

FOCUS ON

People and Migration

The changing age structure of the UK population

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Chapter 4

Introduction

This chapter explores changes in the age structure of the UK population over the last three decades. The ways in which the age profile of the population might change in the future are also discussed. Mid-year population estimates for 2004 are compared with those for selected years back to 1971, using changes in the median age and in the population age structure. Country patterns within the UK are examined, and this chapter includes a comparison with changes that have occurred in the age structure of Japan, where the population is ageing rapidly. As well as age distribution, this chapter analyses the changing distribution of the UK population by legal marital status.

Current and recent trends in the age structure of the UK population

The UK population reached 59.8 million in 2004, its highest level ever. It has increased in size by 7 per cent in the three decades since 1971, when the figure was 55.9 million. But this population growth has not occurred at all ages. In fact, some age groups have shrunk and so become a smaller proportion of the whole population.

This chapter considers three broad age groups, together with some more detailed age breakdowns. The three groups are:

- children (those aged 0 to 15 years)
- the working age population (females aged 16 to 59 and males aged 16 to 64)
- those above state pension age (females aged 60 and above and males aged 65 and above).

The exception to this is in the section on future projections where the age groups 0 to 15, 16 to 64 and 65 and over have been used. This gives consistency over time, since the pension age for women is expected to change from 60 to 65 between 2010 and 2020.

The changes that have occurred in the proportion that these groups represent of the total population are shown in Figures 4.1 a–c.

Figure 4.1a illustrates the number of children aged under 16, a segment of the population that decreased by 18 per cent from 14.3 million to 11.7 million between 1971 and 2004. The working-age population increased by 13 per cent in the same period, from 32.6 million to 37.0 million (Figure 4.1b). The greatest proportional rise was in the size of the population above state pension age. This older population increased by 22 per cent from 9.1 million in 1971 to 11.1 million in 2004 (Figure 4.1c). The changing numbers of people in the different age

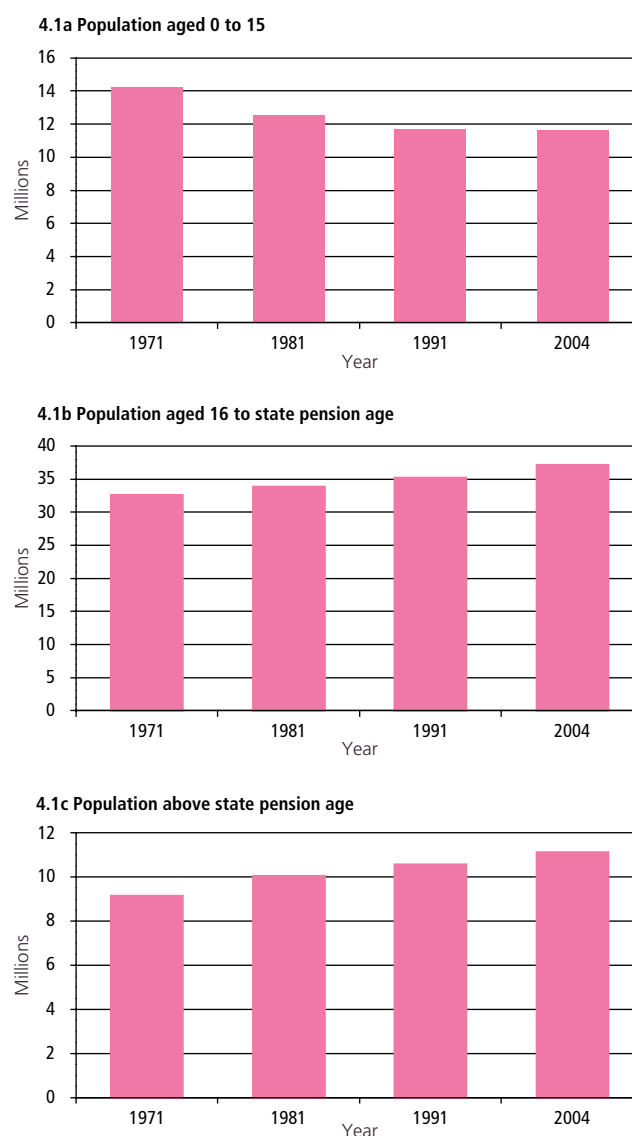
groups have led to a progressive transformation of the age profile of the UK population, a structural change that may have significant social, health and economic consequences.

Figure 4.2 shows the percentage age composition of the population for 1971 to 2004. The proportion of children declined from a quarter to a fifth between 1971 and 2004. This decline reflects a sustained pattern of fertility at or below replacement level (the minimum fertility level required to ensure a population continues to replace itself, usually around 2.1 children per woman in developed societies¹). This pattern is

Figure 4.1

Population¹ by age group², 1971 to 2004

United Kingdom



1 Population estimates refer to mid-year point (30 June).

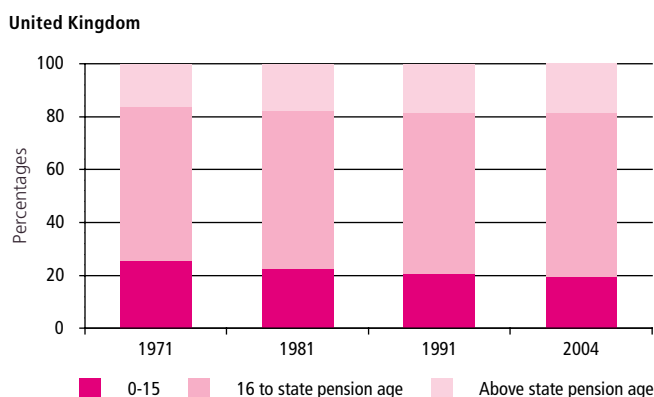
2 State pension age is defined here as ages 65 and above for men and 60 and above for women.

Source: Population estimates – Office for National Statistics; General Register Office for Scotland; Northern Ireland Statistics and Research Agency

typical of much of western Europe and, within the last decade, of Europe as a whole. But current UK fertility levels are not as low as Italy or Spain and are very similar to the Netherlands and Sweden (see Chapter 10 for more European comparisons).

Figure 4.2

Percentage of population¹ by age group², 1971 to 2004



1 Population estimates refer to mid-year point (30 June).

2 State pension age is defined here as ages 65 and above for men and 60 and above for women.

Source: Population estimates – Office for National Statistics; General Register Office for Scotland; Northern Ireland Statistics and Research Agency

The working age population has grown from 58.2 per cent to 61.9 per cent of the total population between 1971 and 2004. This rise is partly due to ageing of people born in the early to mid-1960s, when birth rates were relatively high. 'Baby boomer' generations affect the age structure of the population as they grow older. People born in the late 1940s and 1960s reached working age between the early 1960s and 1980s and will leave it between 2006 and 2029.

The population of working age is growing older. The median age of this group has increased, for men from 37.4 in 1991 to 39.6 in 2004, and for women from 35.7 to 38.4. Those aged between 16 and 24 represented 20.8 per cent of the male and 21.8 of the female working population in 1991, but they comprised only 18.4 and 19.1 per cent respectively in 2004. Conversely, older male workers (those aged 50 to 64) increased their share in the working population from 23.9 in 1991 to 27.2 per cent in 2004, while for women the proportion aged 50 to 59 rose from 17.8 in 1991 to 21.5 per cent in 2004.

Between 1971 and 2004, the proportion of people above state pension age increased from over 16 per cent to more than 18 per cent. Within the older population, the more substantial growth occurred among the oldest old (those aged 85 and over). There were around a half million oldest old in 1971, comprising 0.9 per cent of the total population. By 2004, the

oldest old had more than doubled to 1.1 million, representing 1.9 per cent of the UK population. This rise is the result of the relatively high number of births that occurred in the first two decades of the 20th century, combined with increased longevity at older ages. The consequences of the increase of the oldest old may have significant implications in terms of welfare, health and social support.²

It is useful to relate these population groups in terms of dependency of the old and young on the working age population. Table 4.3 shows the trends in four age structure indicators for the period between 1971 and 2004. The total dependency ratio (that is the number of people aged 0 to 15 plus the number aged above state pension age, relative to the number of people of working age) shows a decrease from 72 to 61 per hundred over the last 30 years. This is due to the fall in the child dependency ratio (number of people aged 0 to 15 relative to the size of the working population), which has declined from 44 to 31 per hundred population of working age. In contrast, the old-age dependency ratio (number of people above state pension age relative to the size of the working population) has risen slightly from 28 to 30 per hundred.

Another useful age structure indicator is the ageing index (population above state pension age per hundred children aged 0 to 15). A large change occurred in the ageing index, between 1971 and 2004, when it increased from 64 to 96. In the past, children outnumbered older people and provided a buoyant pool for the future population of working age. By 2004 there were almost the same number of people above state pension age as children below age 16. The implications for future ageing trends are considered later in this chapter.

Table 4.3

Age structure indicators¹, 1971 to 2004

United Kingdom				
	1971	1981	1991	2004
Total Dependency Ratio	71.8	66.8	63.2	61.4
Child dependency ratio	43.8	37.1	33.2	31.4
Old-age dependency ratio	28.0	29.7	30.0	30.0
Ageing Index	64.0	80.0	90.4	95.5

1 Indicators are calculated from population estimates referring to the mid-year point (30 June). See text for explanation of indicators.

Source: Population estimates – Office for National Statistics; General Register Office for Scotland; Northern Ireland Statistics and Research Agency

Note that neither dependency ratios nor the ageing index, based as they are on age alone, take account of economic dependence. For example, students aged 16 and above are included in the working age population, even though many are not actually economically active. Conversely older people still in the paid or unpaid workforce are not included even though many are still actually working.

Table 4.4
Median age of population, 1971 to 2004

United Kingdom	
1971	34.1
1981	34.5
1991	35.8
2004	38.6

Source: *Population estimates – Office for National Statistics; General Register Office for Scotland; Northern Ireland Statistics and Research Agency*

Table 4.5
Marital status distribution, by age and sex, 2001

United Kingdom								Percentages ¹
Men	Total	Single (never married)	Married (first marriage)	Re-married	Separated (but still legally married)	Divorced	Widowed	
16–24	100	97	2	0	0	0	0	
25–34	100	59	34	2	2	4	0	
35–44	100	24	53	8	4	10	0	
45–54	100	12	57	13	3	13	1	
55–64	100	8	63	13	2	11	3	
65–74	100	8	65	10	1	6	9	
75–84	100	7	57	8	1	3	24	
85+	100	7	38	7	1	2	47	
Women	Total	Single (never married)	Married (first marriage)	Re-married	Separated (but still legally married)	Divorced	Widowed	
16–24	100	93	6	0	1	0	0	
25–34	100	47	41	3	4	6	0	
35–44	100	17	53	9	5	14	1	
45–54	100	7	57	13	4	16	3	
55–64	100	5	59	11	2	12	11	
65–74	100	6	49	6	1	7	31	
75–84	100	7	27	3	0	4	58	
85+	100	10	8	1	0	2	79	

¹ Percentages may not add exactly to 100 due to rounding.

Source: *2001 Census – Office for National Statistics; General Register Office for Scotland; Northern Ireland Statistics and Research Agency*

The median (average) age of the population summarises the age of a population in a single measure. Table 4.4 shows the median age of the UK population during the period 1971 to 2004. The median age has increased by 4.5 years (from 34.1 to 38.6) over the three decades from 1971 to 2004.

This section has clearly shown that the UK population has aged between 1971 and 2004. This ageing is due to:

- sustained low fertility – and thus a decline in the proportion of children in the population
- a rising proportion of older people in the population (especially at the oldest old ages).

These trends are reflected in the overall dependency ratio, which has fallen over the last three decades as the decreasing number of children has exceeded the rise in the number of older people. Future ageing patterns are considered later in this chapter.

The changes in the UK’s age structure, though significant, are less striking than those in some countries in Southern and Eastern Europe, as well as Japan. In these countries, changes in the age structure of the population are occurring faster than in the UK. This presents challenges from a pensions and healthcare perspective, both now and over the next few decades.

UK adult population by legal marital status

The marital status of the UK population varies both by age and sex. Table 4.5 presents 2001 Census data on marital status for men and women by age group.

A number of factors account for the gender differences in the marital status distributions. First, women tend to marry earlier than men and, on average, wives are younger than their husbands.^{3,4} Second, men are more likely to remarry after a divorce. Another third important factor, especially at older ages, is the difference in survival between men and women.

At younger ages, a higher proportion of women than men are married, reflecting the general tendency of women to marry at younger ages. Between 35 and 54 the proportions married are very similar for both sexes. At older ages, gender differences in marital distribution are more remarkable, with men more likely to be married or remarried than women.

At ages 65 and above, seven men out of ten were married in 2001 compared with only four women. Five out of ten women above age 64 were widowed. Since women tend to marry older husbands, the pattern of longer life expectancy for women (making widowhood more common than widowerhood) accentuates this pattern. Among those aged 85 and over, while 44 per cent of men were still married, only 10 per cent of women had a surviving husband. Nearly 80 per cent of women aged 85 or over were widowed. Around 6 per cent of both sexes aged 65 and over were divorced.

Figures 4.6a and 4.6b illustrate changes in the proportion of married people in 1971 and 2001 in different age groups for men and women. The marital status categories used in 1971 data did not include remarriage or separation; so for comparison, the 2001 figures combine married, remarried and separated people.

The proportion of married men aged 16 and over declined from more than 70 per cent in 1971 to around 50 per cent by 2001. Over the same period, the proportion of single people rose from just over a quarter to just over a third, while the divorced increased from around 1 per cent to more than 7 per cent. Among women aged 16 and over, 65 per cent were married in 1971, but only 56 per cent in 2001. Divorced women

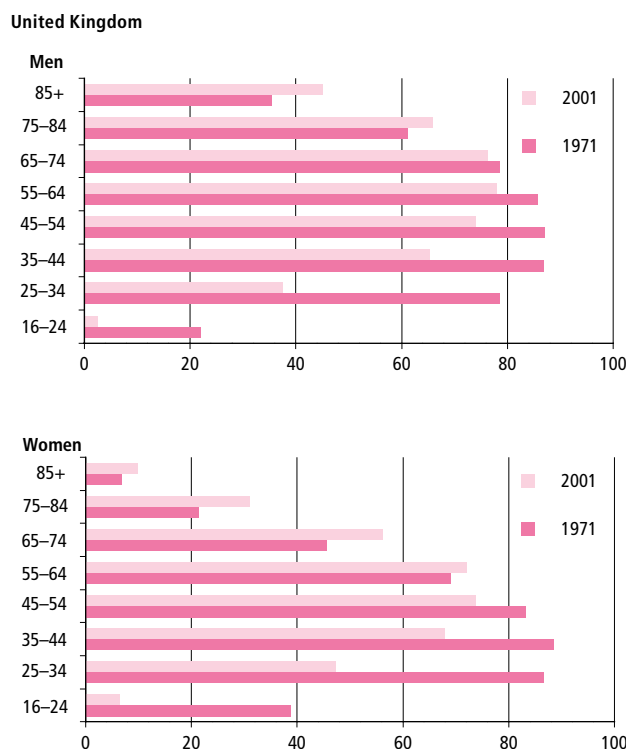
represented 2 per cent of the population in 1971, but this had increased to 10 per cent by 2001.

Despite these general trends of decreasing proportions of married people and an increase in divorce, there are substantial differences between age groups. The proportion of married people has declined consistently at young adult ages. Among men aged 16 to 24 the married represented 22 per cent of the total population in 1971, but only 3 per cent in 2001; for women the proportions are 39 and 7 per cent respectively. For adults aged 25 to 34 the decline has been considerable as well. In 1971, 79 per cent of men and 87 per cent of women were married against, respectively, 37 and 47 per cent in 2001.

The decline over last three decades in the proportion of young adults married is not only due to postponement of marriage (a phenomenon common in most Western countries), but also to the increased popularity of cohabitation. Data from the General Household Survey show that 28 per cent of people aged 25 to 29 were living together in 2001.⁵

Other reasons may explain the rise of marriage among older people, especially older women. The composition by marital

Figure 4.6
Proportion married¹ by age and sex, 1971 and 2001



¹ Data refer to the proportion married on Census day (not the proportion ever married).

Source: 1971 and 2001 Censuses – Office for National Statistics; General Register Office for Scotland; Northern Ireland Statistics and Research Agency

status of older people is largely determined by past marriage patterns and the incidence and duration of widowhood and divorce. High proportions of women born at the beginning of the 20th century never married due to high male mortality (both general and wartime) and emigration. This can be partly seen in the low proportion of women married at older ages in 1971.

Improvements in life expectancy (especially among men), which have made it more likely that spouses will survive together into old age, are also partly responsible for the increase in the proportion married for women aged 65 and over; but higher rates of ever-marrying, particularly for cohorts who did so in the 1960s, also played a part. The more modest increase in the proportion of married men at older ages can be explained to some extent by the consistent increase in the proportions divorced; among those aged 65 and over the proportion of those who were divorced increased from 1 per cent in 1971 to 5 per cent in 2001.

Being without a spouse may have important consequences on living arrangements and support in later life. In 2001, 23 per cent of men and 46 per cent of women aged 65 and above were living alone.⁶ Never-married older people are more likely than the married to live either alone or in a communal establishment due to their lack of a spouse to care for them and high level of childlessness among them. For example, 24 per cent of men aged 65 and over living in communal establishments were never-married, compared to only 7 per cent among all men of that age, according to the 2001 Census. Previously married older people were also more likely to be living alone than older people with a living spouse. Future plans for the provision of housing and services to older people will therefore need to take into account the changing marital status distribution in this age group.

Future trends

The national population projections for the UK, produced by the Government Actuary's Department (GAD), show the size and age structure of the population for the next seventy years. These projections are based on assumptions for changes in mortality, and fertility rates, as well as numbers and age distributions of migrants. Trends in the main components of population change (growth due to births and immigration, decrease due to deaths and emigration) will determine the population's future ageing trends. The further into the future that projections are made, the more uncertain the ageing pattern becomes. But the pattern over the next couple of decades is largely determined by the size and age distribution of the population today, which is a known factor not subject to assumptions.

The Government Actuary's Department produce a main, or 'principal', projection but, to acknowledge the inherent uncertainty of looking into the future, they also produce 'variant' projections, with different assumptions for fertility, mortality and migration. For each of the three population-change components, a plausible alternative high and low assumption is produced. Combinations of these variants can be used to produce the largest, smallest, oldest or youngest population given the variant assumptions (Box 1).

Box 1 Population projection assumptions

In order to make assumptions about future population the Government Actuary's Department makes assumptions about fertility, mortality and migration. The table below summarises the assumptions used in the 2004-based principal projections and the variant assumptions used to create the scenarios shown in the article. Note that the variant assumptions are plausible alternative scenarios and are not formal limits or confidence intervals.

Summary measures of long-term assumptions

	Principal	High	Low
Fertility (completed family size cohorts born from 1990 onwards)	1.74	1.94	1.54
Migration (net per year)	145,000	205,000	85,000
Life expectancy (period life expectancy at birth 2031)			
Males	81.4	83.5	79.2
Females	85.0	86.5	83.6

The following table shows the combinations of the above assumptions used to create the scenarios discussed in the chapter.

Combinations of long-term assumptions used to create projection scenarios

	Fertility	Life expectancy	Migration
'Large' population	High	High	High
'Small' population	Low	Low	Low
'Young' population	High	Low	High
'Old' population	Low	High	Low

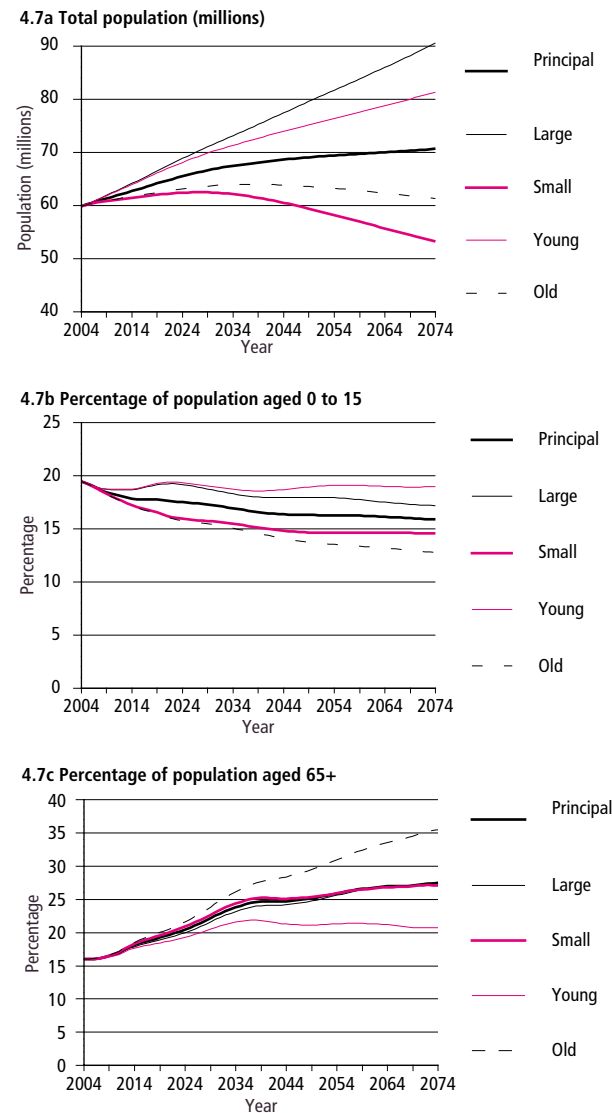
Figure 4.7 summarises the results of these projections. The 2004-based principal projection shows that the UK population will continue to rise over the next seven decades from 59.8 million in 2004 to around 70.7 million by 2074 (Figure 4.7a). This continued rise is not inevitable. Plausible alternative fertility, mortality and migration assumptions could indicate population decline within 70 years.

While age distributions will vary under the different scenarios it is clear that the population will continue to age. For ease of comparison the groups used here are: under 16, 16 to 64 and 65 and over. It is assumed that the latter group can be

Figure 4.7

Projected population (principal and variants¹), selected age groups, 2004 to 2074

United Kingdom



¹ See Box 1 for explanation of different variants.

Source: 2004-based population projections – Government Actuary’s Department

described as the retirement age group, as the female retirement age will increase from age 60 to age 65 between 2010 and 2020.

Figure 4.7b shows the percentage aged under 16 in the principal and variant populations. Even under the ‘young’ variant, the percentage under 16 does not change much from the current proportion of a little under 20 per cent. The principal projection shows the proportion aged 0 to 15 falling to just over 16 per cent in 2050.

Figure 4.7c indicates that the proportion of the population aged 65-plus rises in all the scenarios shown. For the principal projection, the rise is from 16 per cent in 2004 to over 25 per cent in 2050. Even under the ‘young’ variant the proportion rises to over 21 per cent.

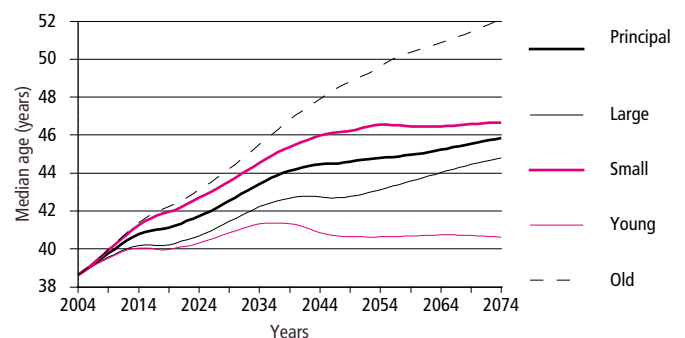
Figure 4.8 shows the trend in the median age for each of the projections. All suggest the median age will rise above 40, with the principal projection suggesting a median age of a little under 45 by the middle of the century, and the ‘old’ scenario suggesting it will approach 49 by then.

The ageing process will occur at different speeds in the UK’s four component countries, due to different patterns of fertility and varying improvements in mortality at older ages. In 2004, the median age of the population was 38.5 in England, 40.2 in Wales, 39.8 in Scotland and 35.8 in Northern Ireland. By 2050, these median ages are projected to increase to 44.2, 47.2, 47.9 and 46.4 respectively.⁷

Northern Ireland is the component country that is ageing, and will continue to age, the fastest. The proportion of people aged 65 and over will increase most in Northern Ireland; between 2004 and 2050 it will almost double from 13.6 to 26.9 per cent. But the proportion of older people will be higher

Figure 4.8

Projected median age of UK population (principal and variant projections¹), 2004 to 2074



¹ See Box 1 for explanation of different variants.

Source: 2004-based population projections – Government Actuary’s Department

in Scotland, where 28.6 per cent of the whole population will be over 65 in 2050, compared with 16.3 in 2004. England and Wales will age as well; between 2004 and 2050 the proportion aged 65 and above will increase from 16.0 to 24.8 in England and from 17.5 to 27.5 in Wales.

Changes in the population of England and Wales, by marital status, have been projected by GAD.⁸ The proportion of older people who are divorced is expected to rise from 6 to 14 per cent for males and 6 to 17 per cent for females between 2003 and 2031. But the proportion of females over 65 who are widowed is expected to fall from 46 per cent in 2003 to 28 per cent by 2031, with a fall from 16 to 12 per cent for males. GAD also produces projections by partnership status. These show that the proportion of people aged 65 and over who are cohabiting will rise from 1 to 5 per cent for men and 1 to 3 per cent for women by 2031. Recent work⁹ has demonstrated that a higher proportion of older people are likely to have a surviving child than for any generation ever born in Britain. In the next quarter century the proportion of women aged 80 with at least one surviving child will rise from two-thirds to three-quarters.

Ageing populations: a comparison with Japan

The ageing process of the UK population has followed some patterns that have been experienced by other developed countries; for example postponement of childbearing, higher levels of childlessness and growing longevity. But the timing and the intensity of these trends have been different.

The example of Japan provides an excellent case study of a non-European population whose ageing process has been quite different from the UK. In 1950 the median age of UK population was 34.6, while the Japanese figure was 22.3. By 2004, the UK median age had increased by four years to 38.6 while the median age of Japan's population had risen by 20.4 years to 42.7.¹⁰

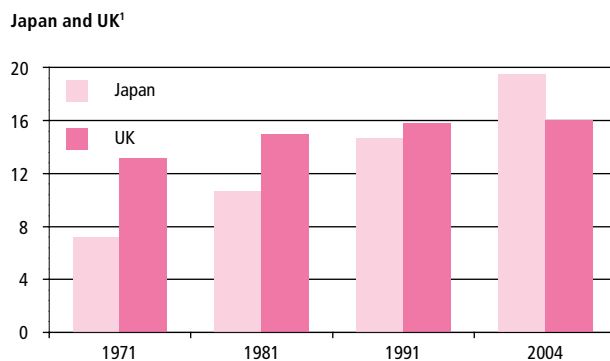
The time it took for the UK population aged 65 and over to double from being 7 per cent of the total population to 14 per cent was 45 years (between 1930 and 1975). The same increase was achieved by the Japanese population in only 26 years (between 1970 and 1996). The doubling time of the older population is an important indicator for the debate on financing health care and the pension system; the more rapid the ageing process, the faster the political response has to be.¹¹

Figure 4.9 shows the changes in the proportion of people aged 65 and over in Japan and the UK over the period 1971 to 2004. In 1971, the older population in Japan comprised just over 7 per cent of its total population, almost half that of the UK (just over 13 per cent). But by 2004 the Japanese level had reached 19.5 per cent, compared to 16.0 per cent in the UK.

Japan's faster ageing process has only partly been due to differential declines in fertility. In fact the total fertility rate in 1971 was 2.4 in the UK and 2.2 in Japan, while in 2003 the rates were 1.6 and 1.3 respectively (the Japanese total fertility rate now being similar to those in southern Europe).

Apart from the fertility differences, there has been a dramatic difference between the two countries in improvements in survival at older ages. Mortality rates in 1970 gave a 65-year old British woman an expected 16.0 years of life compared with 15.3 years for her Japanese counterpart (Table 4.10), showing very little difference between the two countries with a slightly longer survival for UK women. In 2002, the life expectations were 19.1 in the UK and 23.0 in Japan, showing

Figure 4.9
Percentage of population aged 65 and above, 1971 to 2004



1 Population estimates for the UK refer to 30 June. Population estimates for Japan refer to 1 October.

Source: UK population estimates – Office for National Statistics; General Register Office for Scotland; Northern Ireland Statistics and Research Agency. Japan population estimates – Statistics Bureau (Japan), Ministry of Internal Affairs and Communication

Table 4.10
Life expectancy at older ages, 1970 to 2002

	Men		Women	
	Japan	UK	Japan	UK
1970				
Life expectancy at age 65	12.5	12.1	15.3	16.0
Life expectancy at age 85	3.8	4.1	4.5	5.1
2002				
Life expectancy at age 65	18.0	16.1	23.0	19.1
Life expectancy at age 85	6.0	5.1	7.9	6.1

Source: UK – Office for National Statistics; General Register Office for Scotland; Northern Ireland Statistics and Research Agency. Japan – Statistics Bureau (Japan), Ministry of Internal Affairs and Communication

the striking improvement in Japanese later-life survival of almost eight years in only three decades. The figures for men are slightly less impressive; Japanese men aged 65 and over have gained 5.5 years between 1971 and 2002 compared with 4.0 years for British men.

Analysis and conclusion

The changes in fertility, mortality and migration trends that have shaped the ageing of the population over the last three decades have developed against a backdrop of huge technological, economic, and political change for the entire developed world, including all of the European nations. In parallel to these changes have been major social readjustments, including: the rising participation of women in the workforce and the wider use of part-time employment and job sharing; changing trends in partnership formation, such as delay and decline in marriage, and the rise in divorce, remarriage and cohabitation. Undoubtedly these changes have had, and will continue to have, profound effects on the demographic trends of fertility, mortality and migration which shape the population's age distribution.

While changes in society are difficult to predict, and their effects on demographic trends even more difficult to interpret, it is clear that to a greater or lesser extent the population of the UK will age, because a key component of population ageing is the age distribution of the population alive today. There will continue to be variation in ageing at country and subnational level within the UK as there is variation in the current age structure. In the south west and Wales there is a higher proportion of people of pensionable age, while in London the proportion is lower (these patterns are shown in more detail in Chapter 2).

While the example of the UK is valuable as a case study of a developed European (or European-type) country, it is by no means solely within Europe, North America and Australasia that major shifts in demographic structures have occurred in recent decades. Common to all nations experiencing such changes are the profound adjustments in prevailing social and economic values. The Japanese example illustrates how much and how fast Japanese age structure has changed as a result of declining fertility and rising life expectation. The Japanese example is one where immigration is closely controlled, but recent work demonstrates that migration is not the way to stop the population ageing, since migrants age too.¹²

While the 'greying' of population has major implications for health, pension and welfare planners everywhere, it is in nations that have experienced very speedy and relatively abrupt adjustments where the full impact of these changes will be

most keenly felt. Finally, it is worth saying that not all the consequences of ageing are ones that need to invoke concern. An ageing society has many positive aspects, as death is postponed and couples are able to spend more years together.

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