continuing ethnic transformation in which Black and Minority Ethnic (BAME) groups grow strongly and increase their share of the total population, particularly in Pennine textile towns both in Lancashire and West Yorkshire. The Asian and Asian British and the Mixed populations of these cities and towns will be more youthful than the northern England average and the BAME share will grow from 6.5 % of the population in 2011 to 8.7-9.6% of the population in 2036. This will help fill the coming gaps in the labour force, as long as these minority groups are able to obtain the skills and education needed for a 21st century economy.

Our analysis of population ageing in northern England showed what a huge impact there will be on the old age dependency and support ratios. Table C shows that there will a 55% increase in the Old Age Dependency Ratio using 65 as the old age threshold. There is likely to be a considerable variation in the ODR increase between LEPs, with a minimum increase of 26% in the North Yorkshire LEP and a maximum increase of 82% in the Greater Manchester LEP (Map A). The increases in the 65+ population are driven by improving survival into the older ages, improving survival to very old ages within the older population and the entry into old age of much larger cohorts of baby boomers. Governments and private companies have recognised that present arrangements for retirement and pensions are not sustainable. We therefore
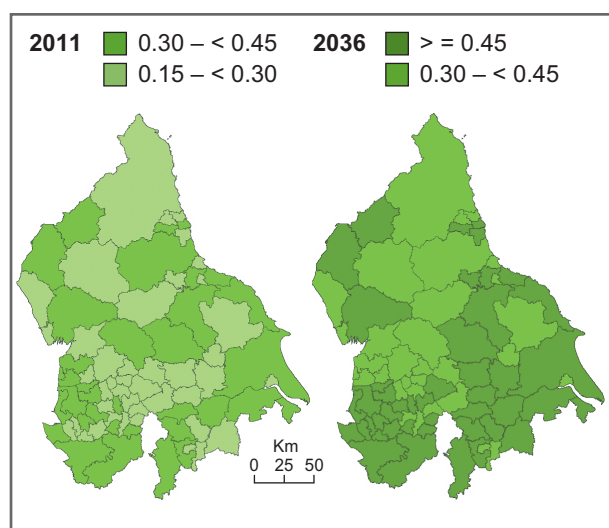
explored how much the age of retirement would need to rise to maintain the current old age support ratio. Our analyses suggested that it will be necessary to increase pension entitlement age to 70 by 2036 rather than the 67 planned in the 2007 Pension Act. The current 2011 Pensions Bill will change the threshold age to 66 earlier in 2020, than in the 2007 Act. However, the rest of the 2007 Act's timetable needs to be speeded up to 70 by 2036 and beyond 70 by 2046. In his March 23 2011 budget the Chancellor of the Exchequer indicated that pensions would be tied to life expectancy remaining at retirement and that pensionable age would need to rise to at least 70.

TRENDEF Projection	Population	Population
Local Enterprise Partnerships	1,000s 2011	Time series[a] 2036
Greater Manchester	2,611	110
Liverpool City Region	1,493	101
Leeds City Region	3,001	115
Sheffield City Region	1,809	109
Cheshire and Warrington	904	108
Tees Valley	676	107
Cumbria	532	114
Hull City Region	935	108
North Yorkshire	596	117
North East	2,025	114
Lancashire	1,522	112
Leeds City Region[b]	2,489	116
Sheffield City Region[b]	1,328	108
Northern England	13,617	112
Rest of England	38,123	118
England	53,240	117

Table B: Projected populations, LEPs in Northern England *Notes: (a) Time series 2011=100, (b) LEPs without overlaps. Source: See Strand 1 Report[3] for further details.*

Population ageing will have important impacts on the health status of the population of the North of England. The rate of increase of the population with limiting long term illness and in not good health will be greater than the population as a whole because the age structure will shift towards the ages at which people have experience more illness (Table C). Population ageing reflects improvement in survival and longevity but at the expense of more time spent in illness and more people ill, unless illness onset can be delayed by improved health behaviours (less smoking, moderate

drinking, better diets, more exercise). The pressure on the National Health Service budget will intensify. So it will be vital to improve the health of the older population[9]. One international study[10] is quite optimistic in its forecasts of disability though equivalent analysis for the UK population remains to be done.

Map A: Old age dependency ratios for the 65+ population, 2011 and 2036, Local Authorities in Northern England, TRENDEF projections

TRENDEF Projection Local Enterprise Partnerships	ODR 65+[a] Time series[b] 2036	Population with LLTI Time Series[b] 2036
Greater Manchester	182	128
Liverpool City Region	158	118
Leeds City Region	188	134
Sheffield City Region	153	127
Cheshire and Warrington	165	130
Tees Valley	136	120
Cumbria	152	131
Hull City Region	161	128
North Yorkshire	126	129
North East	150	125
Lancashire	143	132
Leeds City Region[c]	**182**	**136**
Sheffield City Region[c]	**122**	**125**
Northern England	**155**	**125**

Table C: Projected ODRs and LLTI, LEPs in Northern England *Notes: (a) ODR 65+ = Population aged 65+/Population aged 16-64, (b) Time series 2011=100, (c) LEPs without overlaps. Source: See Strand 1 Report[3] for further details.*

The flip side of the additional ageing in the next twenty five years is a decrease in the labour force as the baby boomers retire. The labour force of northern England will decrease if labour force participation rates remain constant (Table D). Vigorous action needs to be taken to encourage employers to introduce flexible transitions to retirement that encourage and reward older workers who wish to continue in work and to signal to those who wish to exit that the gain in leisure must be compensated for by decreased income. Failure of more than a few employers to develop such older worker policies is a serious shortcoming: government needs to provide a vigorous lead in developing employment opportunities for older workers, using both carrot (extra points in tenders for contracts) and stick (reduced grants if no policy is in place). The objection that this might damage the prospects of younger entrants to the labour force can be countered by designing mentoring schemes that join together young and old labour together (as has happened in the production of this report).

TRENDEF Projection Local Enterprise Partnerships	Labour Force Time Series[a] 2036	Households Time Series[a] 2036
Greater Manchester	96	114
Liverpool City Region	88	107
Leeds City Region	102	119
Sheffield City Region	97	113
Cheshire and Warrington	96	111
Tees Valley	93	123
Cumbria	103	116
Hull City Region	97	111
North Yorkshire	106	119
North East	102	115
Lancashire	101	118
Leeds City Region[b]	**103**	**121**
Sheffield City Region[b]	**96**	**113**
Northern England	**96**	**115**

Table D: Projected Labour Force and Households, LEPs in Northern England *Notes: (a) Time series 2011=100, (b) LEPs without overlaps. Source: See Strand 1 Report[3] for further details.*

We analysed what population change might mean for household change but found our results differed considerably from official forecasts[10]. Our assumption for 2001 to 2036 was no further change in average household size, as observed 2001-2009 in the Census and Labour Force Survey. Such a projection implies that

while the number of older lone person householders may increase, the number of younger lone person householders will shrink. This reflects the current state of the housing market, in which it is increasingly difficult for young adults to form independent households.

The Full Strand 1 Report[3] provides detailed statistics on all these themes at LEP and LA scales. There is important geographical variation in population change and ageing across the North of England, which is discussed in the report and for which the appendices supply detailed tables. We have assembled the indicators for local authorities and local enterprise partnerships presented here and in Strand 4 into a local authority spreadsheet with easy access to profiles of key indicators for both LEPs and LAs. This resource will be accessible with the Strand 1 Report for use by policy makers and researchers.

References

1 Wohland P., Rees P., Norman P., Boden P. and Jasinska M. (2010) Ethnic population projections for the UK and local areas, 2001-2051. *Working Paper* 10/02, School of Geography, University of Leeds, June 2010. Online at: www.geog.leeds.ac.uk/research/wpapers.

2 Rees P., Wohland P., Norman P. and Boden P. (2011a) A local analysis of ethnic group population trends and projections for the UK. *Journal of Population Research*, 28(2-3): 149-184.

3 Rees P., Chengchao Z., Wohland P., Jagger C., Norman P., Boden P. and Jasinska M. (2011) Modelling Demographic Change: Projecting future population, health, labour force and households in the North of England. Final Report Strand 1. N8 Research Partnership, The Impacts of Demographic Change in the Functional Economies of the North of England. Online at: www.n8research.org.uk/research-themes/economic-impacts-of-demographic-change

4 The Observer (2011) The price that Britons will have to pay for living longer. *The Observer*, Sunday 6 March 2011, pp.8-9. Online at: http://observer.guardian.co.uk/.

5 The Pensions Commission (2005) *Pensions: Challenges and Choices*. Final Report. London: The Stationery Office. Online at: http://news.bbc.co.uk/1/hi/business/4482460.stm

6 Boden P. and Rees P. (2010a) Demographic change and its impact upon the Northern Way regions. Symposium on Economic Development in Northern England, 25-26 March 2010, The Lowry Centre, Salford. Online at: www.thenorthernway.co.uk/page.asp?id=822.

7 Boden P. and Rees P. (2010b) Using administrative data to improve the estimation of immigration to local areas in England. *Journal of the Royal Statistical Society, Series A*, 173, 707-731.

8 HM Government (2010) Local Growth: Realising Every Place's Potential. White Paper Cm 7961. London: The Stationery Office.

9 Mayhew L. (2009) *Increasing Longevity and the Economic Value of Healthy Ageing and Working Longer*. London: HMG Cabinet Office Strategy Unit. Online at: https://www.hmg.gov.uk/media/33715/economicsofageing.pdf.

10 Sanderson W.C. and Scherbov S. (2010) Remeasuring aging. *Science*, 329: 1287-1288.

11 CLG (2010) *Household Projections, 2008 to 2033, England*. Communities and Local Government. Online at: www.communities.gov.uk/documents/statistics/pdf/1780763.pdf.

Contact details

For more information, contact: Phil Rees
p.h.rees@leeds.ac.uk Tel 0113 343 3341

N8 is a partnership of the eight most research-intensive universities in the North of England: Durham, Lancaster, Leeds, Liverpool, Manchester, Newcastle, Sheffield and York.