SCOTLAND'S POPULATION 2007

The Registrar General's Annual Review
of Demographic Trends

153rd Edition

General Register Office
for
SCOTLAND
information about Scotland's people

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A National Statistics publication for Scotland

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ANNUAL REPORT

of the REGISTRAR GENERAL
of BIRTHS, DEATHS AND MARRIAGES
for SCOTLAND 2007

153rd Edition

To Scottish Ministers

I am pleased to let you have my Annual Report for the year 2007, which will be laid before the Scottish Parliament pursuant to Section 1(4) of the Registration of Births, Deaths and Marriages (Scotland) Act 1965.

Duncan Macniven
Registrar General for Scotland
August 2008

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INTRODUCTION

There is growing interest in the size and characteristics of Scotland's population. One reason is that records are being broken. In the year ending on 30 June 2007, for example, the number of births was the highest since 1998-99 and exceeded the number of deaths by 1,100, the largest natural change since the year to 30 June 1993. The total population at 30 June 2007 was 5.144 million – the highest since 1983. Gains from migration were higher than in any year since our current records started in 1951. The increase in the population between mid-2006 and mid-2007 was 27,300 people – the biggest single year increase since 1946-47. In this year's report, my colleagues and I have highlighted these and other statistics likely to be of special public interest.

Another reason for the growing interest is that 2007 saw Scotland's first population target, in the Scottish Government's Economic Strategy. It set the goal of matching the average population growth of the 15 pre-enlargement states of the European Union over the period from 2007 to 2017. So the 2007 population figure – 5.144 million – is the baseline against which that target will be monitored over the next decade.

We do not know enough about the reasons why people migrate to or from Scotland, or choose to have babies. During 2007, we saw the final results of an important research programme to find out more, jointly funded by the Scottish Government and the Economic and Social Research Council. Chapter 3 of this report is based on some of the most interesting findings on fertility, while Chapter 2 draws out more information from my department's own statistical data. But they do not answer every question about why fertility is increasing and thus help us to predict whether the increase will continue. So I am glad that more research is in prospect.

At the same time, we are working hard to improve our information about migration, especially out-migration. Unlike some countries, the UK does not have a comprehensive system of recording migrants, particularly those leaving the country, nor any legal requirement to notify change of address. My department is currently investigating the use of registers and information from a range of administrative sources in order to provide more frequent, accurate and detailed statistics.

Population

Scotland's population rose for the fifth year running in the year to 30 June 2007, by 27,300 to 5,144,200.

It is 1983 since there were more people living in Scotland.

There were around 1,100 more births than deaths in the year to 30 June 2007. In the 2007 calendar year, this difference was greater, with 1,800 more births than deaths.

Migration was the biggest contributor to the increase in population. In the year to 30 June 2007, there were net gains of around 8,800 from the rest of the UK and 16,800 from the rest of the world.

In-migrants to Scotland from every region of Great Britain exceeded out-migrants in the year to 30 June 2007.

Over the past 10 years, Scotland's population has increased by around 61,000 (1.2 per cent), from 5.08 million to 5.14 million. While there were 9 per cent fewer people aged under 16, 2 per cent fewer aged 16-29 and 5 per cent fewer aged 30-44, there were more people aged 45 and over, particularly those aged 45-59 and 75 and over (14 and 13 per cent respectively).

The biggest increases in population in the last 10 years have been in West Lothian, East Lothian and Perth & Kinross while Inverclyde, Dundee City and Eilean Siar have accounted for the largest decreases over the same period.

Current projections suggest that Scotland's population will rise to a high of 5.37 million in 2031 before slowly declining, falling below 5 million around 2076.

Births

There were 57,781 births in 2007, 2,091 (4 per cent) more than in 2006, and the highest since 1997. The number of births in 2007 was still well below the peak of over 100,000 per year in the early 1960s, and the level of around 65-70,000 per year between the mid-1970s and the early 1990s.

49 per cent of births in 2007 were to unmarried parents, compared with 38 per cent in 1997.

In 2007, the average age of the mother at childbirth was 29.4 compared to 27.4 in 1991, 26.1 in 1977 and 27.4 in 1964.

The total fertility rate rose to 1.73 in 2007, higher than the historic low of 1.48 in 2002 and the highest since 1982, though still much lower than the 1964 peak of 3.09 and the 'replacement' level of about 2.1.

Scotland's total fertility rate in 2007 was the lowest of the four UK countries.

The average completed family size for women born in 1971 was 1.49 by the time they reached 35. For women born in 1951, the same figure was 1.94.

Deaths

There were 55,986 deaths in 2007. While this was 1.6 per cent higher than the total for 2006, it was the third lowest total recorded since the introduction of civil registration in 1855.

In 2007, the three most common causes of death were cancer (15,274 people – 27 per cent of deaths), ischaemic (coronary) heart disease (9,343 deaths – 17 per cent) and cerebrovascular disease (stroke) (5,333 deaths – 10 per cent).

The proportion of deaths caused by the three most common causes has fallen from 65 per cent in 1981 to 53 per cent in 2007. The proportion caused by ischaemic heart disease fell sharply from 29 to 17 per cent. Deaths from strokes also fell over the same period from 14 per cent of the total to 10 per cent, while deaths from cancer increased from 22 per cent to 27 per cent of all deaths.

Of people who died of cancer in 2007, more died from lung cancer (4,115) than any other type. A further 1,539 people died of bowel cancer, 1,067 of breast cancer and 793 of prostate cancer.

Some significant improvements have been achieved in age specific mortality rates over the last 25 years. For example, the rate for males aged 45-74 in 2007 was around 45 per cent lower than in 1981.

A male baby born around 2006 can expect to live for 74.8 years and a female baby for 79.7 years. This is projected to increase to 80.4 and 84.8 respectively for males and females born around 2031.

Expectation of life for people in Scotland is about 4 years lower than for the best-performing states in the European Union.

The total number of suicides and probable suicides ('intentional self harm' and 'events of undetermined intent') in 2007 was 838, a rise of 73 on 2006.

There were 272 infant deaths (deaths of children aged under 1) in 2007, 24 more than in 2006.

Stillbirths in Scotland have fallen from 13.1 per 1,000 births in 1971 to 5.6 in 2007. However, stillbirth rates in Scotland are higher than in most Western European countries.

Marriages

There were 29,866 marriages in Scotland in 2007, almost exactly the same as in 2006. The number of marriages in recent years has been significantly lower than the numbers in the early 1970s, when typically over 40,000 marriages took place each year.

For just over a quarter of the marriages in 2007 neither party was resident in Scotland. Almost half of those marriages took place at Gretna.

Divorced people accounted for over a quarter of people marrying in 2007, an increase from just under 6 per cent in 1971.

About 48 per cent of marriages in 2007 were religious ceremonies and about 52 per cent were civil ceremonies compared with 55 and 45 per cent respectively in 1997. In 2007, 7,987 civil ceremonies (27 per cent of all marriages and 52 per cent of civil marriages) were conducted at 'approved places' outwith registration offices – an option only introduced in 2002.

Divorces

There were 12,773 divorces in Scotland in 2007, 2 per cent fewer than in 2006.

In both 1997 and 2007 the median duration of marriage ending in divorce was 15 years. This figure was substantially lower for marriages ending in divorce in 1981, when the median duration was 9 years.

Civil Partnerships

There were 688 civil partnerships registered in 2007, 339 male and 349 female couples. That compared with 1,047 registered in 2006, the first full year of the new legal status.

Households and Housing

In 2007, 2.8 per cent of dwellings in Scotland were vacant and 1.4 per cent were second homes. Within Scotland, both figures were highest in remote rural areas.

Between 2006 and 2031, the number of households is projected to increase by 19 per cent to 2.7 million, an average of 17,600 additional households per year.

Most of the projected increase in the number of households is the result of the ageing population and more people living alone or in smaller households, rather than an increase in the population.

The number of households is projected to increase most (by 35 per cent) between 2006 and 2031 in the Orkney Islands, West Lothian and City of Edinburgh. In only two council areas (Inverclyde and East Dunbartonshire) is the number of households projected to decrease over the same period.

Fertility

In 2007, 4 out of 5 births in Scotland were to Scots-born mothers. But Scots-born mothers accounted for 2 out of 5 of the increase in the numbers of births since 2006, and East European mothers accounted for 1 in 3.

In virtually all countries and societies more boys are born than girls. The records held by the Registrar General show that, over the past 150 years, the sex ratio at birth in Scotland has been just under 106 boys for every 100 girls.

The proportion of maternities in Scotland resulting in multiple births has remained relatively constant at just over 1 per cent throughout the last 150 years. On average, just over 1 per cent of multiple births have involved triplets or higher order multiples.

The first hundred years of civil registration show a gradual decline in births to unmarried parents from around 10 per cent in the 1860s to 4 per cent in the late 1950s. Since the 1960s, the proportion has increased steeply to the point where almost half of all children are born to unmarried parents.

The age profile of mothers in 2007 varied significantly by socio-economic class (as defined by occupation). For those allocated to 'managerial and professional' categories there was a particularly marked peak of childbearing in the 30-34 age group. By comparison, the peak childbearing age for those in 'routine' and semi-routine' categories was 20-24.

In 2007, the average age of all mothers at the time of giving birth was 29.4 compared with 26.1 in 1977, 26.7 in 1987 and 28.7 in 1997.

Fertility levels are not uniform across the country. The urban hinterlands and the more rural areas tend to have higher than average rates of fertility. This may be associated with the availability of affordable family housing and lower female economic activity rates.

Since 2002 (when the annual number of births began to increase) the general fertility rate has increased from 48.1 to 54.8 births for every 1,000 females of childbearing age, a rise of 14 per cent.

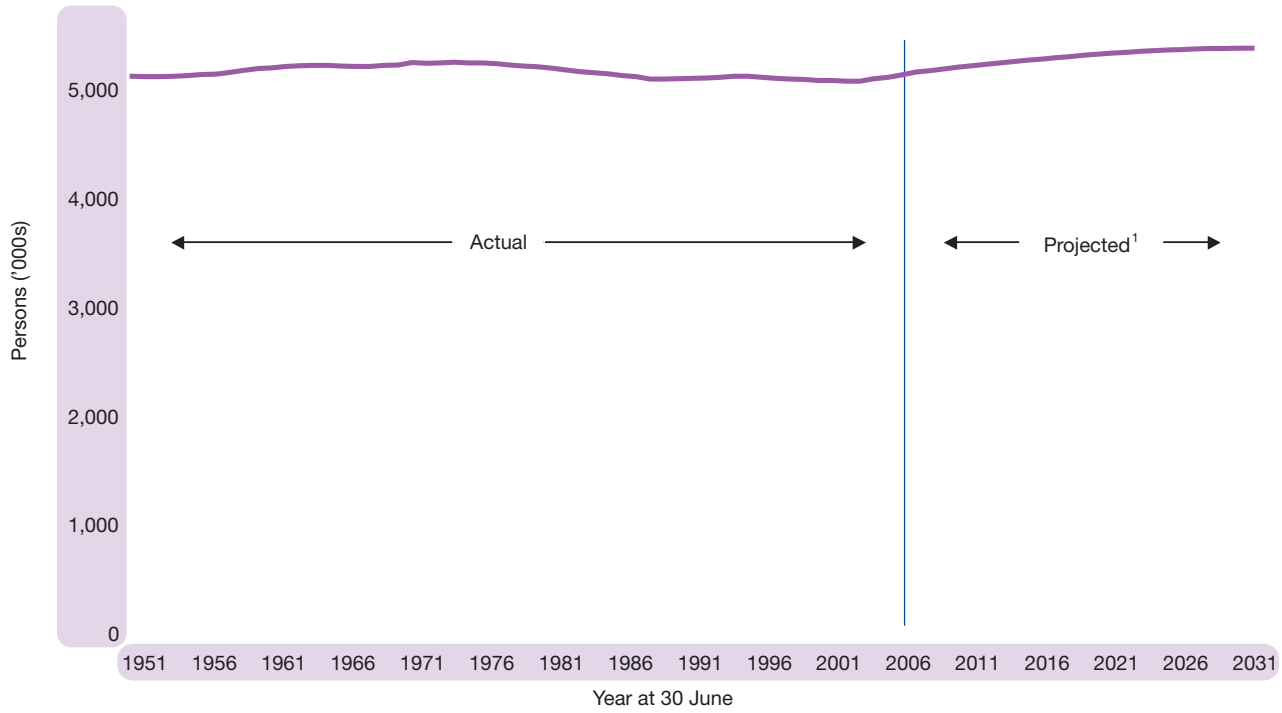
POPULATION

The latest estimate of Scotland's population (on 30 June 2007) is 5,144,200 – the highest since 1983. The increase of 27,300 people on the previous year was the biggest single year increase since 1946-47. There are almost 90,000 more people in Scotland than in 2002, when the population hit its lowest level since just after the Second World War.

The recent increase in Scotland's population has been driven mostly by net in-migration although, during 2006-07, there were also more births than deaths. In the twelve months to 30 June 2007, in-migration exceeded out-migration by 26,800. This included a net gain of around 8,800 from the rest of the UK and a net gain of around 16,800 from overseas (including asylum seekers). Movements to and from the armed forces showed a net gain of around 1,200. In the same period, there were around 1,100 more births than deaths (56,730 births and 55,650 deaths), the number of births having risen by almost 1,800 and the number of deaths having risen by almost 400 compared to the year to end June 2006.

The rise in Scotland's population in the last five years should be seen in the context of the relative stability of the population over the last 50 years, as shown in **Figure 1.1**. The population reached a peak of 5.24 million in 1974 before falling to 5.05 million in 2002 and then rising again in the last five years.

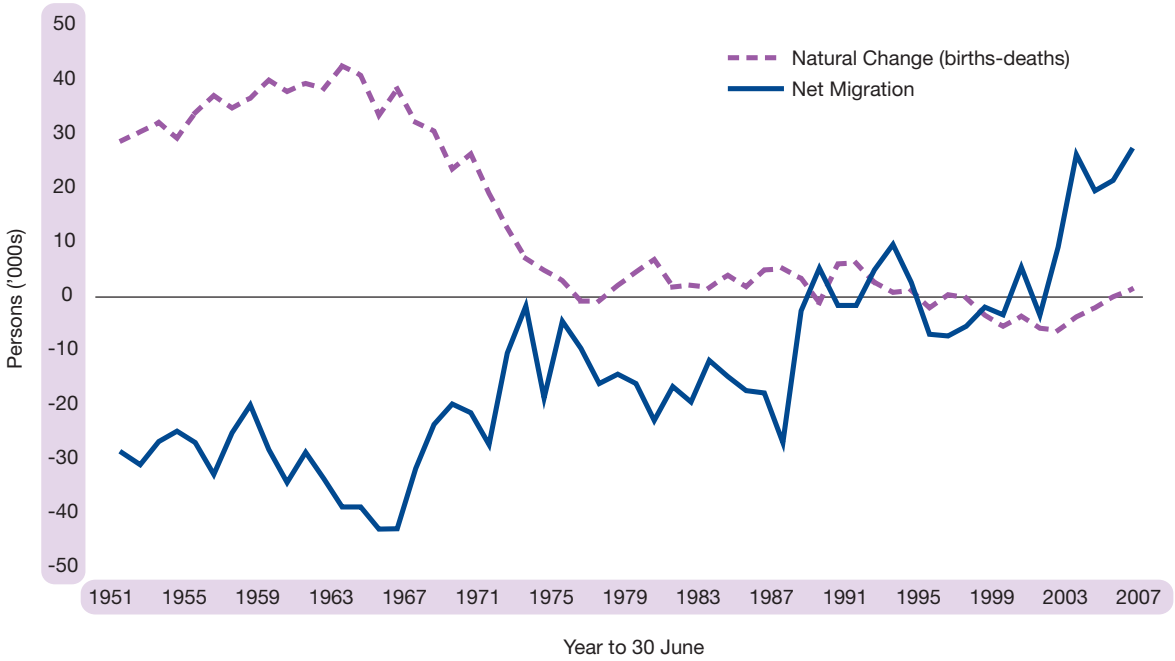
Figure 1.1 Estimated population of Scotland, actual and projected, 1951-2031



[1] 2006-based projections.

Figure 1.2 shows the trends in natural change (births minus deaths) and migration. Between 1966 and 1974, both natural change and net out-migration fell dramatically, although the natural increase generally remained greater than net out-migration. This resulted in a growth in population up to 1974. From that point on, through the late 1970s and the 1980s, net out-migration was higher than the natural increase, causing the population to decline. In recent years the gap between births and deaths has closed, and indeed reversed, and Scotland has experienced record levels of net in-migration. So the population has increased, although the increases in the last five years are still relatively small, averaging less than 0.5 per cent per year.

Figure 1.2 Natural change and net migration, 1951-2007

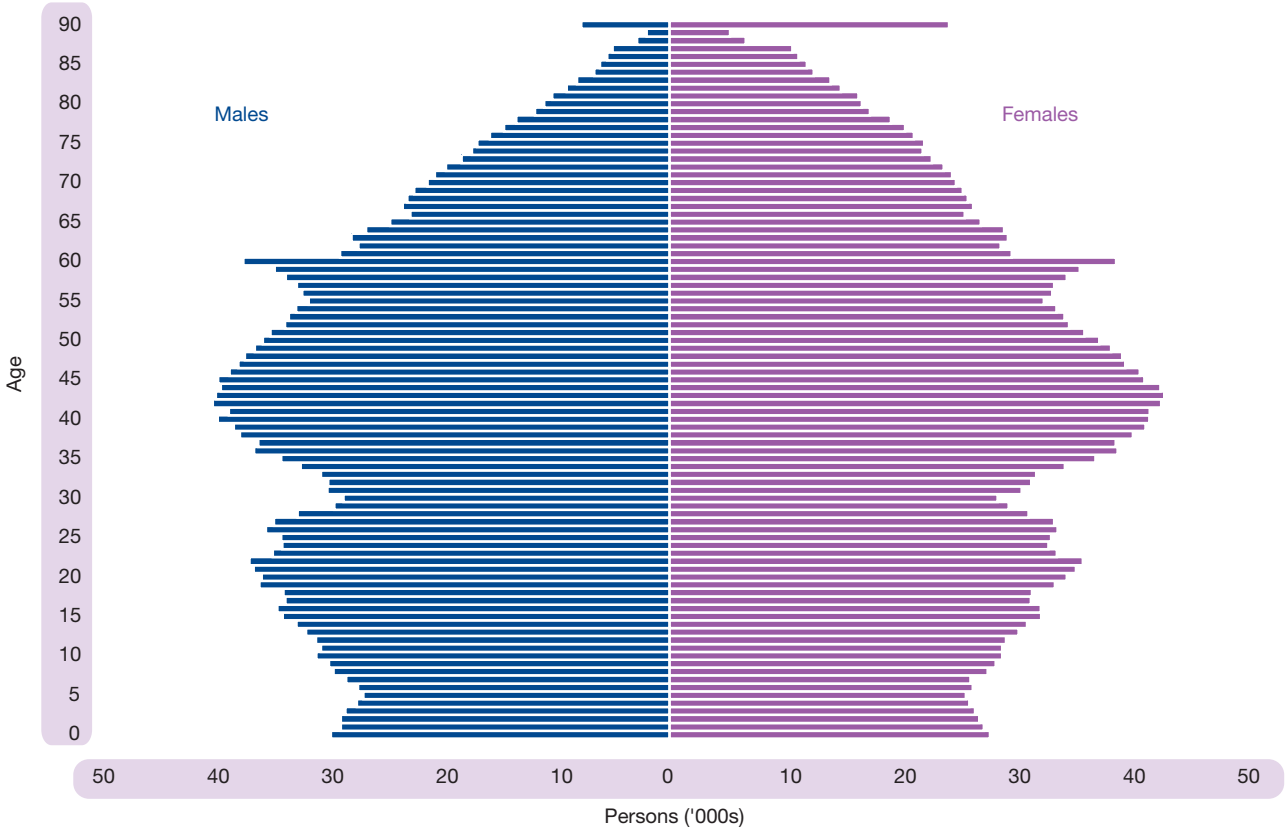


Age Structure

The age/sex composition is one of the most important aspects of the population, as changes in different age groups will have different social and economic impacts. For example, increases in the elderly population are likely to place a greater demand on health and social services.

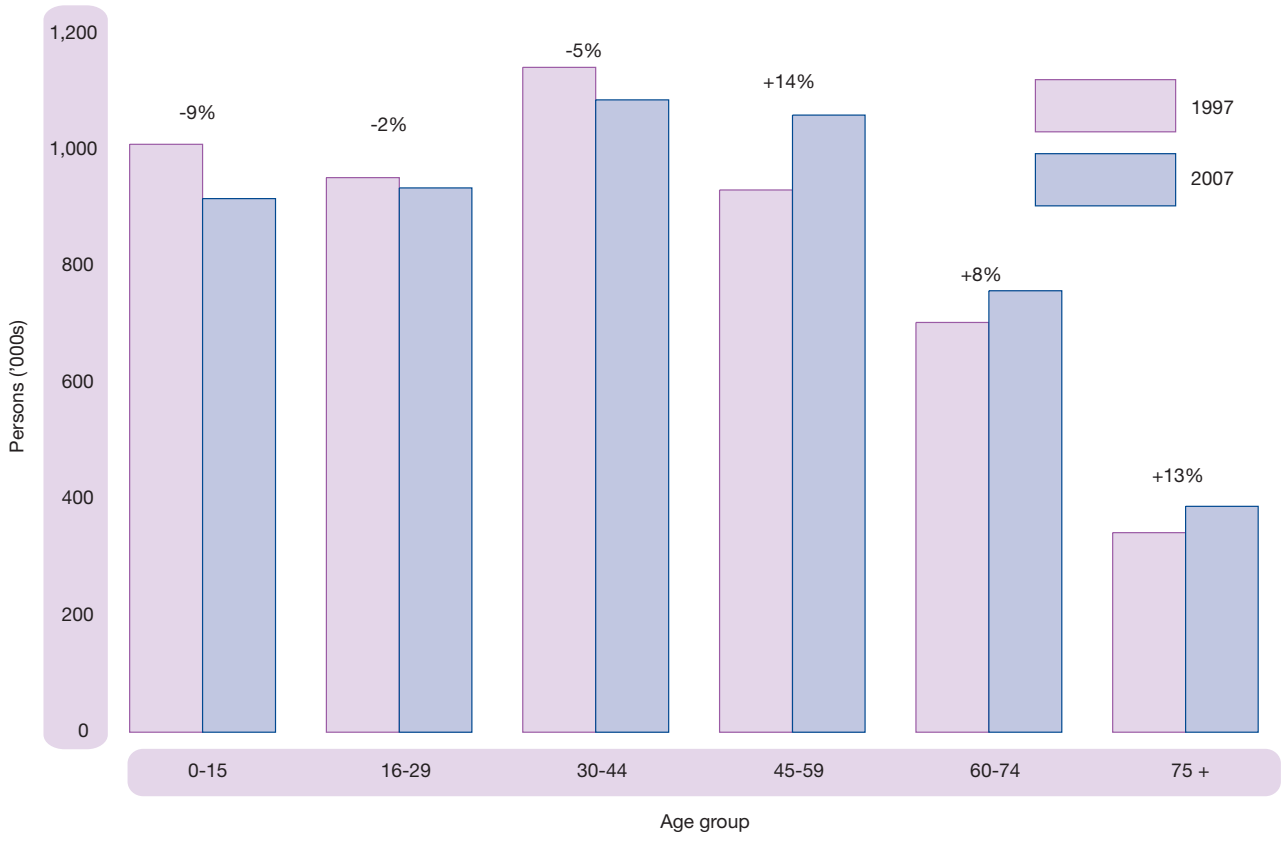
Figure 1.3 shows the age structure of the population in 2007. Eighteen per cent of the population was aged under 16 while 19 per cent was of pensionable age (60 and over for women and 65 and over for men) and the remaining 63 per cent of working age (16-59 for women, 16-64 for men). Amongst older people, particularly those aged over 75, the higher number of females reflects the longer expectation of life for women, partly as a result of male mortality rates during the Second World War. The sharp peak at age 60, and the bigger bulge between the ages of 35 and 45, are the result of the two baby booms of 1947 and the 1960s.

Figure 1.3 Estimated population by age and sex, 30 June 2007



The changing structure of Scotland's population since 1997 is illustrated in **Figure 1.4**. During this period the population has increased by around 60,900 (1.2 per cent), from 5.08 million to 5.14 million. Of particular note is the decrease of 9 per cent in the number of children under 16 and the increase of 13 per cent in the number of people aged 75 and over. The ageing of the population is also evident in the rise of 14 per cent in the 45-59 age group, and of 8 per cent in the 60-74 age group.

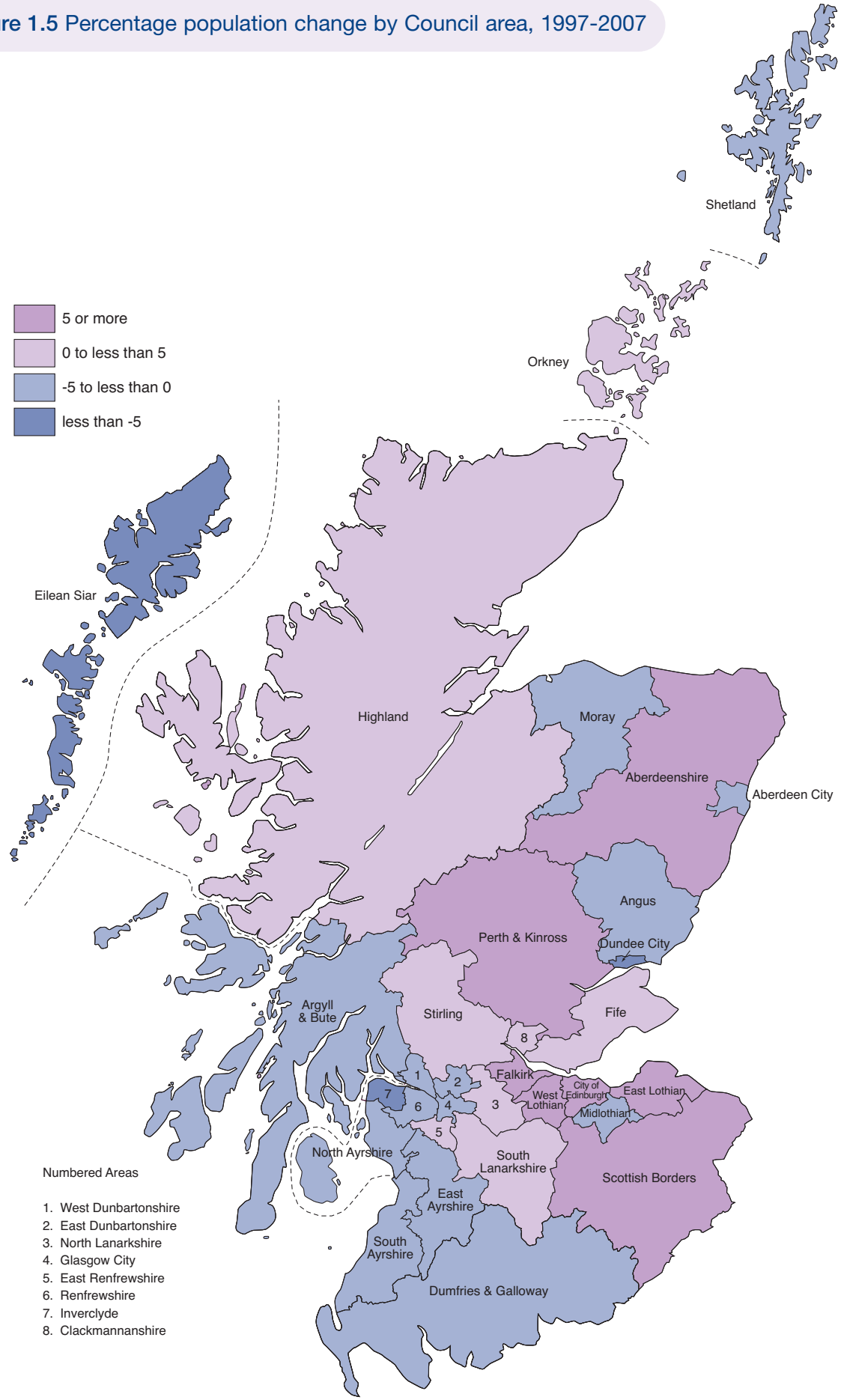
Figure 1.4 The changing age structure of Scotland's population, 1997-2007



Changes within Scotland

The map at **Figure 1.5** shows the percentage change in population between 1997 and 2007 for each Council area.

Figure 1.5 Percentage population change by Council area, 1997-2007



The Council areas in which the population fall was greatest were Inverclyde (-6.2 per cent), Dundee City (-6.1 per cent) and Eilean Siar (-5.8 per cent). The largest absolute reduction in numbers was in Dundee City (-9,200). West Lothian (+10.5 per cent), East Lothian (+7.6 per cent) and Perth & Kinross (+6.1 per cent) saw the greatest percentage increases, with the largest increase in absolute numbers in Edinburgh (+22,350).

The relative importance of migration and natural change differs between areas. In some areas of population increase, such as West Lothian, Aberdeenshire and East Renfrewshire, the gain is attributable both to migration and to natural increase. In other areas, the population increase is due to in-migration, despite fewer births than deaths. These included Perth & Kinross, Scottish Borders, Highland and Fife. Other areas with a population increase but with a near-zero natural change were Falkirk, City of Edinburgh and Clackmannanshire.

Similarly, some areas of population decline, such as Inverclyde, Dundee City, Eilean Siar, West Dunbartonshire and Renfrewshire have experienced decreases both from migration and natural change. In contrast, the main factor in the population decline of the Shetland Islands, East Dunbartonshire and Aberdeen City is net out-migration. In other areas such as South Ayrshire, Argyll & Bute and Dumfries & Galloway the population decline was mainly attributable to more deaths than births. This analysis is shown in **Table 1.1**, which compares the rates of natural change and migration per 1,000 population across the local authority areas.

Table 1.1 Components of population change for Council areas: 1997-2007

	Natural change[1,2]	Net civilian migration and other changes[1,2]	Percentage Population change[2,3]
SCOTLAND	**-0.6**	**1.8**	**1.2**
Council areas			
Inverclyde	-2.7	-3.5	-6.2
Dundee City	-1.8	-4.3	-6.1
Eilean Siar	-4.9	-0.9	-5.8
West Dunbartonshire	-1.4	-2.9	-4.3
East Dunbartonshire	-0.1	-4.0	-4.1
Shetland Islands	1.7	-5.5	-3.9
Aberdeen City	-0.1	-3.6	-3.7
Renfrewshire	-0.8	-2.8	-3.5
South Ayrshire	-3.6	1.9	-1.7
East Ayrshire	-1.6	0.1	-1.5
Glasgow City	-1.5	0.0	-1.5
North Ayrshire	-1.4	0.0	-1.4
Argyll & Bute	-4.0	3.6	-0.4
Moray	-0.4	0.0	-0.3
Dumfries & Galloway	-2.9	2.7	-0.1
Angus	-2.1	2.0	-0.1
Midlothian	0.8	-0.9	-0.1
Orkney Islands	-1.9	2.3	0.5
North Lanarkshire	1.2	-0.5	0.7
East Renfrewshire	0.9	0.7	1.6
South Lanarkshire	-0.3	1.9	1.7
Clackmannanshire	0.1	2.7	2.8
Fife	-0.5	4.5	4.0
Highland	-0.9	5.2	4.3
Stirling	-0.2	5.1	4.9
Edinburgh, City of	0.2	4.8	5.0
Falkirk	0.1	5.1	5.1
Scottish Borders	-2.5	7.6	5.2
Aberdeenshire	1.5	4.3	5.8
Perth & Kinross	-2.1	8.2	6.1
East Lothian	-0.5	8.1	7.6
West Lothian	3.8	6.7	10.5

1 Per year per 1,000 population at 1997.

2 The underlying data used to produce these figures can be found in Table 7 of the 'Mid-2007 Population Estimates Scotland' publication.

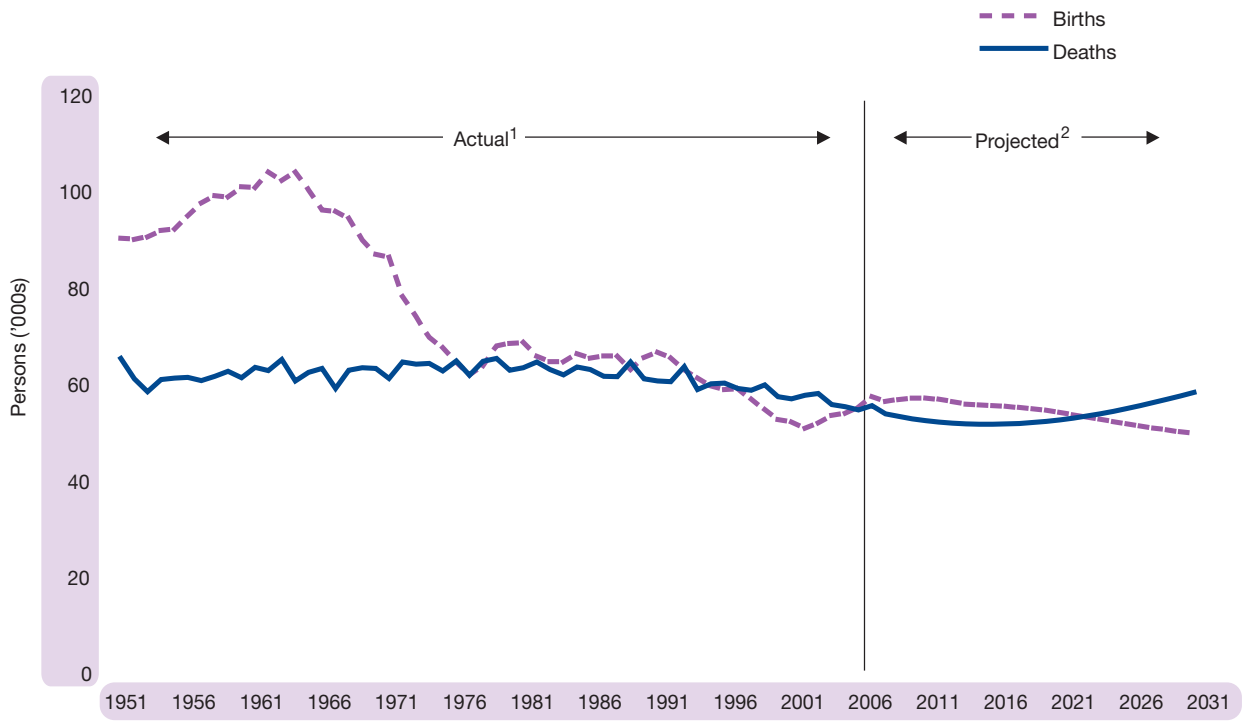
3 Ordered by population change.

Projected population

The latest population projections are based on the estimate of Scotland's population at 30 June 2006. These projections, based on existing trends and making no allowance for the impact of government policies and other factors, show the total population of Scotland rising from 5.12 million in 2006 to 5.37 million in 2031 (**Figure 1.1**). Longer term projections show the population peaking in 2031 and then slowly declining.

Up until around 2021 natural change and migration both act to increase the size of the population as the number of births exceeds the number of deaths and there is net in-migration. After this point the number of deaths exceeds the number of births whilst the net migration into Scotland continues. By 2031, the natural decrease more than cancels out the net in-migration and so Scotland's population begins to fall. **Figure 1.6** shows the number of births exceeding the number of deaths until 2021 and then the number of deaths rising beyond the number of births and continuing to rise while the number of births falls.

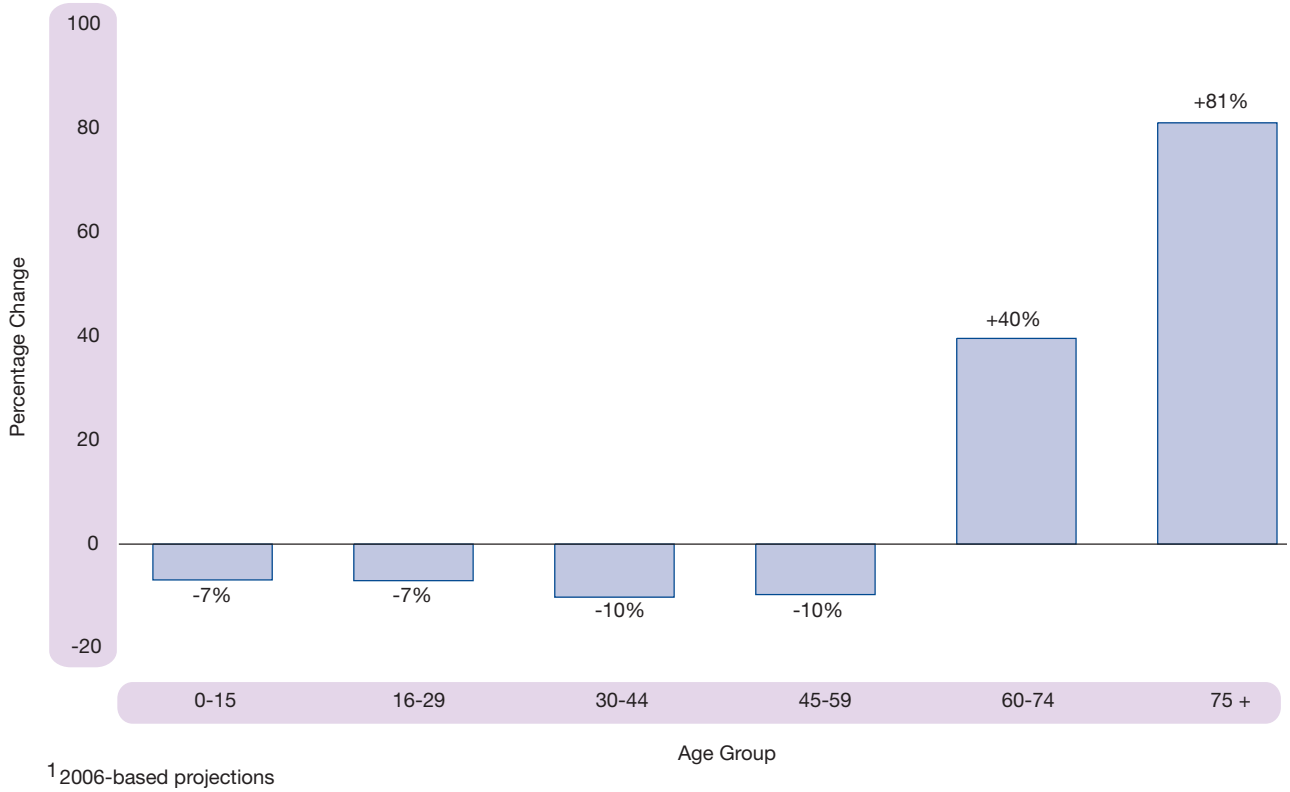
Figure 1.6 Births and deaths, actual and projected, Scotland, 1951-2031



[1] Calendar year.
[2] 2006-based mid-year projections.

Between 2006 and 2031, Scotland's population is projected to age markedly. As shown in **Figure 1.7**, the number of children aged under 16 is projected to decrease by 7 per cent, from 0.92 million to 0.86 million. The number of people aged 60 and over is projected to rise by 54 per cent from 1.12 million to 1.72 million.

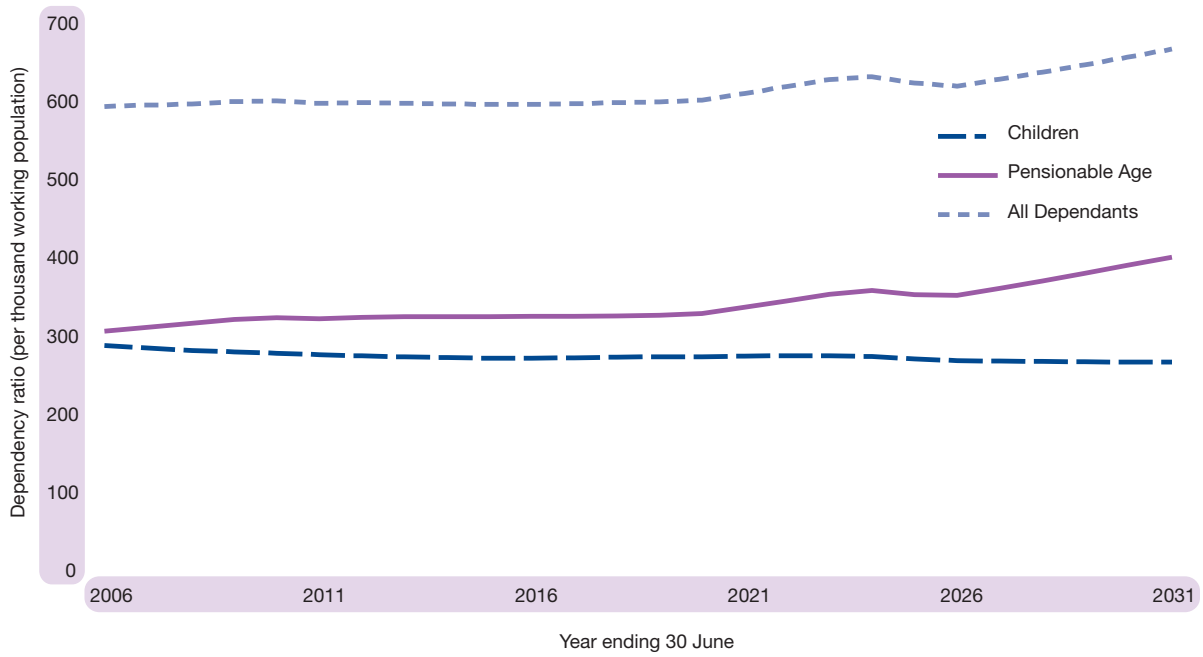
Figure 1.7 The projected percentage change in age structure of Scotland's population, 2006-2031[1]



[1] 2006-based projections

'Dependency ratios' are the number of dependants – children aged under 16 and people of pensionable age – per 1,000 working age population. **Figure 1.8** shows little overall change in these ratios over the next 15 years, but a relatively rapid increase in the pension age population relative to the working age population in subsequent years. **Figure 1.8** also takes account of the increase in the pensionable age for both men and women.[1]

Figure 1.8 Dependency Ratios[1] (per thousand working population), 2006-2031



[1] 2006-based projections

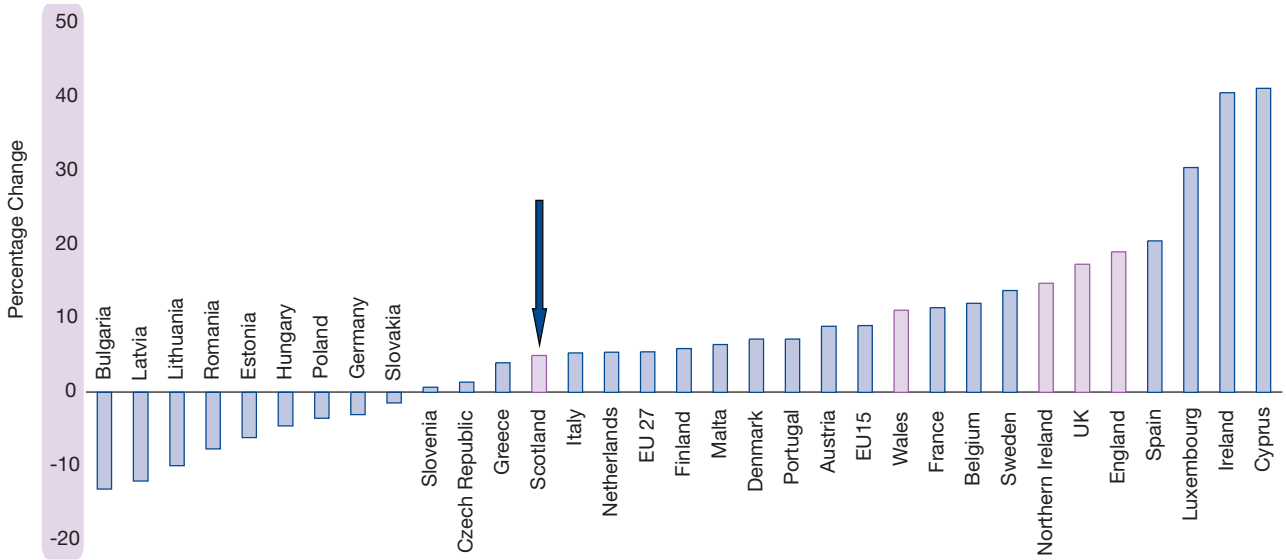
As demographic behaviour is uncertain, a number of variant population projections have been calculated, based on alternative assumptions of future fertility, mortality and migration in addition to the 'principal projection' on which the previous paragraphs are based. The variant projections give users an indication of this uncertainty. They illustrate plausible alternative scenarios, rather than representing upper or lower limits of future demographic behaviour. These variant projections, and the assumptions used, can be found on the Government Actuary's Department (GAD) website (www.gad.gov.uk).

1 Pensionable age is 65 for men, 60 for women until 2010; between 2010 and 2020 pensionable age for women rises to 65. Between 2024 and 2026 the pensionable age for both men and women increases to 66 and changes again, in two further steps, to 68 by 2046.

Scotland's position within Europe

The population of most of the countries in Europe is projected to increase over the next few years. Whilst Scotland's population is projected to rise by 5.0 per cent between 2006 and 2031, countries such as Ireland and Spain, as well as the rest of the UK, are all projected to have much bigger increases. The population of Europe (EU-27) is projected to increase by 5.5 per cent and the EU-15 by 9.1 per cent during this period. However Germany, and a number of Eastern European countries, have a projected population decline as **Figure 1.9** shows.

Figure 1.9 Projected percentage population change in selected European countries 2006-2031



Source: ONS (UK and constituent countries) and Eurostat. Eurostat projections are 2008 based so the 2006 population estimates have been compared to the projected population for 2031. See "Appendix 2 – Notes and Definitions" for definition of EU15 and EU27.

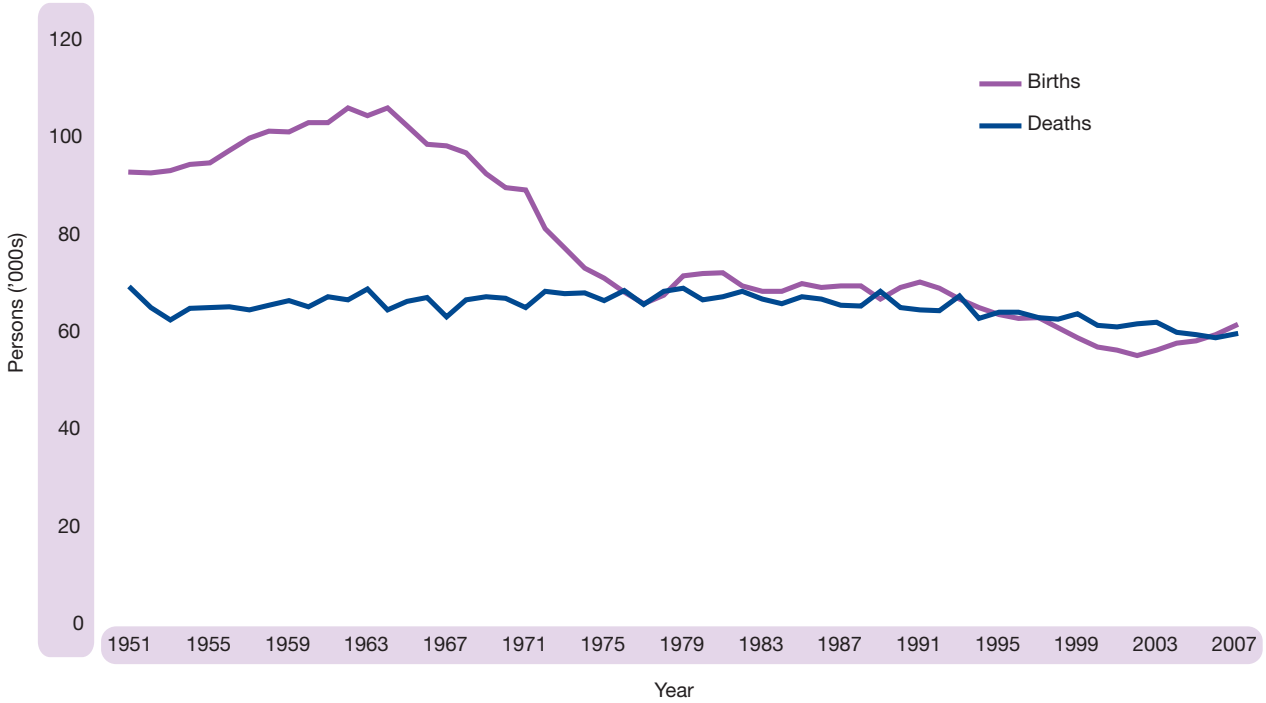
Scotland is not alone in having an ageing population. The pattern of change over the last twenty years and the projected change in the age distribution is similar to that of other countries in the UK and Europe, although the rate of change varies.

BIRTHS

Numbers

The number of births registered in Scotland in 2007 was 57,781. This was 2,091 (3.8 per cent) more than in 2006 and 6,511 (12.7 per cent) more than 2002's total – which was the lowest since civil registration began in 1855, with only half the number of births recorded during the 'baby boom' of the early 1960s. Increases have been recorded in each year since 2002. The number of births and deaths registered in Scotland since 1951 is shown in **Figure 1.10**.

Figure 1.10 Births and deaths, Scotland, 1951-2007



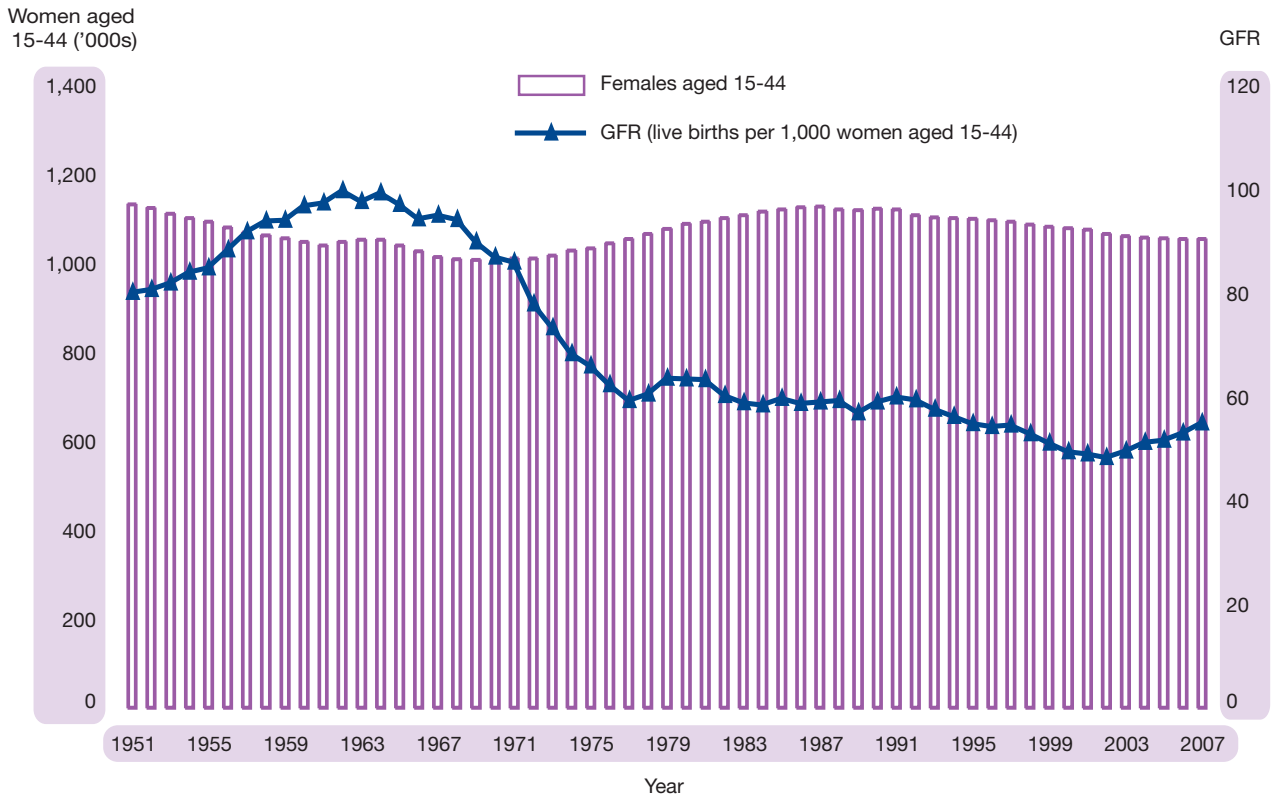
The proportion of births to unmarried parents (including births registered solely in the mother's name) has continued to rise, reaching 49.1 per cent in 2007 compared to 37.7 per cent ten years earlier and 22.8 per cent in 1987. However, the proportion of births registered solely in the mother's name has remained relatively constant over the past twenty years at around 7 per cent, falling to around 6 per cent in each of the last five years, suggesting that the increase in births to unmarried parents has been in babies born to unmarried partners who are in a stable relationship.

Fertility Rates

The simplest fertility rate is the *crude birth rate* which is defined as the number of live births per 1,000 total population. **Appendix 1 Table 1** shows that in 2007 the crude birth rate for Scotland stood at 11.2 compared with around 20 forty years ago. Because it takes no account of the age/gender structure of the population, the crude birth rate has only limited value (e.g. for giving rough comparisons between areas with broadly similar age/gender structures). **Appendix 1 Tables 2** and **3** present crude birth rates for administrative areas in Scotland and selected European countries. **Appendix 1 Table 2** also gives standardised birth rates for the administrative areas of Scotland: these adjusted birth rates take account of the population structures in the different areas.

A better approach is to consider the *general fertility rate* (GFR) which is based on the numbers of women of childbearing age. **Figure 1.11** shows the general fertility rate (births per 1,000 females aged 15-44), along with the number of women aged 15-44. During the 'baby boom' of the 1960s, the GFR reached 99.5 (in 1962). It then fell sharply to around 60 during the late 1970s and 1980s before declining more slowly during the 1990s, eventually dipping below 50 at the start of the 21st century. It has risen slightly over the last few years to its 2007 value of 54.8. Interestingly, the figure shows that the female population aged 15-44 was relatively low during the baby boom of the 1960s. Moreover, the levelling off in the annual numbers of births during the 1980s was in part associated with the increasing numbers of women born in the 1950s and 1960s, passing through their childbearing years.

Figure 1.11 Estimated female population aged 15-44 and general fertility rate (GFR), Scotland, 1951-2007



A more detailed picture is given by the age *specific fertility rates* (ASFRs) by mother's age in five-year age groups in **Figure 1.12**. This shows many significant age-related features of the pattern of childbearing over the last fifty years. The key point is that, as well as choosing to have fewer babies, women are also choosing to have them later in life. Other points of interest are:

- The 'baby boom' of the 1960s was mostly due to increased birth rates of women in their twenties.
- Since the early 1960s, women in their twenties have experienced a dramatic fall in fertility. For women aged 20-24 the fertility rate has fallen by around two-thirds; and for those aged 25-29 it has fallen by just over a half.
- Fertility rates for women aged 30 and above have gradually increased over the last thirty years; in particular, the rate for 30-34 year olds overtook that of 25-29 year olds in 2002 and now stands at 100 births per 1,000 women.
- Despite the recent increases, rates for women aged over 30 are still slightly lower than they were in the 1950s and 1960s.
- The rate for 15-19 year olds fell by around one-third during the 1970s and remained around 30 births per 1,000 women for the following twenty years.
- All the rates except that for teenagers showed a slight rise in recent years.

Figure 1.12 Live births per 1,000 women, by age of mother, Scotland, 1951-2007

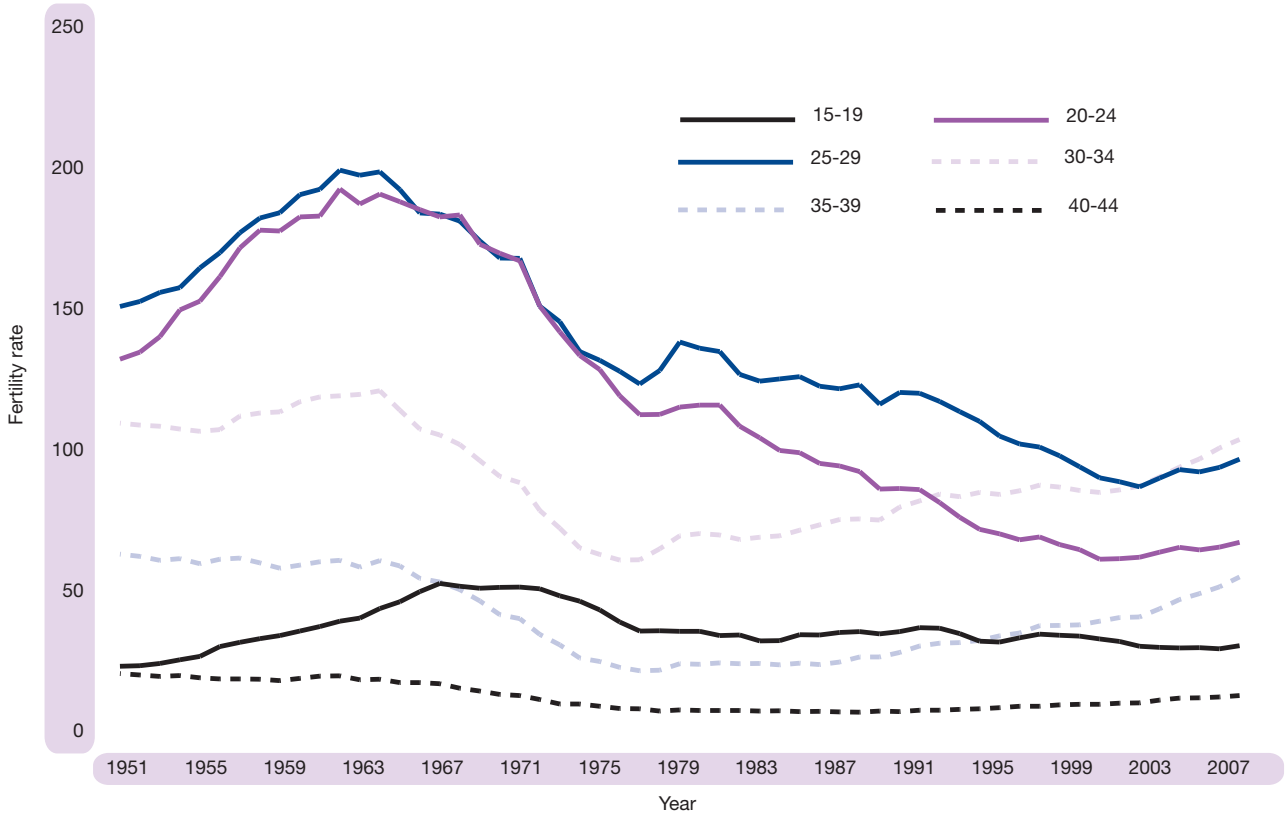
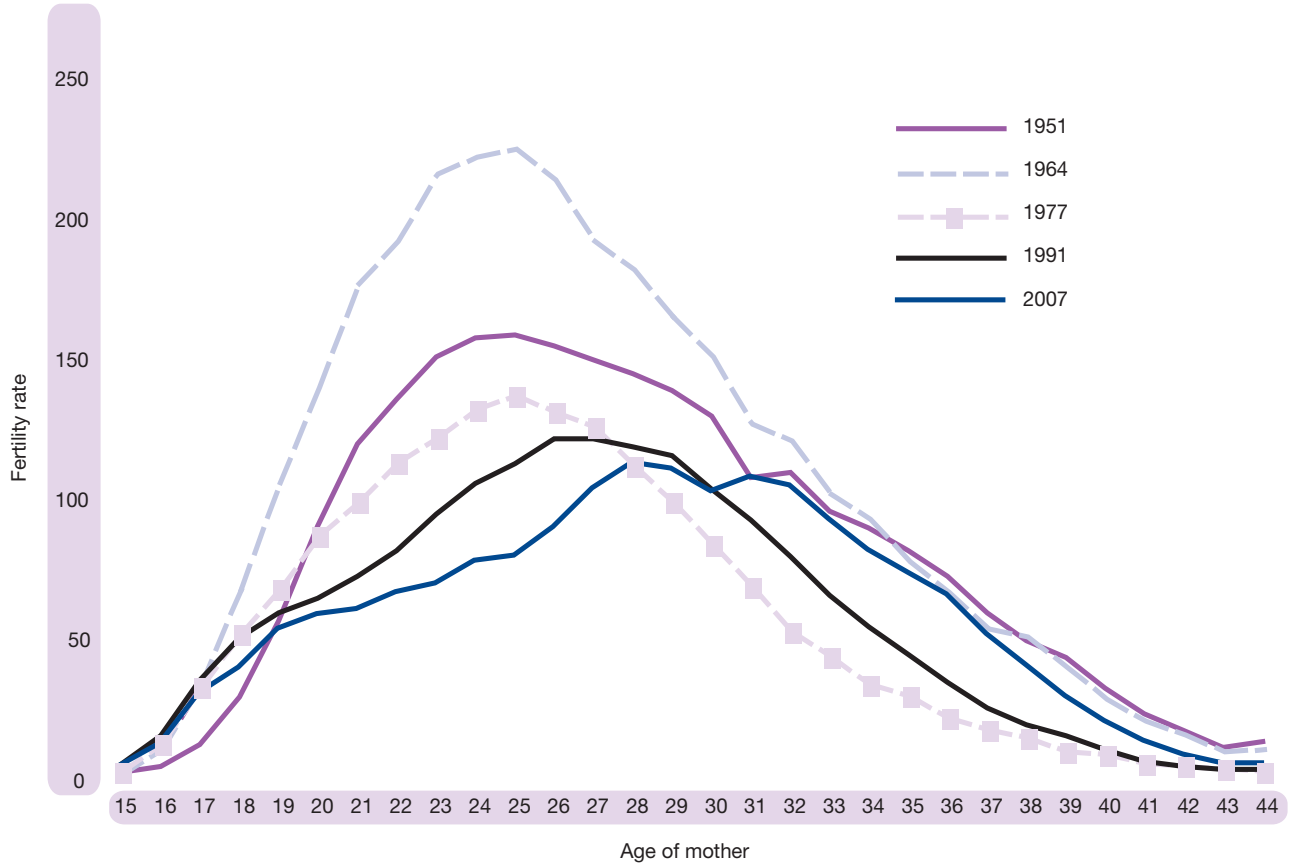


Figure 1.13 further illustrates the ageing pattern of fertility by showing detailed ASFRs for selected years: 1951, 1964, 1977, 1991 and 2007. Though the levels differed considerably, the age patterns of fertility for 1951, 1964 and 1977 were roughly the same. However, the age distribution for 1991 shows a distinctly older peak and that for 2007 reveals the large reduction in fertility of women in their twenties.

The trend towards later childbearing is underlined by changes in the average age of mothers for all births. This was 29.4 in 2007, compared with 27.4 in 1991, 26.1 in 1977, and 27.4 in 1964.

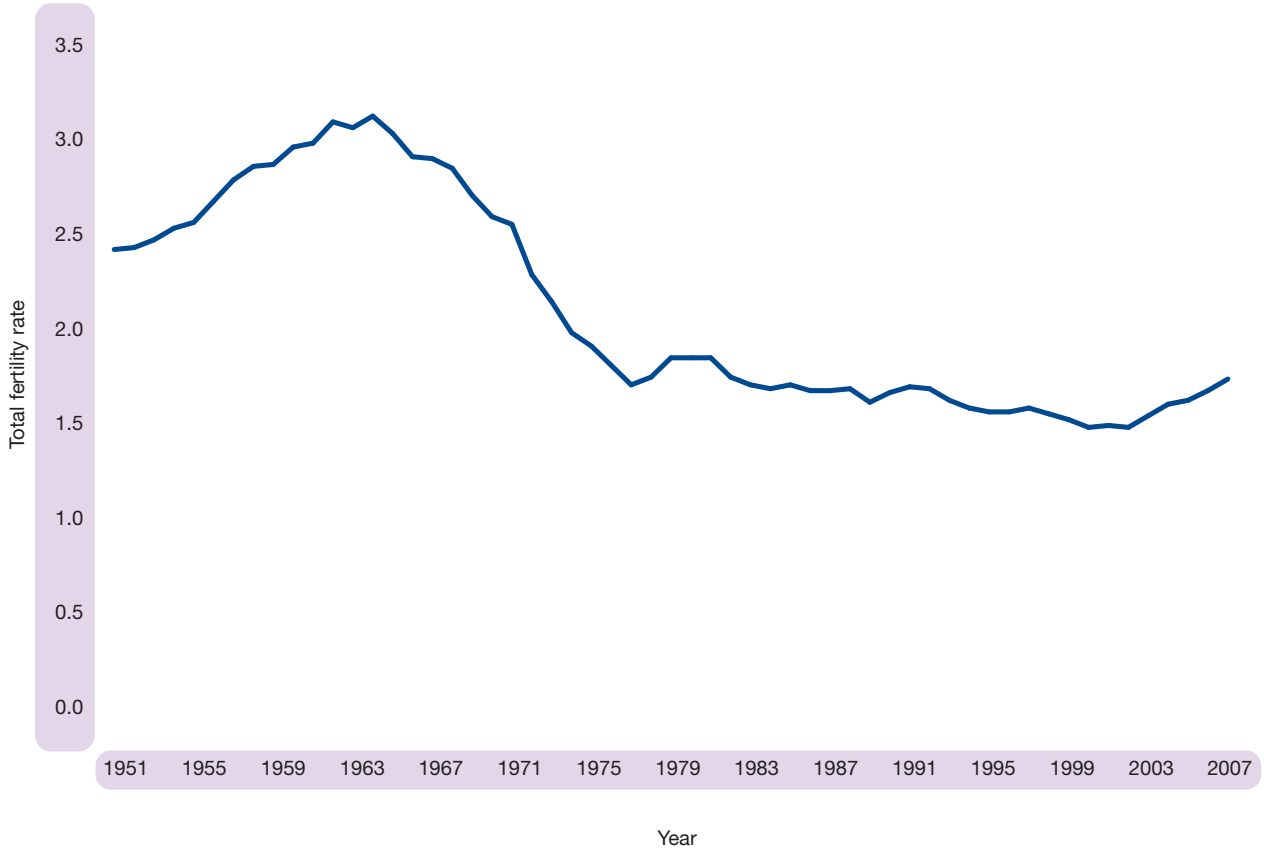
Figure 1.13 Live births per 1,000 women, by age, selected years



The *total fertility rate* (TFR) is a commonly used summary measure of fertility levels calculated by summing the age specific rates for a single year. It gives the average number of children that a group of women would expect to have if they experienced the observed ASFRs in each of their childbearing years. For a population to replace itself, the TFR needs to be around 2.1.

The TFR for Scotland since 1951 is plotted in **Figure 1.14**. Not surprisingly, it follows the same general pattern as the GFR described above. It rose to 3.09 in 1964 before dropping sharply to 1.70 in 1977. Since then, with a few minor fluctuations, it fell more slowly to the 2002 rate of 1.48 before increasing to 1.60 in 2004 and 1.73 in 2007.

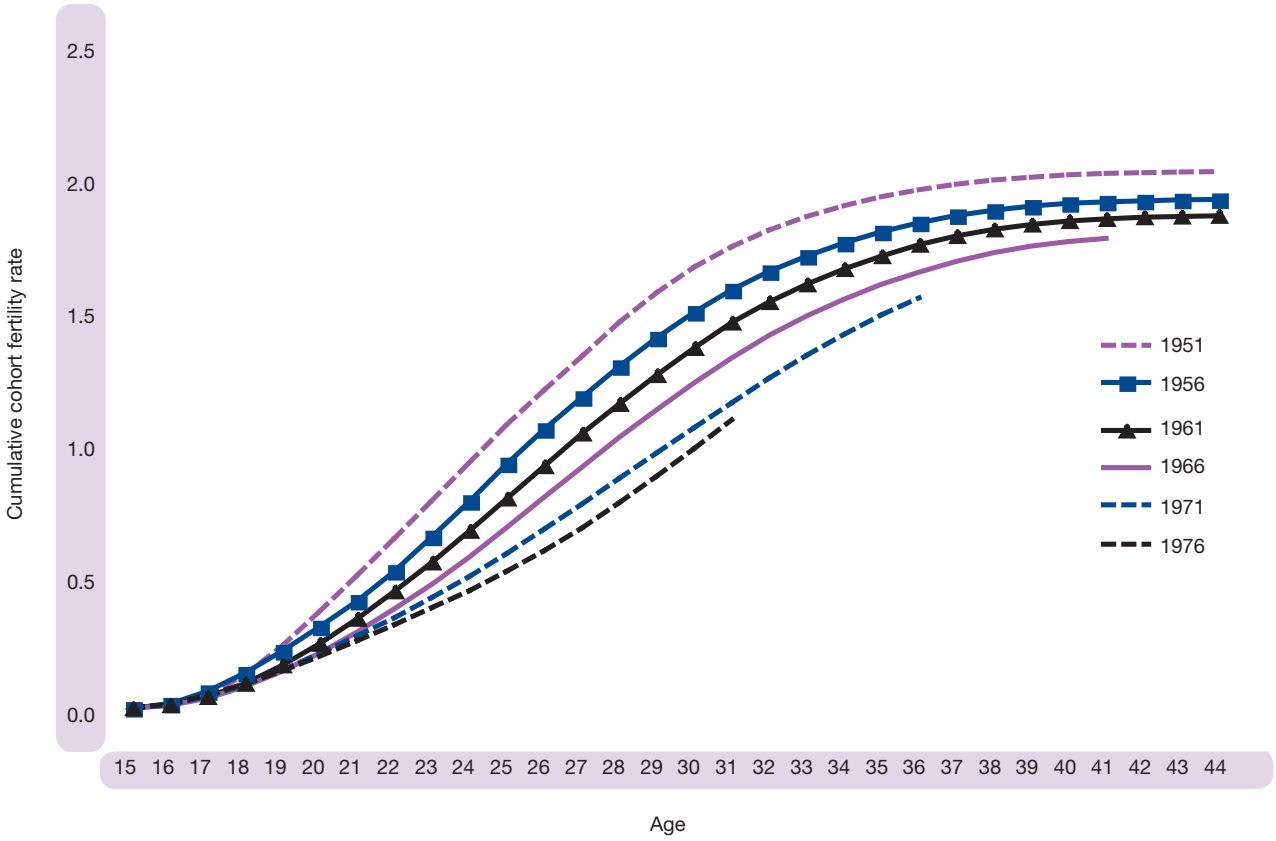
Figure 1.14 Total fertility rate, Scotland, 1951-2007



Though widely used, in part because it is relatively easy to calculate, the TFR has serious deficiencies as it is based on only one year's observations. For example, when women are delaying childbearing, as they have been in Scotland, the TFR is likely to underestimate the number of children women will eventually have.

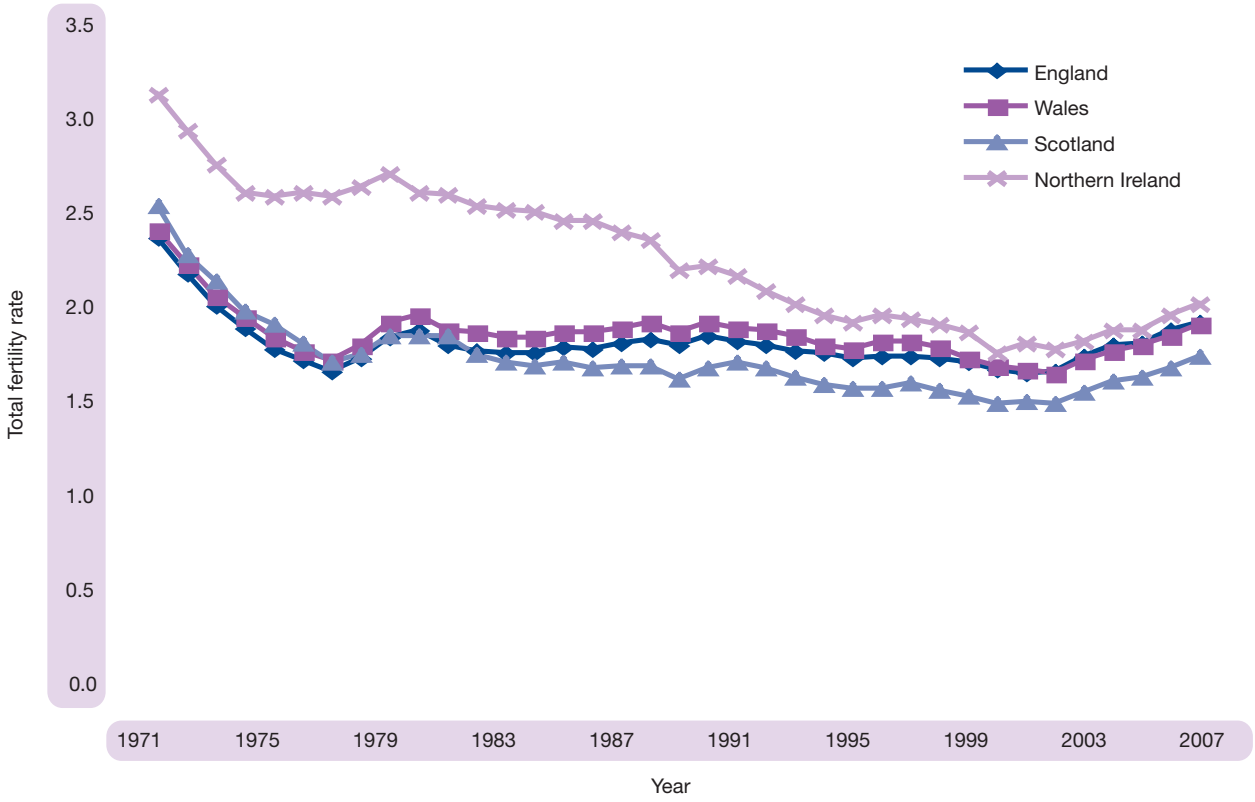
A more satisfactory measure is *average completed family size*. **Figure 1.15** shows the completed family size (or cumulative cohort fertility) by age for women born in selected years. Those born in 1951 had attained an average completed family size of 2.03 by the time they reached 45, whereas for those born in 1956 the figure was 1.93. The figure also permits the comparison of family size at selected ages for the various cohorts as they pass through the childbearing ages. For example, by age 30 the cumulative childbearing of the 1971 cohort is about 0.6 lower than that of the 1951 cohort. Of crucial importance is the extent to which the later cohorts are falling behind in family building. Whilst the increasing fertility rates of those aged over 30 may lead to some catching-up, it is highly unlikely that this will increase the average completed family size to the levels attained as recently as the 1960s.

Figure 1.15 Cumulative cohort fertility rate for selected birth cohorts, Scotland



Since the early 1980s Scotland's fertility has been lower than fertility in other parts of the United Kingdom. **Figure 1.16** compares the TFRs for England, Wales, and Northern Ireland since 1971 with those for Scotland. Until the late 1970s, Scotland's TFR was slightly higher than that for England and Wales. However, since the early 1980s, Scotland's TFR has dropped steadily below the levels for England and Wales. In 1971 the TFR for Northern Ireland was markedly higher than for the other three countries. However, since then the differential has been significantly reduced. It is interesting to note that the recent slight rise in fertility levels in Scotland has been paralleled elsewhere in the UK and Scotland's TFR is now at its highest level for 25 years.

Figure 1.16 Total fertility rates, UK countries, 1971-2007



More information on births and fertility is given in Chapters 2 and 3 of this report.

DEATHS

Numbers

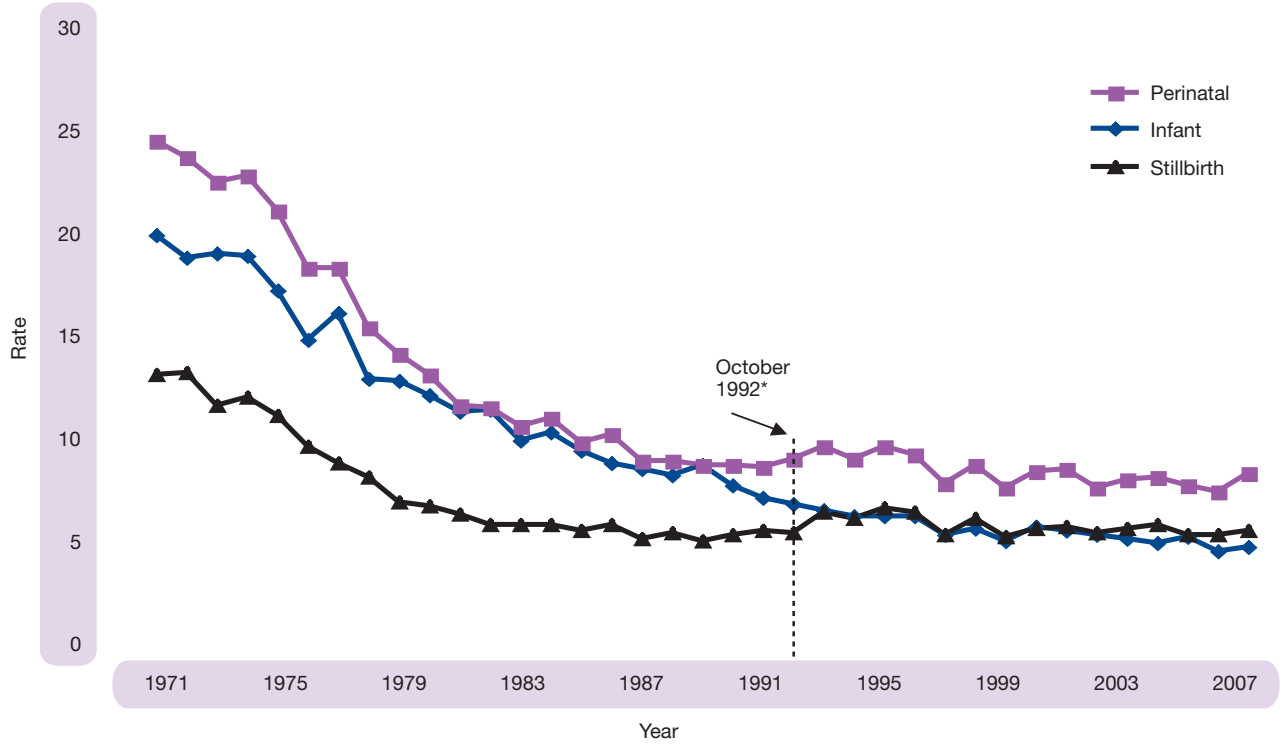
At 55,986, the number of deaths registered in Scotland in 2007 was 893 (1.6 per cent) more than in 2006.

Figure 1.10 shows that from 1951 up to the early 1990s the annual number of deaths remained relatively stable at about 60-65,000 a year. The total then declined slowly to just under 55,100 in 2006, which was the lowest annual total recorded since the introduction of civil registration in 1855.

Stillbirths, perinatal deaths and infant deaths

As can be seen in **Figure 1.17**, there have been significant improvements in the rates for stillbirths, perinatal deaths and infant deaths in the period since 1971. The stillbirth rate has reduced from 13.1 per 1,000 total births (live and still) in 1971 to 5.5 in 2007, despite a change in the definition of stillbirths in 1992 which reduced the minimum period of gestation from 28 weeks to 24 weeks (thus increasing the numbers classified as stillbirths). The rate of perinatal deaths (stillbirths and deaths in the first week of life) fell from 24.5 per 1,000 total births in 1971 to 8.3 in 2007. The infant death rate (deaths of children aged under 1) fell from 19.9 per 1,000 live births in 1971 to 4.7 in 2007.

Figure 1.17 Stillbirth, perinatal and infant death rates, per 1,000 total births, Scotland 1971-2007



* Change in definition from 28 to 24 weeks gestation.

Whilst the current rates are comparable to those for the UK as a whole, **Figures 1.18** and **1.19** show that there are several European countries that have significantly lower rates (see also **Appendix 1, Table 3**).

Figure 1.18 Stillbirth rate per 1,000 live and still births, selected countries, latest available figures

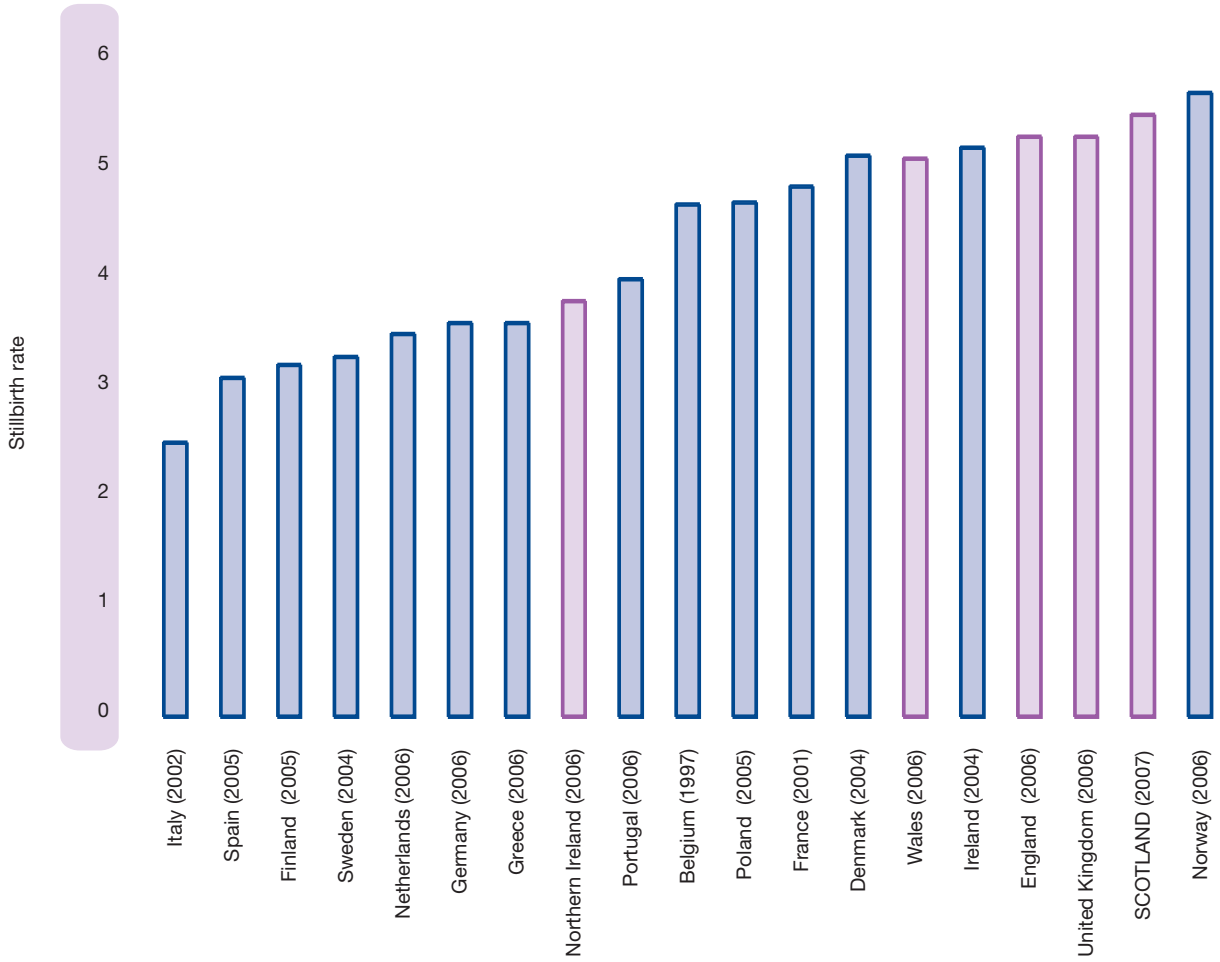
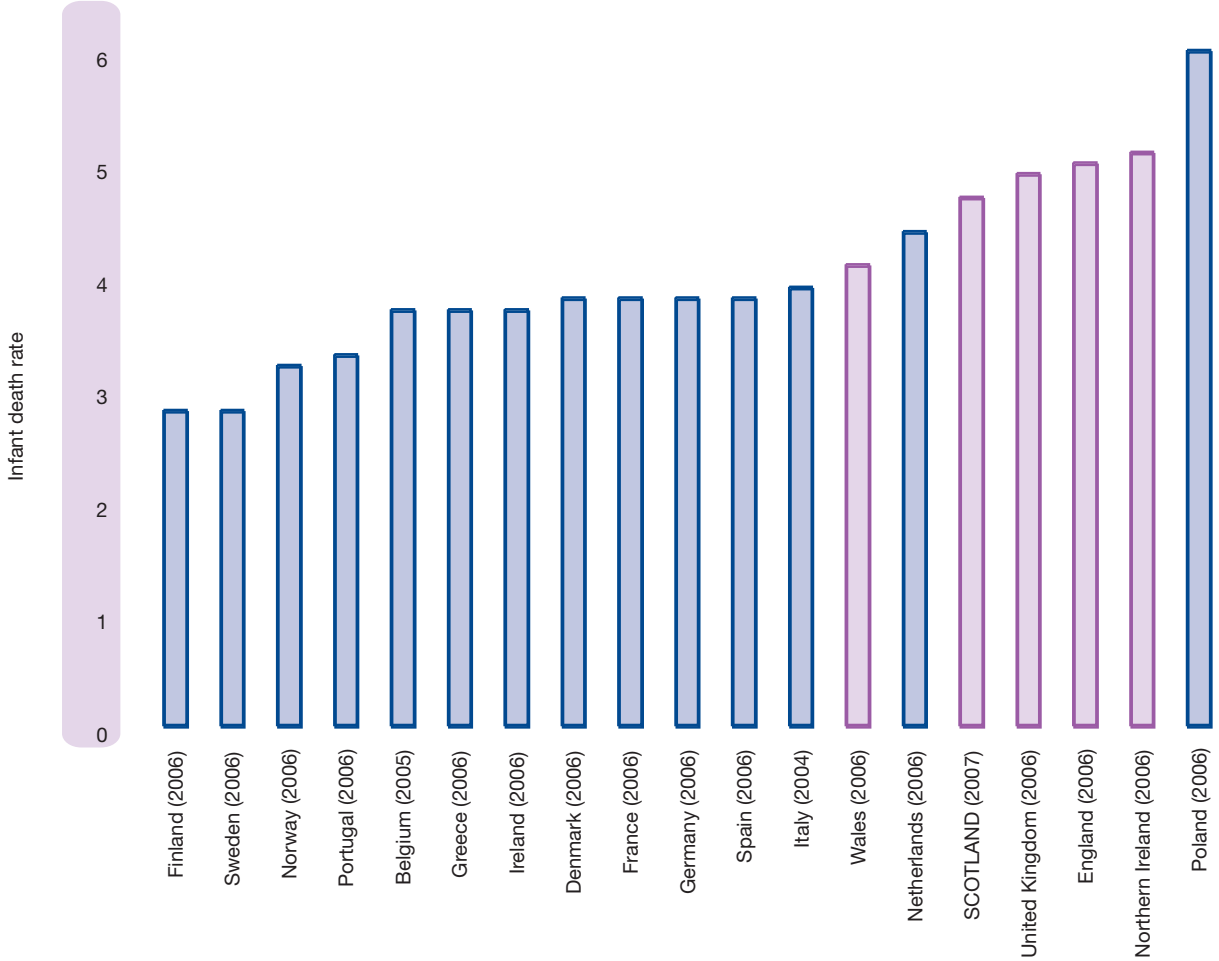


Figure 1.19 Infant death rate per 1,000 live and still births, selected countries, latest available figures



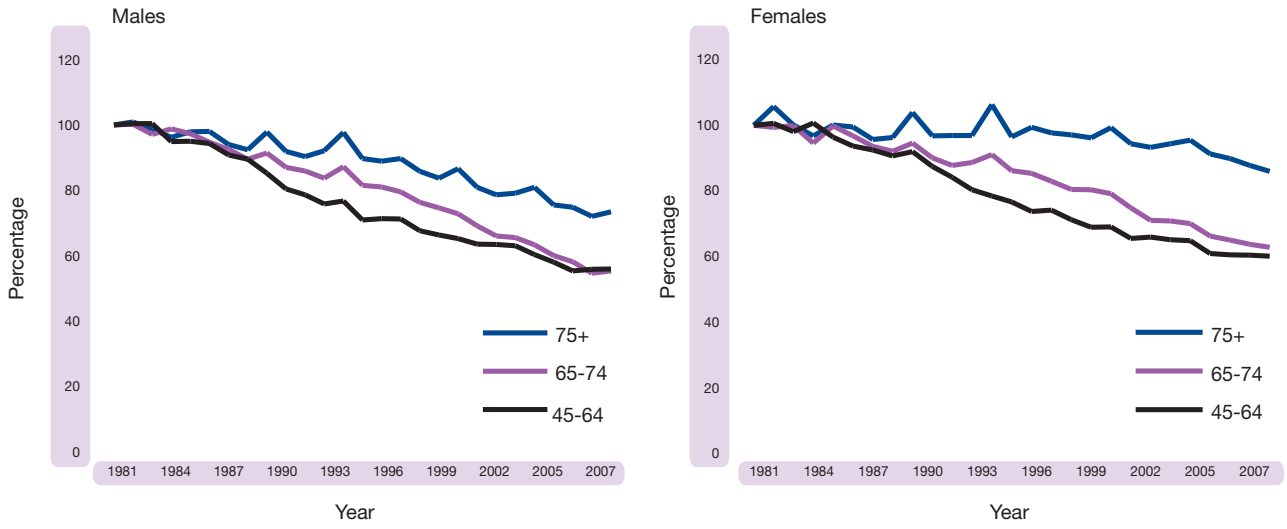
Mortality by age

About 60 per cent of deaths were of people aged 75 and over, and a further 19 per cent were between the ages of 65 and 74.

The relative stability in the total number of deaths over recent years masks significant improvements in age-specific mortality. **Figure 1.20** shows, for both men and women, selected age-specific mortality rates over the last quarter of a century relative to the 1981 rates. The three age groups shown (45-64, 65-74 and 75 and over) account for around 95 per cent of all deaths.

At these ages, there have been greater improvements in male than in female mortality. For the 45-64 age group, males and females experienced improvements of 44 per cent and 40 per cent respectively. In the 65-74 age group, males showed an improvement of 45 per cent compared to 37 per cent for females. The greatest differential is in the 75 plus age group, where male mortality has improved by 27 per cent compared to only 14 per cent for females. These changes have narrowed the difference between female and (traditionally higher) male mortality.

Figure 1.20 Age specific mortality rates as a proportion of 1981 rate, 1981-2007

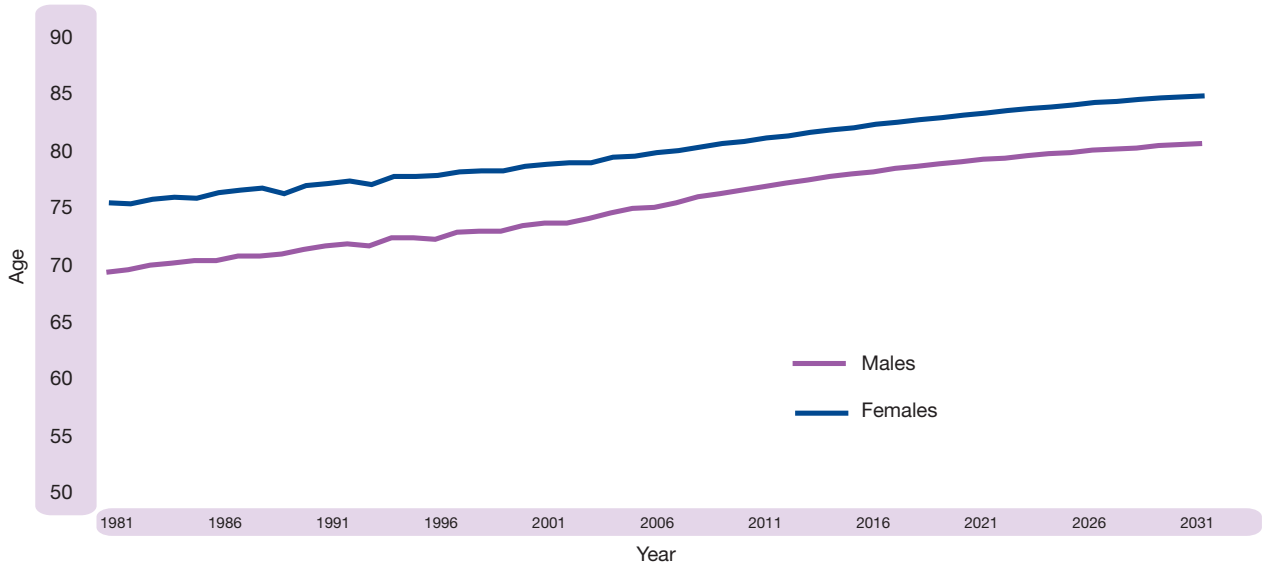


Life Expectancy

Although mortality rates in Scotland have generally fallen more slowly than in the rest of the UK and elsewhere in Europe, the improvements are still considerable and the impact is demonstrated in the steadily rising expectation of life.

The expectation of life at birth is a commonly used measure of mortality which is particularly helpful in comparing the 'health' of a nation through time and for making comparisons with other countries. **Figure 1.21** shows that the expectation of life at birth in Scotland has improved greatly over the last 25 years or so, increasing from 69.1 years for men and 75.4 years for women born around 1981 to 74.8 years and 79.7 years respectively for those born around 2006. **Figure 1.21** also illustrates that improvements in life expectancy at birth are projected to continue, rising to 80.4 years for men and 84.8 years for women by 2031.

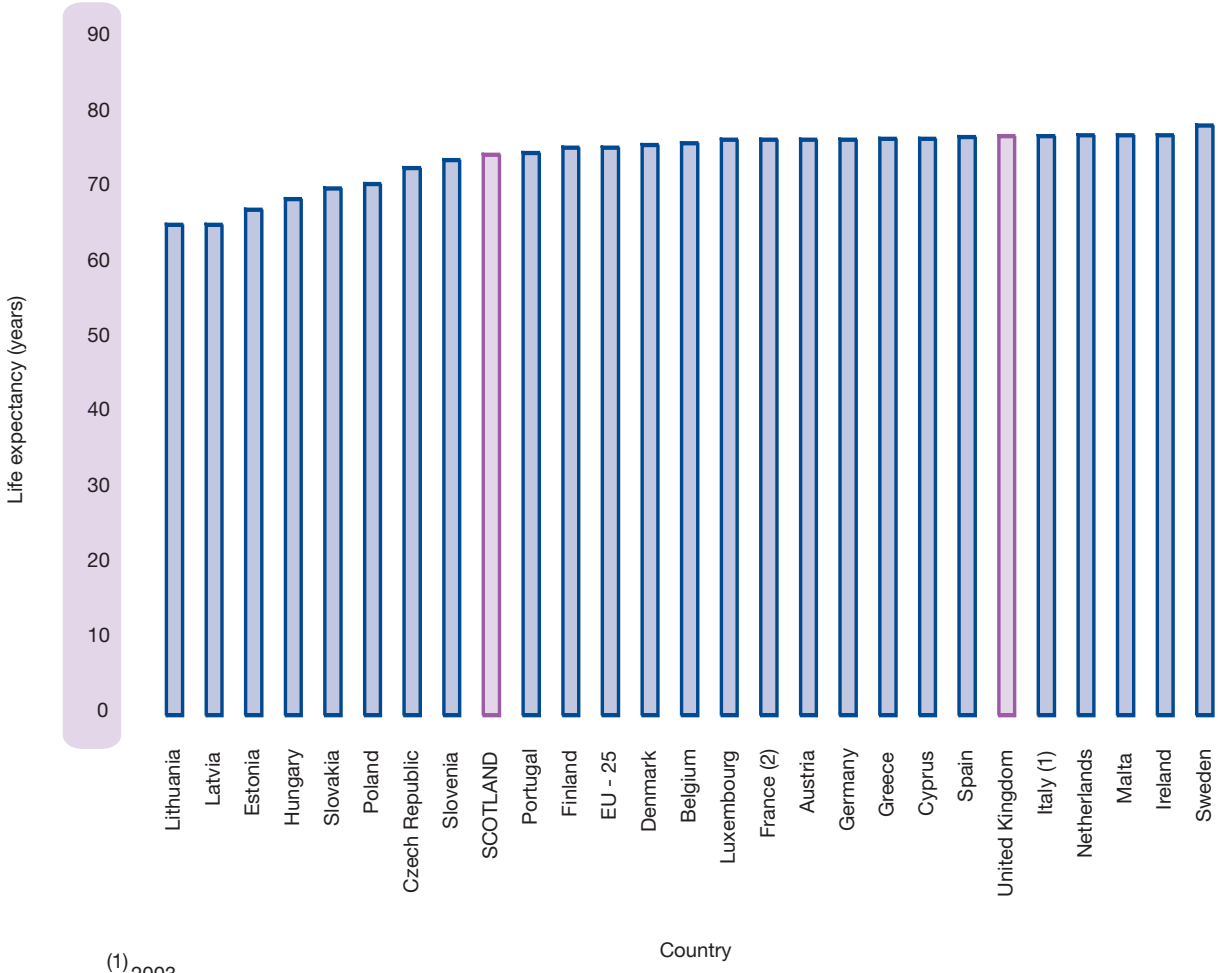
Figure 1.21 Expectation of life at birth[1], Scotland, 1981-2031



[1] Source: Figures to 2006 from Interim Life Tables, ONS.
These are based on 3 years of data. E.g. 2006 figure uses data for 2005-2007.
Figures after 2006 are projected single year life expectancies, ONS.

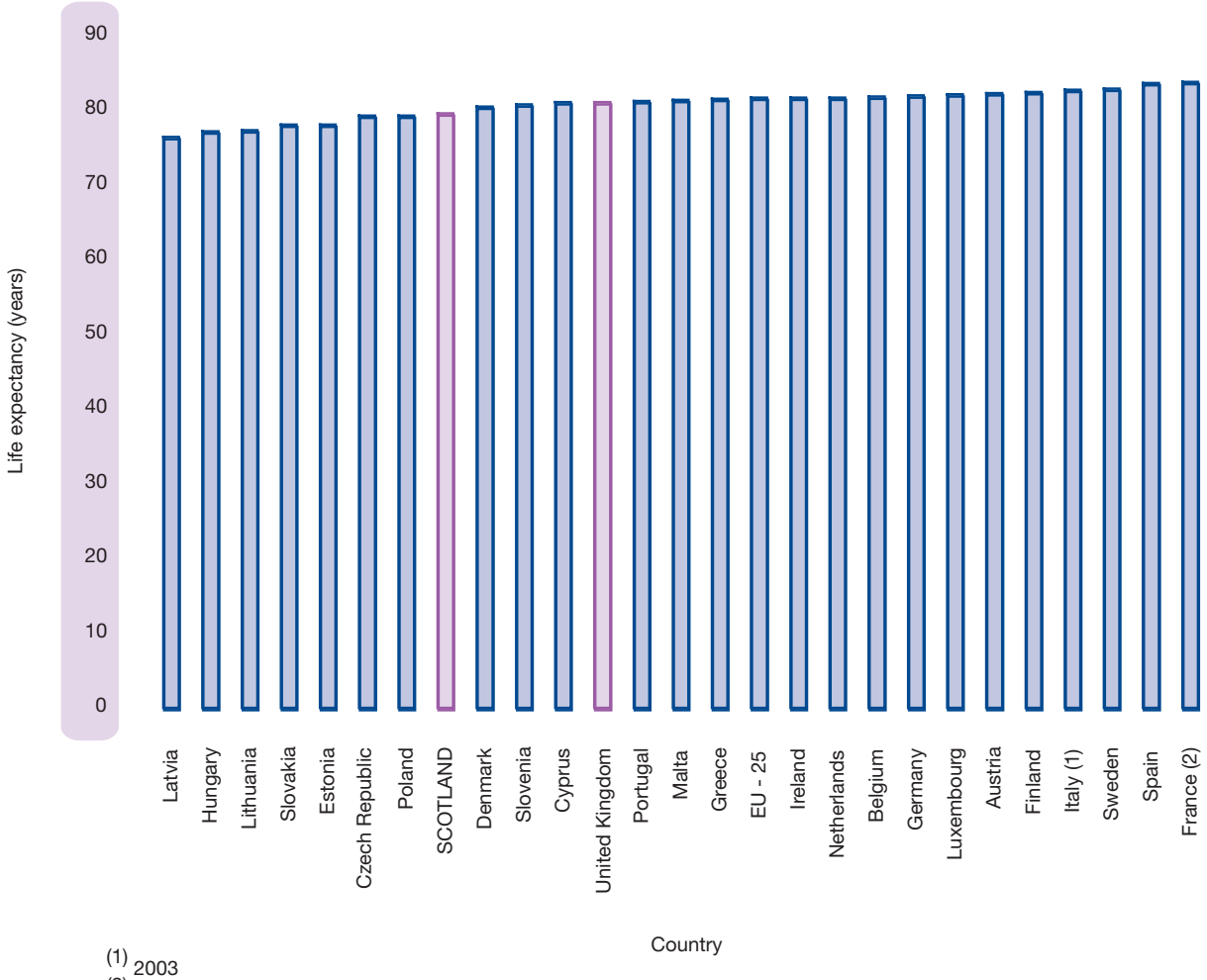
However, **Figures 1.22a** and **1.22b** show that Scottish men and women have among the lowest expectation of life at birth in the European Union. The countries with lower life expectancy than Scotland were most of the Eastern European states which joined the EU on 1 May 2004. For both sexes the expectation of life is about 4 years lower than the countries with the highest expectation of life.

Figure 1.22a Life expectancy at birth, 2005, selected countries, Males



(1) 2003
(2) 2004
Source: EUROSTAT and GROS

Figure 1.22b Life expectancy at birth, 2005, selected countries, Females



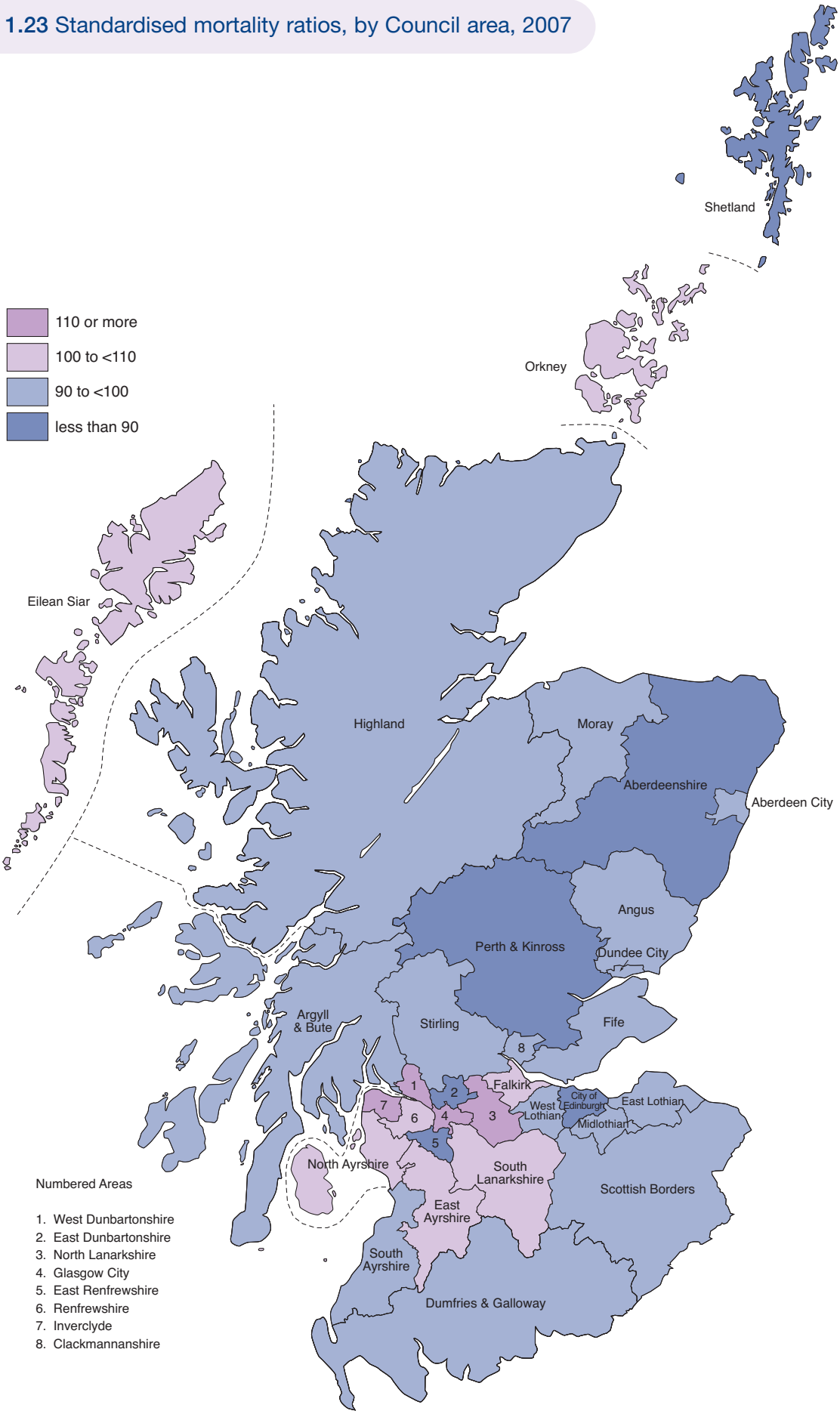
(1) 2003
(2) 2004
Source: EUROSTAT and GROS

Variations in mortality levels within Scotland

Standardised mortality ratios (SMRs), which compare local death rates with death rates in Scotland as a whole, taking account of the different population structure of each area, are presented in **Figure 1.23**. Four of the 32 Scottish Council areas have a standardised mortality ratio that is more than 10 per cent higher than the Scottish average of 100. These are all in West Central Scotland. The worst, Glasgow City, is 26 per cent higher than the Scottish average which itself is about one-sixth higher than the UK average.

At the other end of the scale, 6 of the 32 Council areas have a standardised mortality ratio that is more than 10 per cent lower than the Scottish average. The lowest were East Dunbartonshire and East Renfrewshire which were both 16 per cent below (or better than) the Scottish average.

Figure 1.23 Standardised mortality ratios, by Council area, 2007



Causes of death

In 2007, the two most common causes of death in Scotland were cancer (15,274 deaths, 27 per cent of all deaths) and ischaemic (coronary) heart disease (9,343 deaths, 17 per cent). However, since 1981 the proportion of deaths caused by ischaemic heart disease has fallen from 29 to 17 per cent, whereas the proportion caused by cancer has risen from 22 to 27 per cent. Since 1995 there have been more deaths from cancer than ischaemic heart disease.

Cancer

Death rates, by sex, for the most common causes of death are shown in **Table 1.2**. Over the last 25 years or so, male death rates from lung cancer have fallen by almost a quarter (from 119 per 100,000 population in 1980-82 to 90 in 2007). By contrast, the rates for women, though still considerably lower than those for men, have increased by 73 per cent (from 41 per 100,000 population in 1980-82 to 71 in 2007).

Heart disease and stroke

Table 1.3 shows the number of deaths for males and females for the most common causes of death. In contrast to the rises for cancer, death rates for ischaemic heart disease (coronary heart disease) and cerebrovascular disease (stroke) have shown significant declines. Between 1981 and 2007, rates for males had improved by 48 per cent for ischaemic heart disease and 41 per cent for stroke compared with improvements of 50 and 42 per cent respectively for females.

Table 1.2 Death rates from selected causes, by sex, Scotland, 1980-2007

Males – rates per 100,000 population

Year	Cancer			Ischaemic heart disease	Cerebrovascular disease
	All types	Trachea, bronchus and lung	Prostate		
1980-82	291	119	19	408	139
1990-92	314	111	27	367	119
2000-02	321	93	32	261	101
2007	313	90	32	212	82

Females – rates per 100,000 population

Year	Cancer			Ischaemic heart disease	Cerebrovascular disease
	All types	Trachea, bronchus and lung	Breast		
1980-82	247	41	45	304	210
1990-92	278	57	48	297	191
2000-02	288	64	43	216	162
2007	281	71	40	154	124

Table 1.3 Number of deaths from selected causes, by sex, 1980-2007

Year	Cancer		Ischaemic heart disease		Cerebrovascular disease	
	Males	Females	Males	Females	Males	Females
1980-82[1]	7,269	6,634	10,173	8,150	3,470	5,638
1990-92[1]	7,664	7,324	8,964	7,846	2,913	5,029
2000-02[1]	7,674	7,394	6,342	5,664	2,465	4,250
2007	7,783	7,491	5,260	4,083	2,039	3,294

[1] Average over 3 year period.

Table 1.4 shows the number of deaths in 2007 from cancer, by type, along with heart disease and stroke.

Of the 15,274 deaths from cancers in 2007, trachea, bronchus and lung was the most common type, accounting for over a quarter (27 per cent) of all cancer deaths.

The next most frequent type of cancer death was bowel for men (812 deaths, of which 47 per cent were aged 75 and over) and breast for women (1,062 deaths, of which 42 per cent were aged 75 and over). Death rates for these two causes have been relatively stable in recent years.

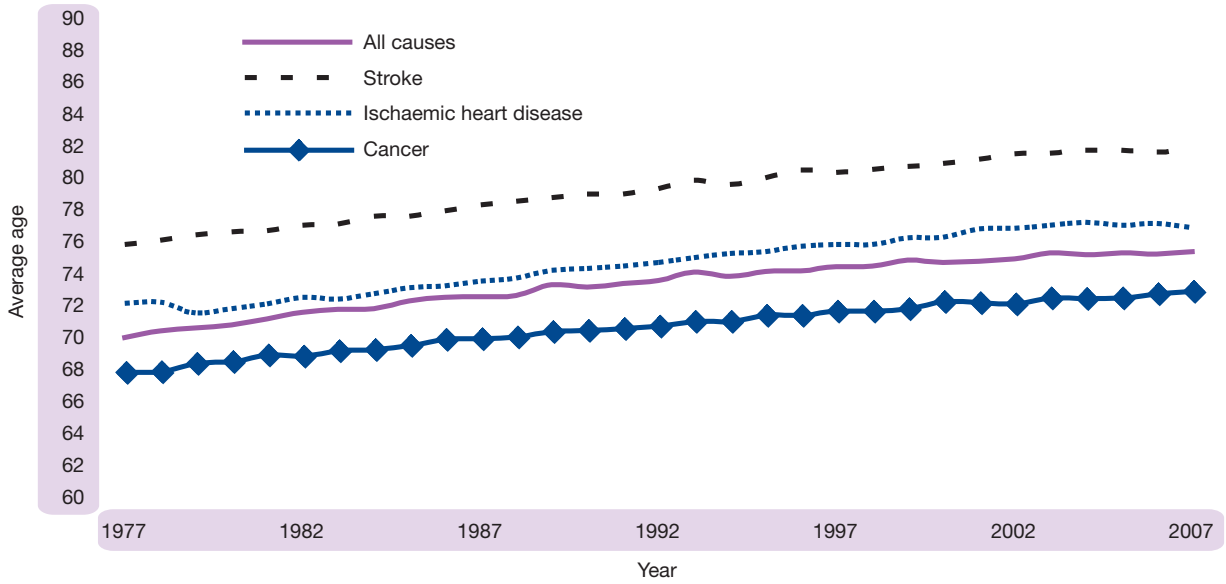
Table 1.4 Deaths from cancer, heart disease and stroke, Scotland, 2007

	Persons	Males	Females
All cancers	**15,274**	**7,783**	**7,491**
Type of cancer			
Trachea, bronchus and lung	4,115	2,239	1,876
Bowel	1,539	812	727
Breast	1,067	5	1,062
Lymphoid, haematopoietic etc	1,044	554	490
Urinary tract	876	541	335
Prostate	793	793	–
Oesophagus	786	485	301
Pancreas	713	338	375
Stomach	506	304	202
Ovary	381	–	381
Liver	378	256	122
Other	3,076	1,456	1,620
Ischaemic heart disease	**9,343**	**5,260**	**4,083**
Cerebrovascular disease	**5,333**	**2,039**	**3,294**

Average age at death

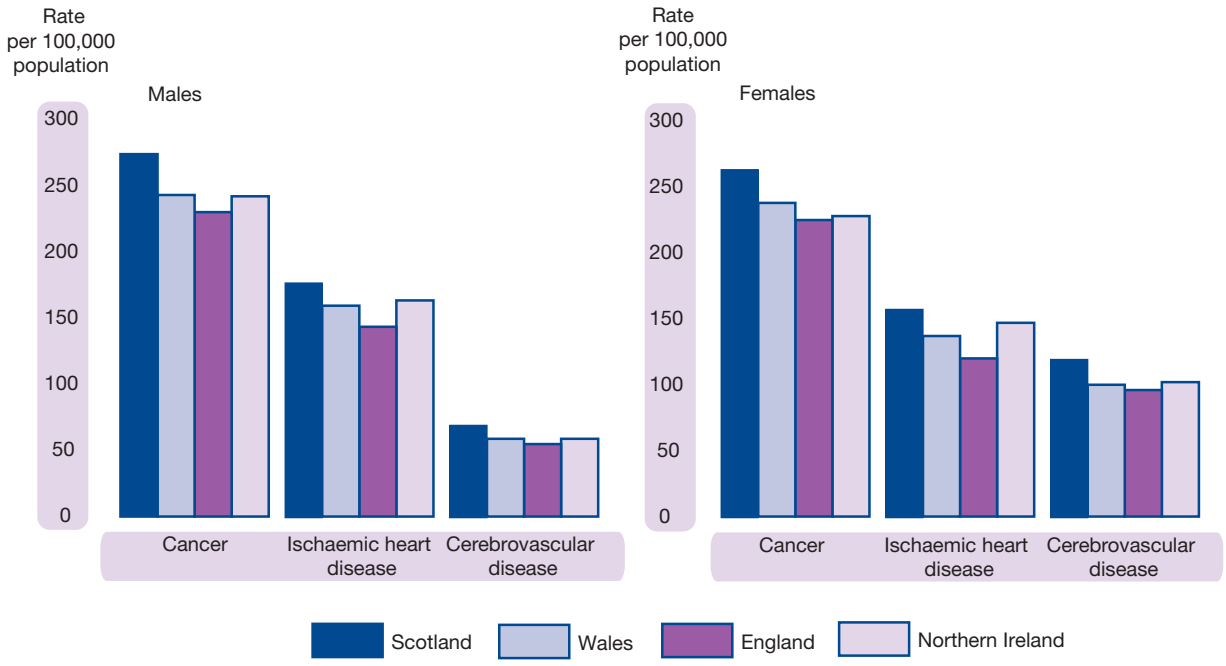
The average age at death has increased steadily over the past thirty years. **Figure 1.24** shows that the average ages at death for cancer, heart disease and stroke have generally increased in line with the average for all deaths.

Figure 1.24 Average age at death, selected causes, Scotland, 1977-2007



Using 2006 data, the latest available, **Figure 1.25** compares the death rates for the constituent countries of the UK for selected causes after adjusting for differences in age structure. The Scottish rates for cancer, ischaemic heart disease, and cerebrovascular disease (stroke) are well above the rates for the other countries of the United Kingdom for both men and women.

Figure 1.25 Age-adjusted mortality rates, by selected cause and sex, 2006



Suicides

In 2007, deaths from intentional self-harm numbered 517 (386 males and 131 females), 25 fewer than in 2006. To allow for any under-recording of suicides, it is conventional to combine deaths classified as 'events of undetermined intent' with those for 'intentional self-harm', as most of the former are believed to be suicides. The total number of deaths classified to these two groups in 2007 was 838 compared with 765 in 2006 and 763 in 2005.

Suicide is the most common cause of death for men aged 15-44. For men the most frequent cause of these deaths was hanging, strangulation and suffocation, whereas for women it was poisoning.

Main causes of death by age and sex

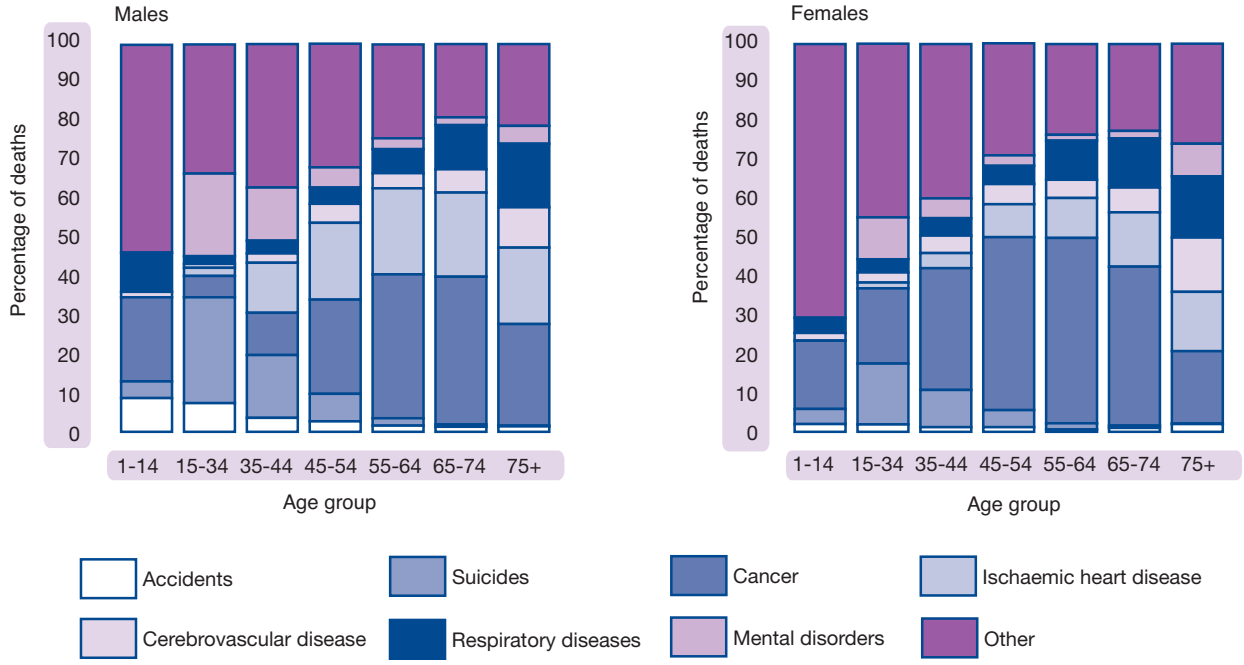
The main causes of death vary in frequency by age and sex (**Figure 1.26**). Cancer was the largest single cause amongst boys aged 1-14, followed by respiratory diseases and accidents. For girls aged 1-14, cancer was the most common cause.

For males aged 15-34, the largest cause was suicide (intentional self-harm plus events of undetermined intent) followed by mental disorders (almost entirely associated with drug and alcohol abuse) and accidents. For females in this age group, cancer was the largest category. Suicides and mental disorders were the next most common causes.

Suicide was also the most frequent cause of deaths for males aged 35-44, mental disorders were second followed by ischaemic heart disease. For women aged 35-44, cancer was the main cause.

For both sexes and all age groups between 45 and 74, cancer was the main cause of death followed by ischaemic heart disease. Cancer was responsible for a higher proportion of deaths in these age groups for men than for women.

Figure 1.26 Deaths, by cause and age group, Scotland, 2007



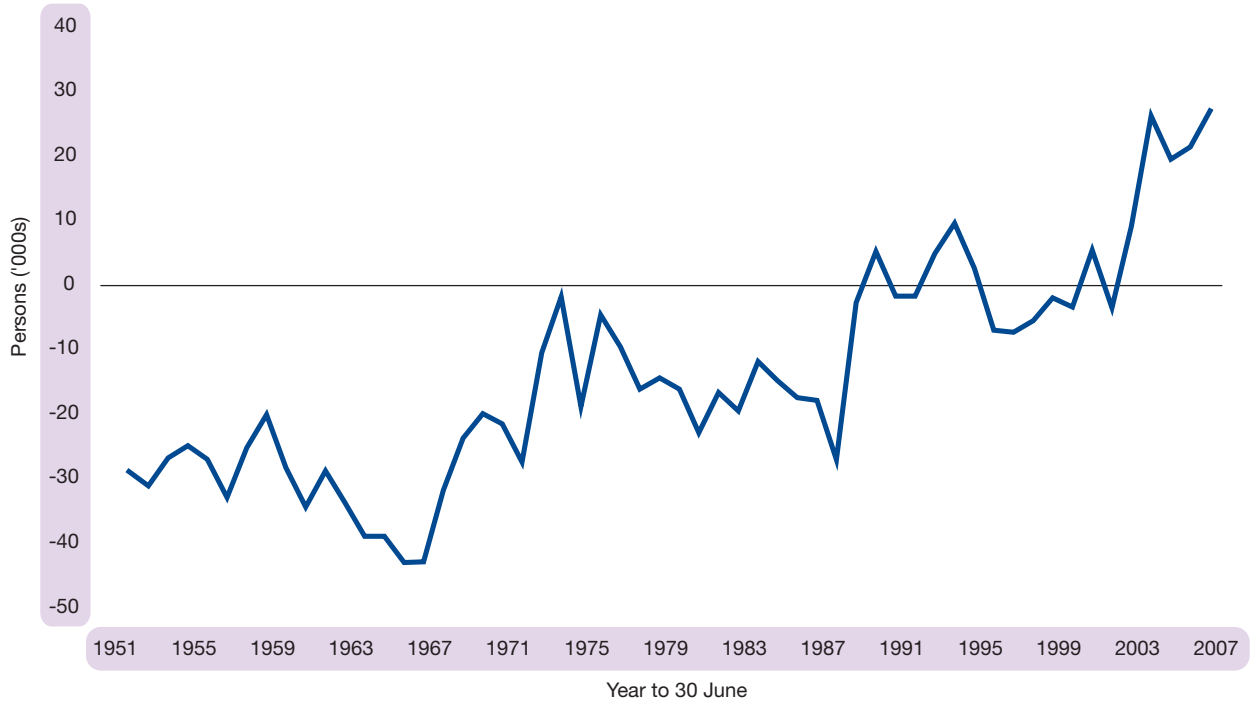
MIGRATION

Unlike some countries, the UK does not have a comprehensive system of recording migrants, particularly those leaving the country, nor any legal requirement to notify change of address. So migration is the most difficult component of population change to measure and predict. Migration and the reasons for migrating are also much more susceptible to short-term changes in social and economic circumstances than births and deaths. The Registrar General's Annual Report for 2003 includes a full analysis of migration data for Scotland. This included analysis of Census 2001 information and gave an overview of data used in the population estimates for Scotland. More detailed information on migration methodology is available on our website http://www.gro-scotland.gov.uk/statistics/migration/information-on-migration.html.

Trends in migration since 1951

Historically, Scotland has been a country of net out-migration, with more people leaving Scotland to live elsewhere than moving to live in Scotland. However, since the 1960s, net out-migration has greatly reduced and in some years during the late 1980s and early 1990s Scotland experienced net migration gains. This has also been the case in the last five years, with net gains of around 9,000 in the year to mid-2003, 26,000 to mid-2004, 19,000 to mid-2005, 21,000 to mid-2006 and 27,000 to mid-2007. This most recent net migration gain is the highest level recorded since current records started in 1952. This can be seen in **Figure 1.27**.

Figure 1.27 Estimated net migration, Scotland, 1951-2007



Source: National Health Service Central Register (NHSCR) patient movements.

Net migration is the difference between much larger flows of migrants into and out of Scotland. The level of net migration can be significantly affected by relatively small changes in these gross flows from year to year, particularly if one flow rises while the other falls. In the last five years, migration into Scotland has typically been about 70,000 to 100,000 whilst migration from Scotland has ranged from around 65,000 to around 75,000.

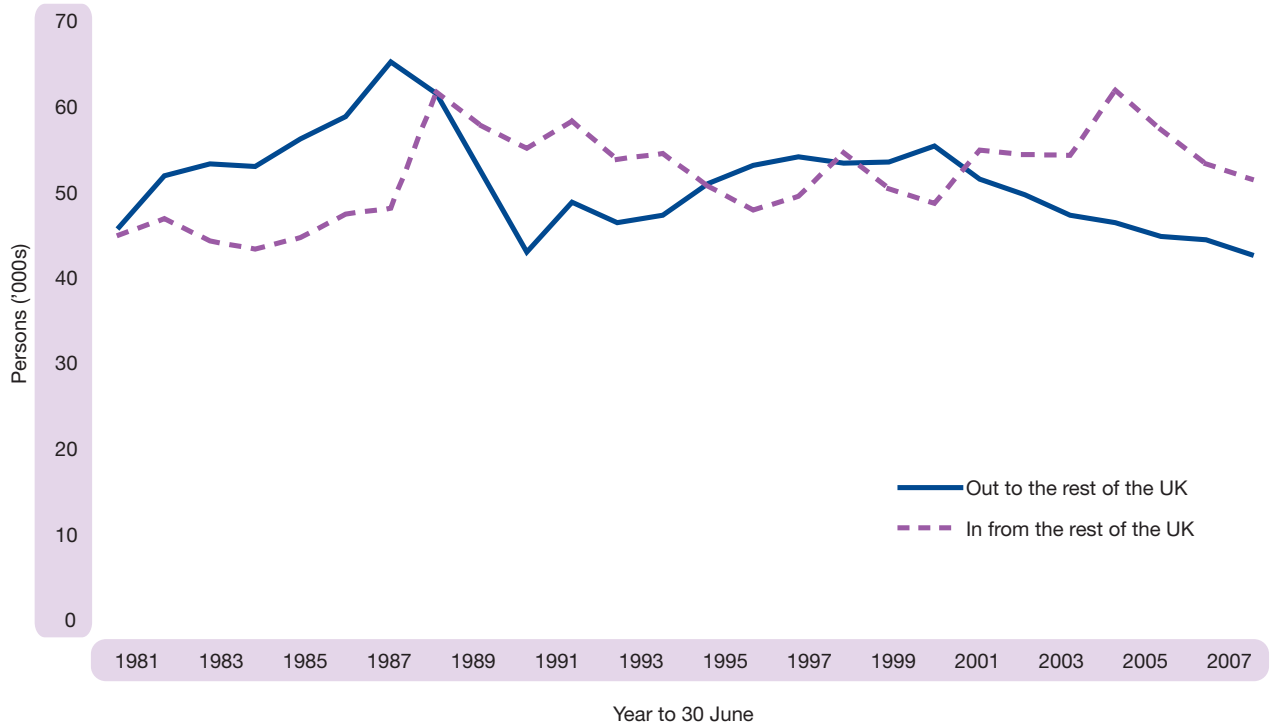
In the year to 30 June 2007, around 51,500 people came to Scotland from England, Wales and Northern Ireland and around 42,700 people left Scotland to go in the opposite direction. The net inflow of around 8,800 is very slightly lower than the previous year's 8,900 net inflow.

During the same period, about 37,800 people came to Scotland from overseas and around 21,000 left Scotland to go overseas, giving a record net migration gain from overseas of around 16,800. This compares to a net inflow of 12,700 in the previous year which was itself a record. Estimating international migration is particularly difficult as the estimate is based primarily on the International Passenger Survey (IPS). This is a sample survey conducted at main airports and ports across the UK, and the sample size for Scotland is very small (around 180 contacts in 2006-07). Internationally, migrants are defined as people who change their country of usual residence for 12 months or more. So short-term seasonal migrant workers, including many from the Eastern European states which joined the EU in 2004, will not be counted in the migration estimates, and hence will not be included in the mid-year population estimates. The Office for National Statistics (ONS) is currently leading UK-wide work into ways of quantifying short-term migrants.

Origins and destinations of UK migrants

Figure 1.28 illustrates the trend in flows of people to and from the rest of the UK since 1981. In-migration peaked in 2004 and has been falling since, whilst out-migration has been falling since 1999.

Figure 1.28 Movements to/from the rest of the UK, 1981 to 2007



Source: National Health Service Central Register (NHSCR) patient movements.

Table 1.5 shows that 93 per cent of people coming to Scotland from the rest of the UK came from England. Sixteen per cent came from the South East, 15 per cent from the North West, 13 per cent from London, 10 per cent from Yorkshire and the Humber, 9 per cent from the East, 8 per cent from both the North East and South West and 7 per cent from both the East Midlands and the West Midlands. The proportions of people going to the areas of England from Scotland were similar. For example, about 15 per cent went to the North West and another 15 per cent went to London.

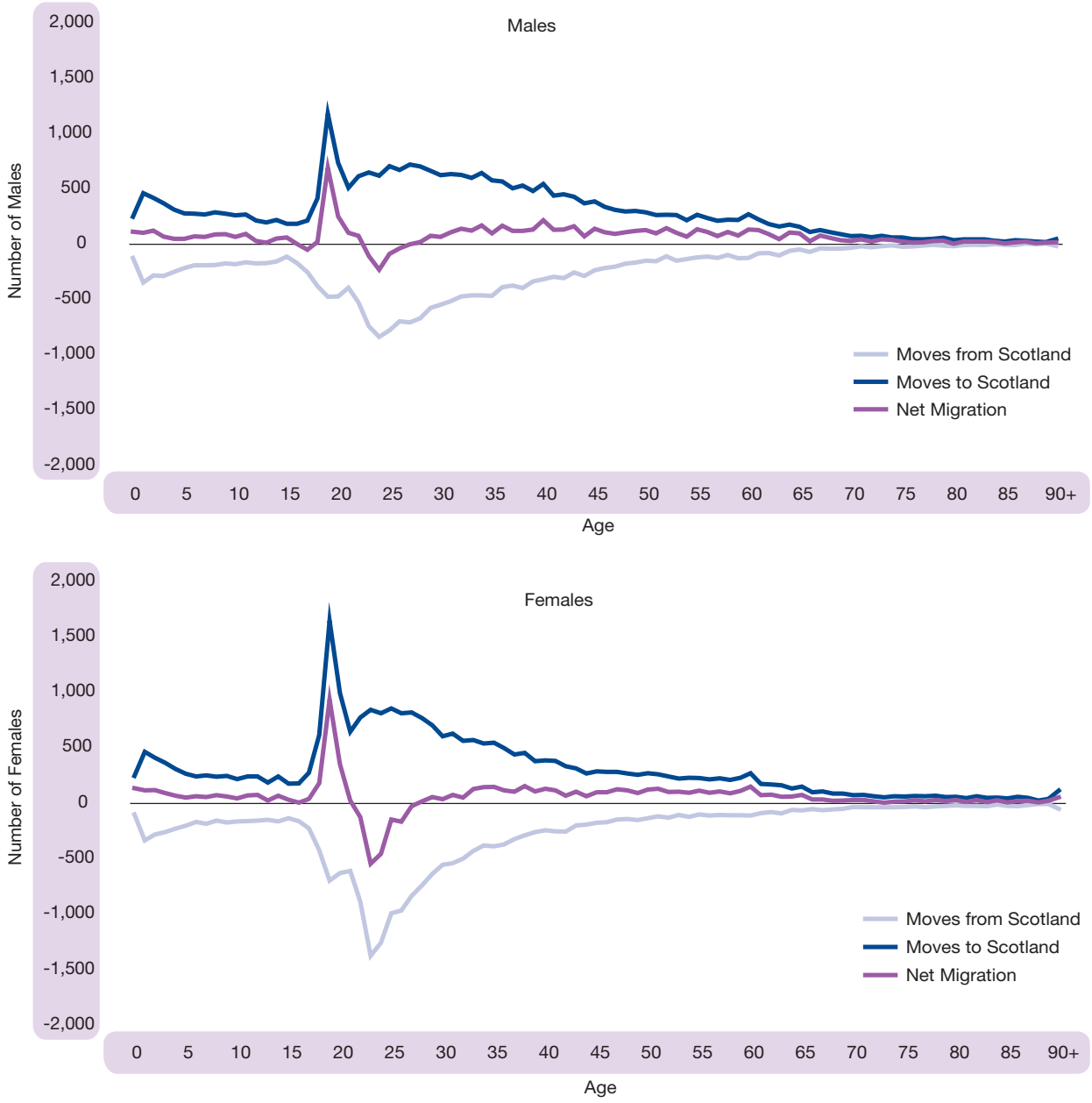
Table 1.5 Movements between Scotland and the rest of the UK by Country and Region, mid-2006 to mid-2007

	Rest of UK inflow 2006-07	% of inflow	Rest of UK outflow 2006-07	% of outflow	Net
England	47,970	93	38,467	90	9,503
North East	4,270	8	3,497	8	773
North West	7,808	15	6,281	15	1,527
Yorkshire and the Humber	5,405	10	3,921	9	1,484
East Midlands	3,529	7	2,839	7	690
West Midlands	3,371	7	2,508	6	863
East	4,686	9	3,480	8	1,206
London	6,866	13	6,226	15	640
South East	8,001	16	6,046	14	1,955
South West	4,034	8	3,669	9	365
Wales	1,772	3	1,588	4	184
Northern Ireland	1,804	3	2,642	6	-838
Total	**51,546**	**100**	**42,697**	**100**	**8,849**

Age and sex of migrants

Figure 1.29 illustrates the age/sex distribution for men and women moving between Scotland and the rest of the UK between mid-2006 and mid-2007. The peak ages for both males and females migrating into Scotland are 19 and 20. This creates a marked net migration gain at these ages. The peak ages for migrating out of Scotland on the other hand are 23 and 24 and this results in a net migration loss at these ages. These patterns are consistent with an influx of students from outside Scotland starting higher education, followed by a further move after graduation.

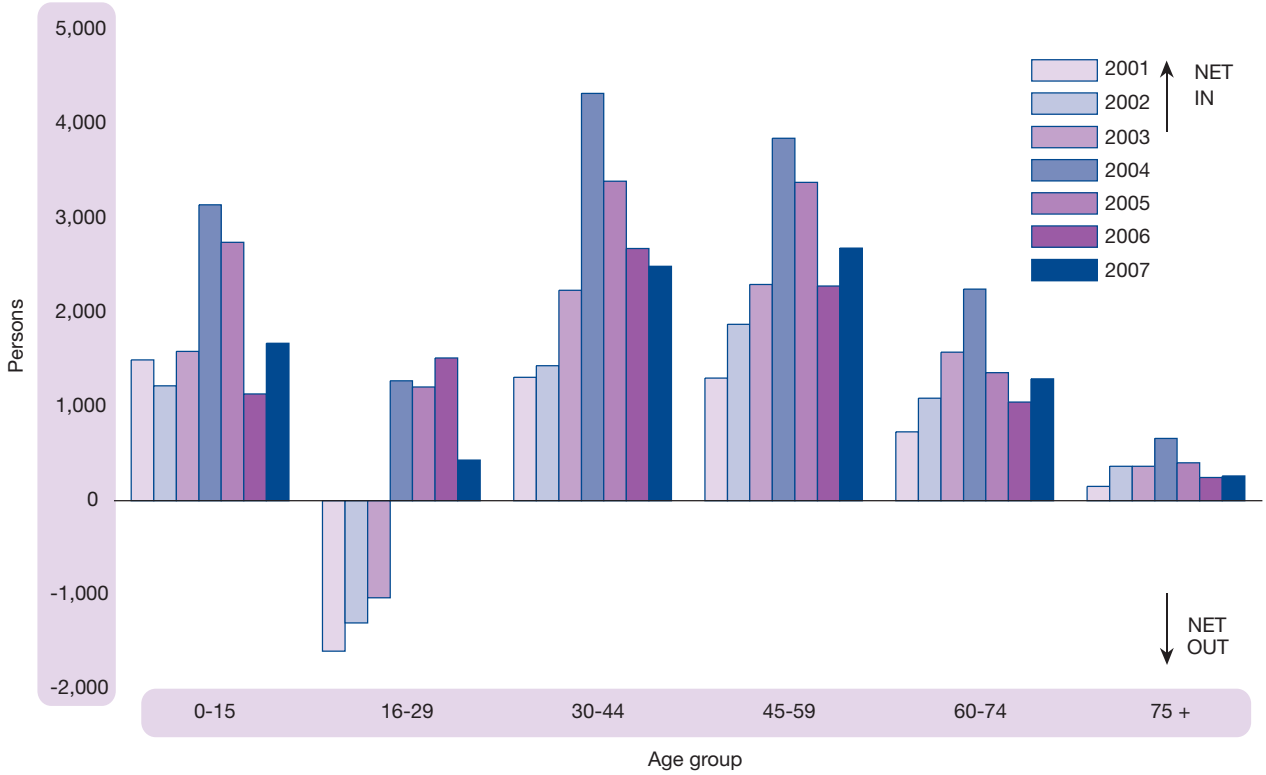
Figure 1.29 Movements between Scotland and the rest of the UK, by age, mid-2006 to mid-2007



There also tend to be smaller peaks for moves of the very young, under the age of 5, as their parents move home before their children have started school. Later in life, there is no significant "retirement migration" in either direction. The pattern of migration is very similar for men and women, although more women than men appear to migrate in their early 20s. However, this may reflect different patterns of re-registering with an NHS doctor after a move (the main data source for migration estimates) rather than different patterns of migration.

The age and sex of migrants remain relatively constant from year to year. **Figure 1.30** shows that, in the year to mid-2007, Scotland gained people of all age groups from the rest of the UK. Movement of all age groups into Scotland has increased since 2001 although fewer people entered, again in all age groups, than in the years to mid-2004 and mid-2005.

Figure 1.30 Net movements between Scotland and the rest of the UK by age group, 2001-2007



Source: National Health Service Central Register (NHSCR) patient movements.

Table 1.6 shows movements to/from the UK and overseas between mid-2006 and mid-2007 by age group. Migrants tend to be much younger than the general population: 46 per cent of in-migrants from the rest of the UK and 68 per cent of those from overseas are aged 16-34, compared with 24 per cent of the resident population. No significant retirement migration is evident, as only 5 per cent of people coming to Scotland from the rest of the UK were aged 65 and over, as were an estimated 1 per cent of overseas migrants.

Table 1.6 Rest of UK/Overseas moves by age group: 2006-2007

Numbers

Movements between Scotland and the rest of the UK[1]

	0-15	16-24	25-34	35-44	45-54	55-64	65-74	75-84	85+	All ages
IN	7,962	11,230	12,597	8,042	5,115	3,885	1,556	796	363	51,546
OUT	6,289	10,150	12,472	6,321	3,292	2,236	1,043	606	288	42,697
NET	1,673	1,080	125	1,721	1,823	1,649	513	190	75	8,849

Movements between Scotland and Overseas (including asylum seekers, excluding unmeasured migration adjustment)[2]

	0-15	16-24	25-34	35-44	45-54	55-64	65-74	75-84	85+	All ages
IN	5,681	12,456	13,155	3,709	1,661	721	289	100	28	37,800
OUT	3,034	4,963	6,349	3,165	1,572	1,032	483	268	134	21,000
NET	2,647	7,493	6,806	544	89	-311	-194	-168	-106	16,800

Total net migration (including asylum seekers, movements to and from the armed forces and rounding adjustments)[3]

	0-15	16-24	25-34	35-44	45-54	55-64	65-74	75-84	85+	All ages
NET	4,541	8,444	7,310	2,763	2,046	1,389	325	24	-31	26,811

Percentages

Movements between Scotland and the rest of the UK[1]

	0-15	16-24	25-34	35-44	45-54	55-64	65-74	75-84	85+	All ages
IN	15	22	24	16	10	8	3	2	1	100
OUT	15	24	29	15	8	5	2	1	1	100

Movements between Scotland and Overseas (including asylum seekers and movements to and from armed forces)[2]

	0-15	16-24	25-34	35-44	45-54	55-64	65-74	75-84	85+	All ages
IN	15	33	35	10	4	2	1	0	0	100
OUT	14	24	30	15	7	5	2	1	1	100

1 National Health Service Central Register (NHSCR) patient movements mid-2006 to mid-2007.

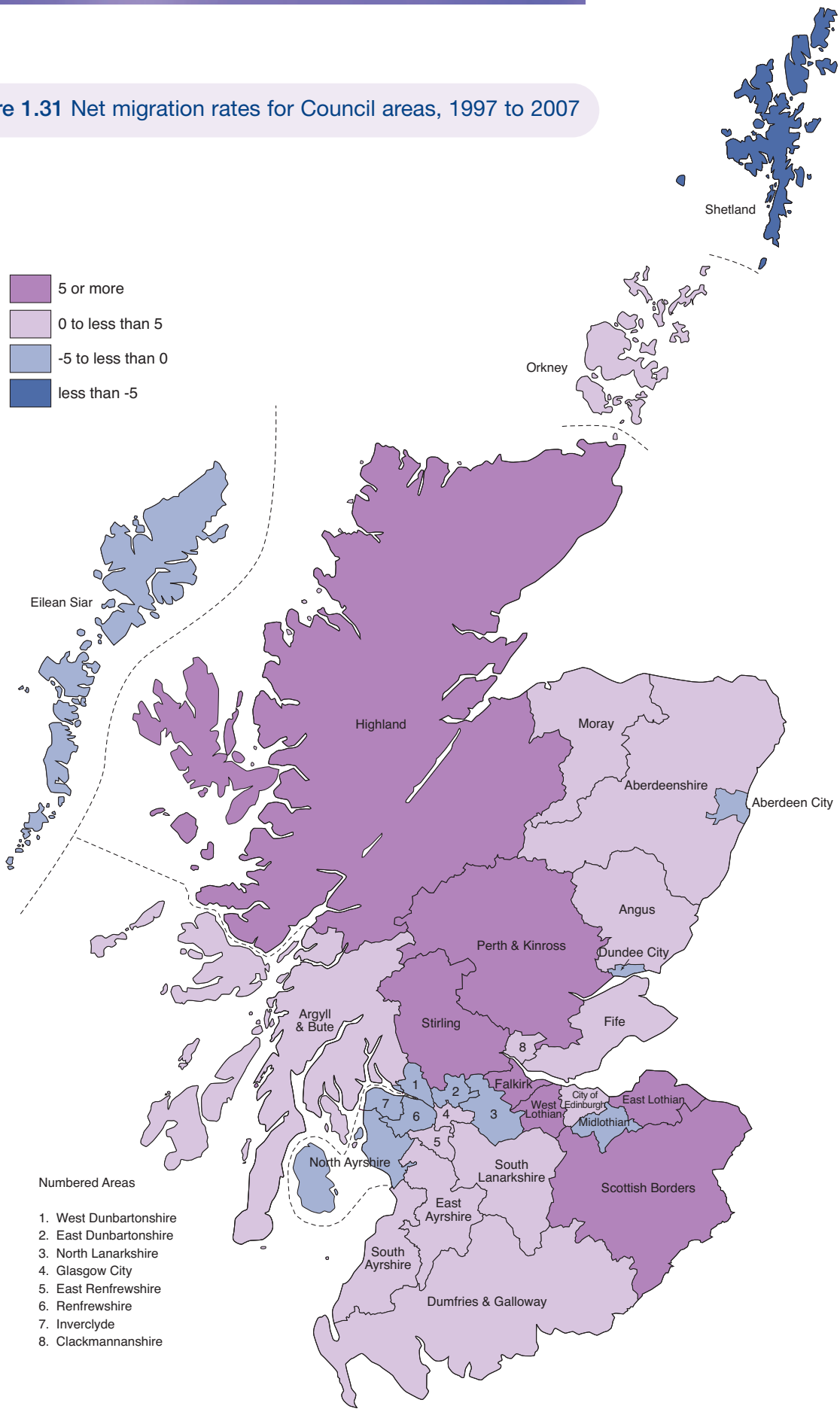
2 Totals are based primarily on International Passenger Survey (IPS) data. However, the sample size in Scotland is too small to give an age breakdown so an age distribution is assumed using NHSCR data.

3 Note that the movements between Scotland and the rest of the UK and overseas will not sum to the total net migration as they exclude movements to and from the armed forces and rounding adjustments.

Migration and the distribution of people in Scotland

In many parts of Scotland, migration is the most important component of population change. Net migration rates (here, the amount of net migration between 1997 and 2007 as a proportion of the 1997 population) are a useful indicator when comparing migration between areas of different sizes. Information on net rates for Council areas is shown in **Figure 1.31**.

Figure 1.31 Net migration rates for Council areas, 1997 to 2007



The patterns of migration over the period 1997 to 2007 indicate that the highest net out-migration rates were in Shetland Islands, Dundee City and East Dunbartonshire. The highest net in-migration rates were in Perth & Kinross, East Lothian and Scottish Borders.

MARRIAGES

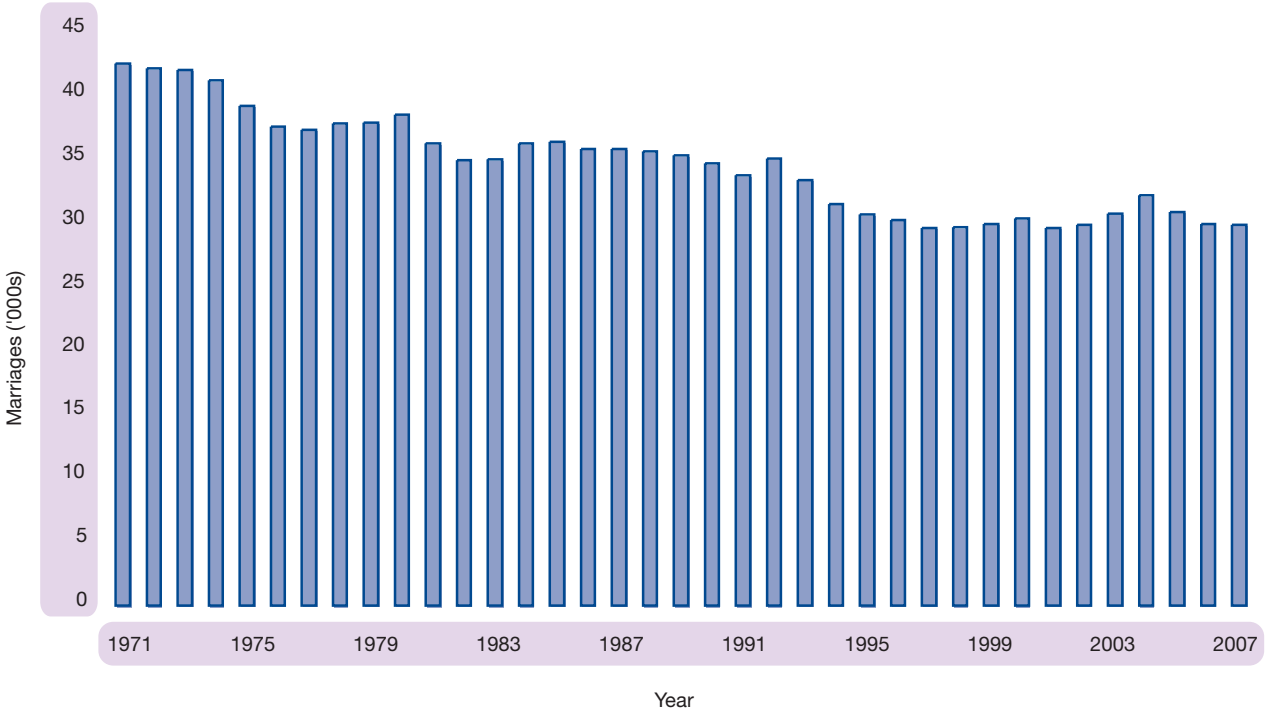
Numbers

There were 29,866 marriages in Scotland in 2007, 30 (0.1 per cent) fewer than in 2006. **Figure 1.32** shows that, following a decline from over 40,000 marriages a year in the early 1970s, the annual total has levelled out at around 30,000. The highest total recorded in recent years was 32,154 in 2004.

The information in this section covers all marriages registered in Scotland, regardless of the usual residence of the parties involved. In 2007, there were 7,959 marriages (27 per cent) where neither the bride nor groom was resident in Scotland. This represents a slight fall from 8,079 in 2006. Gretna continues to be a popular venue for marriages, though the 4,452 registered in 2007 was a fifth down on the record total of 5,555 in 2004. In 2007, 86 per cent (3,812) of the marriages at Gretna did not involve a Scots resident.

Of course, many couples who are resident in Scotland go abroad to be married. These marriages are not included, and only some come to the attention of the Registrar General through notification to British consular authorities.

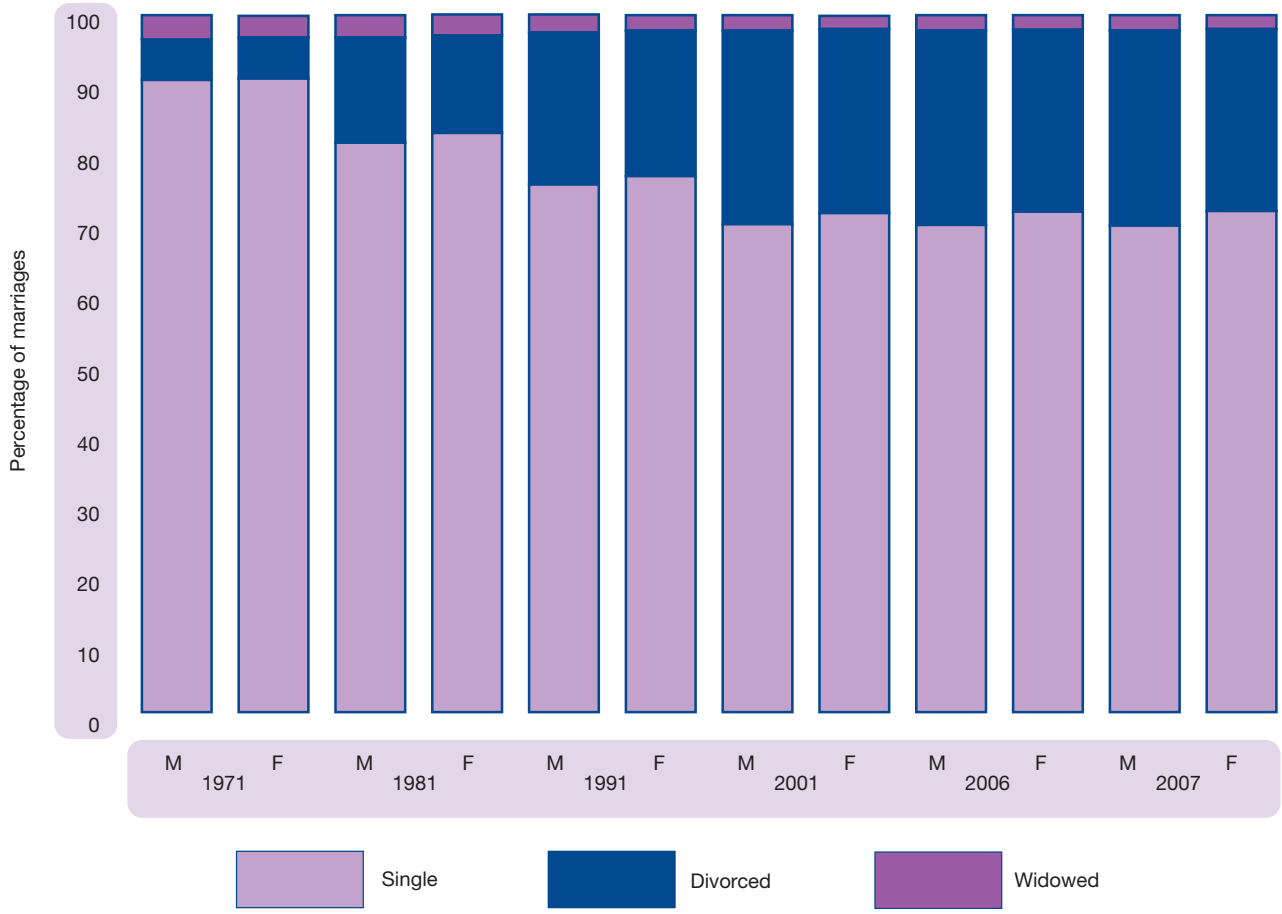
Figure 1.32 Marriages, Scotland, 1971-2007



Marital status at marriage

Figure 1.33 shows the percentage of marriages by marital status at the time of marriage between 1971 and 2007. The percentage of people marrying who had been divorced rose from just under 6 per cent in 1971, to over a quarter in 2007 (28 per cent for males and 26 per cent for females). The majority of this shift reflects a reduction in the proportion of marriages where one of the partners had never been married. However, the proportion of those marrying who were widowed has also declined slightly – in 2007, the proportion was just over 2 per cent whereas it was just over 3 per cent in 1971.

Figure 1.33 Marriages, by marital status and sex of persons marrying, 1971-2007



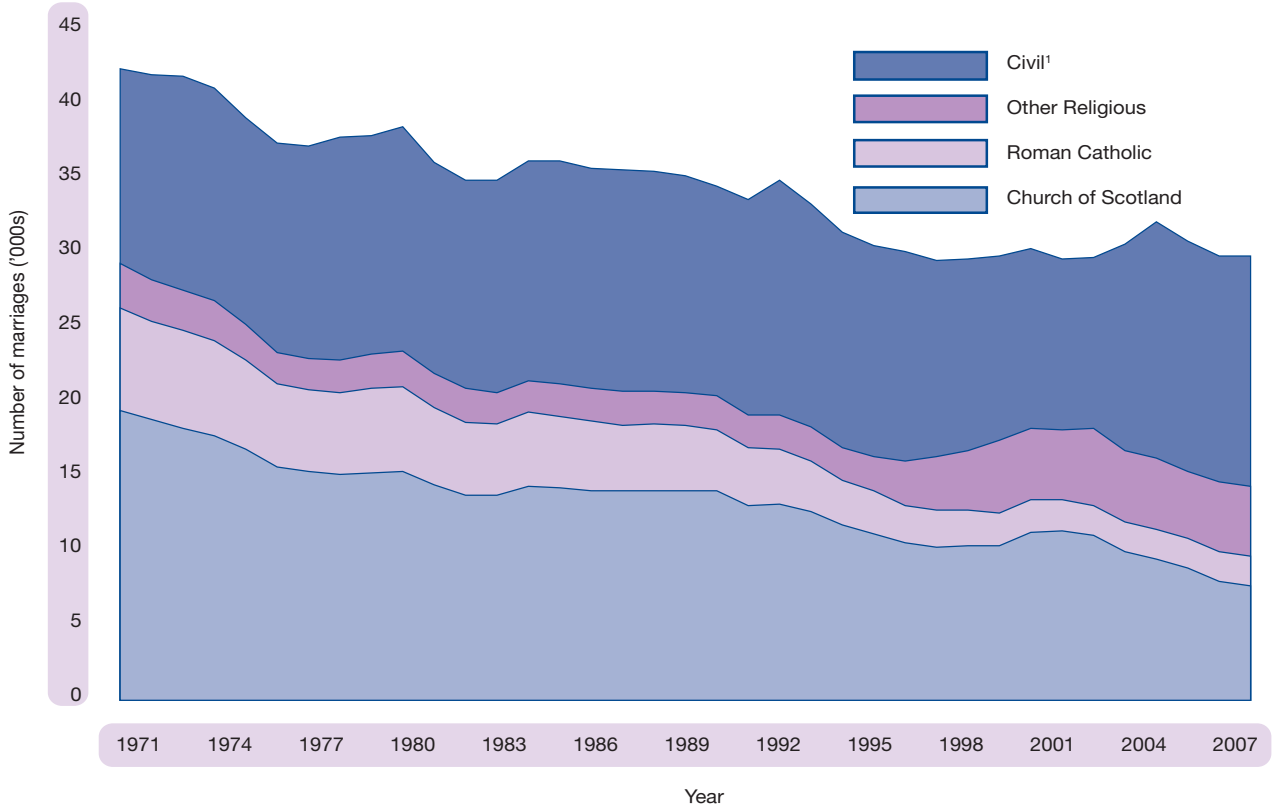
Age at marriage

The average age at marriage continues to rise for both males and females. For first marriages, the average age of grooms has risen from 29.5 in 1997 to 32.2 in 2007; the comparable figures for brides are 27.3 in 1997 and 30.3 in 2007.

Marriages by type of ceremony

Civil marriages accounted for just over half (52 per cent) of all marriages in 2007 compared to just under one-third (31 per cent) in 1971 (**Figure 1.34**). The trend mainly reflects a decline in the number of religious ceremonies during the 1970s, 1980s and early 1990s. The small increase in religious marriages observed during the period 1997-2002 was largely associated with the increase of 'tourism' marriages, of which a significant proportion were carried out at Gretna.

Figure 1.34 Marriages, by type of ceremony, 1971-2007



1 Includes very small numbers of 'irregular' marriages established by Decree of Declaration of the Court of Session.

Until 2002, civil marriages could only be held in registration offices. The Marriage (Scotland) Act 2002 allowed registrars to conduct ceremonies in other approved places, from June 2002. Nearly 800 venues have now been approved, including castles, hotels, clubs and a small number of outdoor venues in gardens or the countryside.

During 2007, 7,987 civil ceremonies (27 per cent of all marriages and 52 per cent of civil marriages) were conducted at these 'approved places'. This represented an increase of 9 per cent on 2006 and an increase of 131 per cent on 2003, the first full year of the new arrangements. There has been a corresponding decrease in the number of religious marriages, from 16,890 in 2003 to 14,381 in 2007.

Almost two-thirds (63 per cent) of the religious marriages were celebrated in places of worship while just under half (48 per cent) of civil marriages took place in registration offices. Hotels were the venue for about 2,300 religious and 3,400 civil ceremonies, while approximately 900 religious and 600 civil marriages took place in castles and other historic buildings and 27 religious and 19 civil marriages were held on ships and barges.

DIVORCES

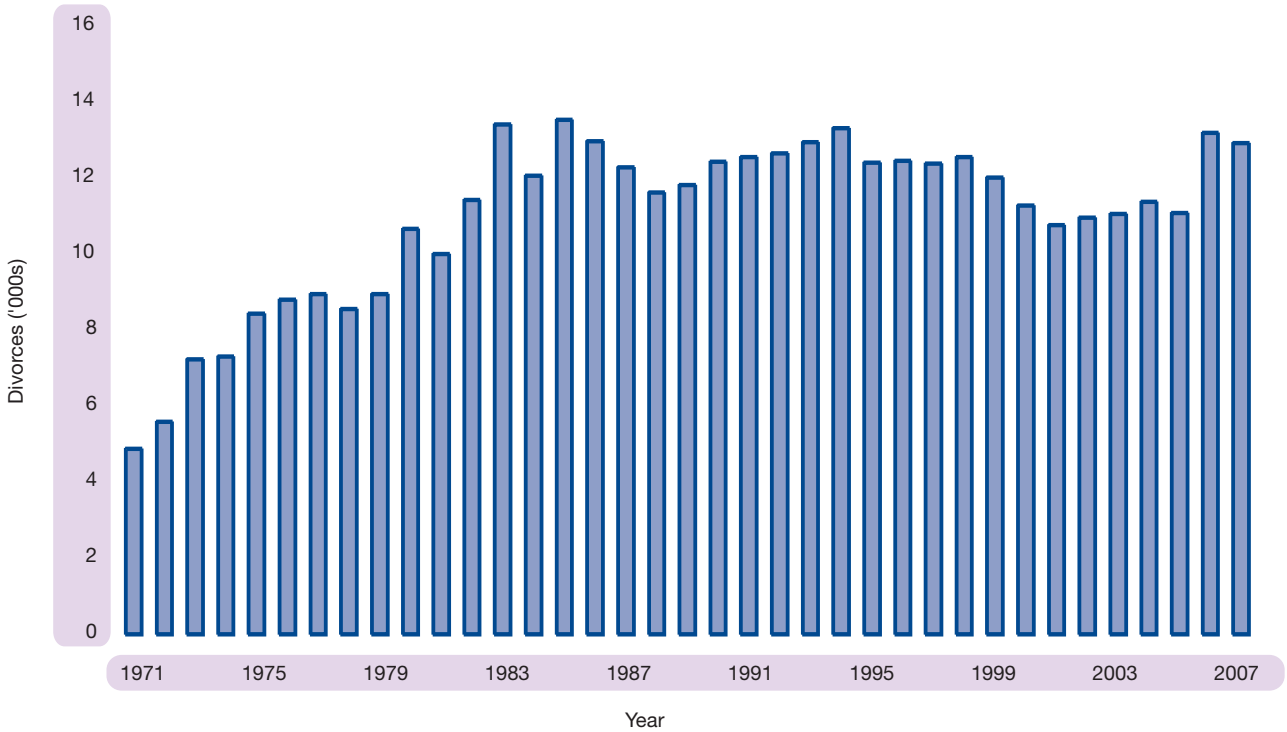
Numbers

The number of divorces in 2007 was 12,773, 241 (2 per cent) fewer than in 2006. Changes to divorce legislation were introduced by the Family Law (Scotland) Act 2006. The changes, which came into effect on 4 May 2006, reduced separation periods for divorce with consent to one year (previously two years) and without consent to two years (previously five years).

Figure 1.35 shows the number of divorces between 1971 and 2007. There was a marked increase in the number of divorces up to a peak of over 13,373 in 1985. Recent years have seen a slight fall from the levels recorded in the late 1980s and 1990s perhaps because more couples are cohabiting without getting married, and divorce proceedings are not necessary to sever such relationships. The recent peak in 2006 (13,014 divorces), the highest figure since 1985, was expected as a result of the change in legislation, because some divorces which were finalised in 2006 would otherwise have taken place in later years. It is likely that the impact of this change will reduce over the next few years.

The information in this report covers divorces granted in Scotland, regardless of where the marriage took place.

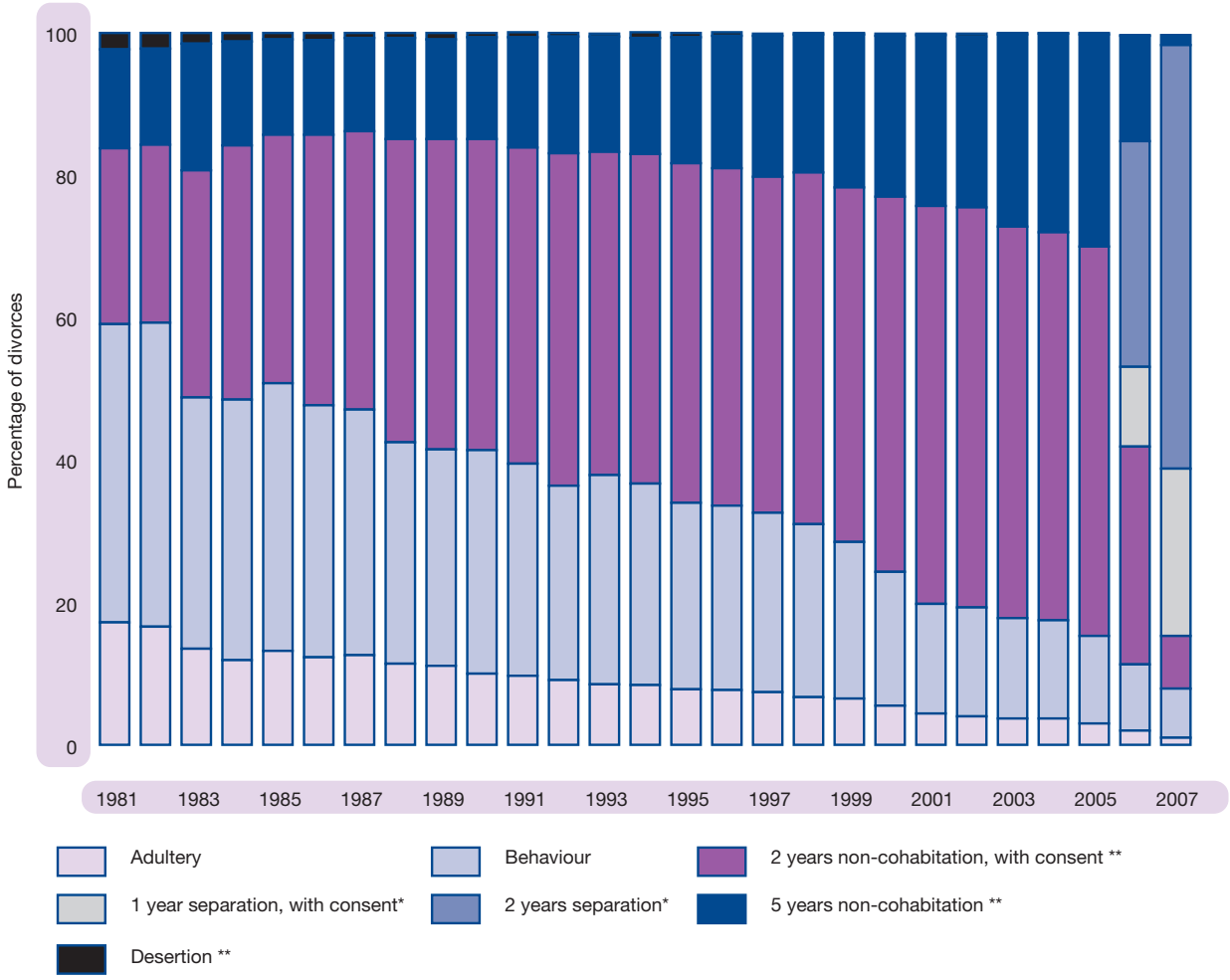
Figure 1.35 Divorces, Scotland, 1971-2007



Grounds for divorce

Figure 1.36 shows the trends in grounds for divorce between 1981 and 2007. For 2006 and 2007, it includes the new categories introduced by the Family Law (Scotland) Act 2006. Non-cohabitation/separation was the most frequent reason for divorce, accounting for 92 per cent of all divorces in 2007, more than double the 39 per cent attributed to the non-cohabitation categories in 1981. Behaviour as the stated reason for divorce fell from 42 per cent to 7 per cent; and adultery as the stated reason for divorce fell from 17 per cent to 1 per cent.

Figure 1.36 Number of divorces, by grounds for divorce, Scotland, 1981-2007



* New categories introduced with effect from 4 May 2006 by the Family Law (Scotland) Act, 2006
** Categories not used for divorce applications made after 4 May 2006

Divorces by marital status

Of those divorcing in 2007, 17 per cent of both men and women had divorced previously. This compares with 8 per cent for men and 7 per cent for women in 1981. This is consistent with the increase in the proportion of all marriages where one or both participants was divorced previously (now 2 in 5 marriages compared with 1 in 4 twenty years ago).

Duration of marriages that ended in divorce

In 2007 and 1997 the median duration of marriage ending in divorce was 15 years. This was much lower in 1981 when the average was 9 years.

Divorce by age at marriage

In 2007, 15 per cent of all divorces involved couples where at least one of the partners was aged 20 or under when they married. This is a significant fall from 60 per cent in 1981, but not unexpected given that the proportion of marriages where at least one of the partners was aged 20 or under has fallen from 36 per cent in 1981 to 1 per cent in 2007.

CIVIL PARTNERSHIPS

The Civil Partnership Act 2004, which applies throughout the UK, came into force on 5 December 2005, allowing same-sex couples to register their partnership. In Scotland, the first civil partnership was registered on 20 December 2005 and by the end of that year a total of 84 had been registered – 53 male couples and 31 female couples. During 2006, the first full year of operation, a further 1,047 partnerships were registered, 580 male couples and 467 female couples. In 2007, 688 partnerships were registered – 339 male couples and 349 female couples. This decrease was expected, because many long-standing relationships will have been registered as civil partnerships in the first full year of registration in 2006.

ADOPTIONS

The Registrar General recorded 441 adoptions during 2007 – 23 more than in 2006, and just over half the number recorded in the early 1990s, or around a quarter of the number recorded in the 1970s.

Thirty per cent of the children adopted in 2007 were adopted by a step-parent and 66 per cent were adopted by non-relatives of the child. Only 11 per cent of children adopted in 2007 were aged under 2, nearly all being adopted by non-relatives. By contrast, only 14 per cent of the 93 adoptions of children aged 10 or over were by non-relatives.

GENDER RECOGNITION

The Gender Recognition Act 2004 came into force on 4 April 2005. The Act applies throughout the UK and enables transsexual people to apply to the Gender Recognition Panel to obtain a Gender Recognition Certificate. Successful applicants are considered from the date of issue of the Certificate to be legally of their acquired gender. A holder of a Gender Recognition Certificate is able to enjoy all the rights appropriate to a person of his or her acquired gender, including obtaining a new birth certificate showing his or her recognised legal gender.

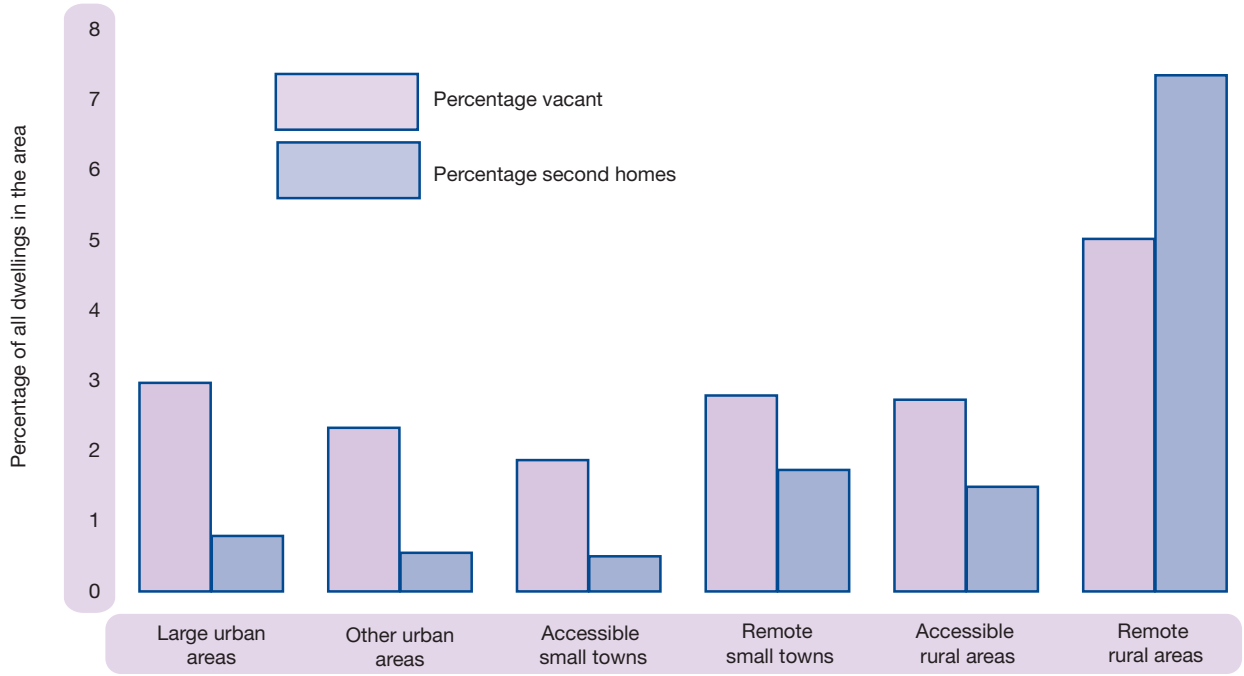
The Registrar General for Scotland has set up a Gender Recognition Register in which the birth of a transsexual person whose acquired gender has been legally recognised is registered showing any new name(s) and the acquired gender. This enables the transsexual person to apply to the Registrar General for Scotland for a new birth certificate showing the new name(s) and the acquired gender. In 2007, there were 30 entries in the Gender Recognition Register, 13 fewer than in 2006. The Gender Recognition Register is not open to public scrutiny.

HOUSEHOLDS and HOUSING

Vacant dwellings and second homes

Across Scotland as a whole in mid-2007, 2.8 per cent of dwellings were vacant and 1.4 per cent were second homes, though there is wide variation across the country. **Figure 1.37** shows the variation in the proportions of vacant dwellings and second homes between urban and rural areas. Remote rural areas have the lowest percentage of dwellings which are occupied (88 per cent), with relatively high percentages of vacant dwellings (5 per cent of all dwellings in these areas) and second homes (7 per cent).

Figure 1.37 Vacant dwellings and second homes, by urban-rural area, 2007

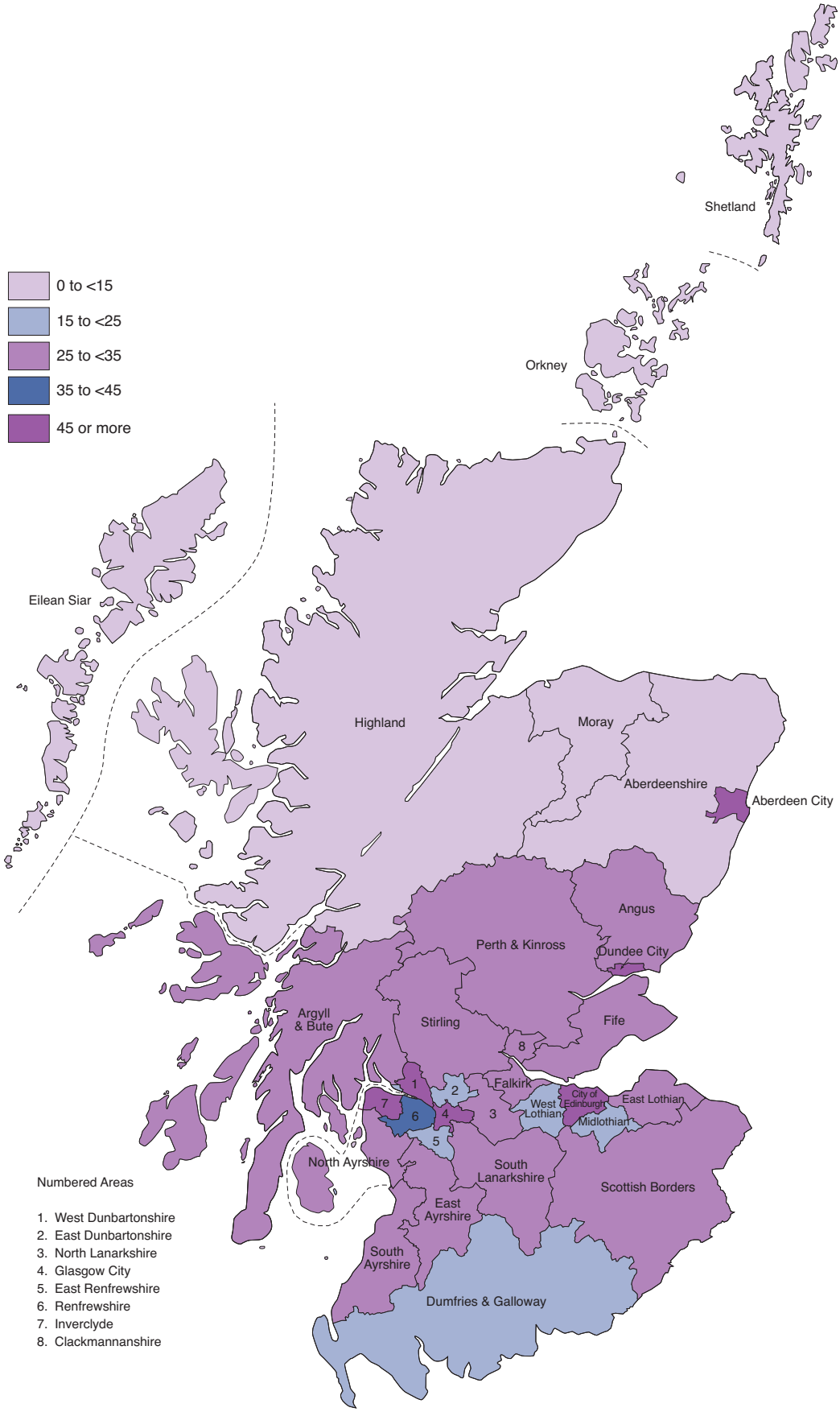


Dwelling type

There are higher proportions of flats in urban areas, and in more deprived areas. In contrast, there are higher proportions of detached houses in rural areas, and in less deprived areas. The three island authorities have the highest percentages of detached dwellings (over 58 per cent of all dwellings in these areas, compared to 20 per cent for Scotland as a whole).

Figure 1.38 shows the percentage of dwellings in each local authority area which are flats. Urban areas, and areas closer to the 'Central Belt' of Scotland, tend to have higher proportions of flats.

Figure 1.38 Percentage of dwellings which are flats in each local authority area, 2007



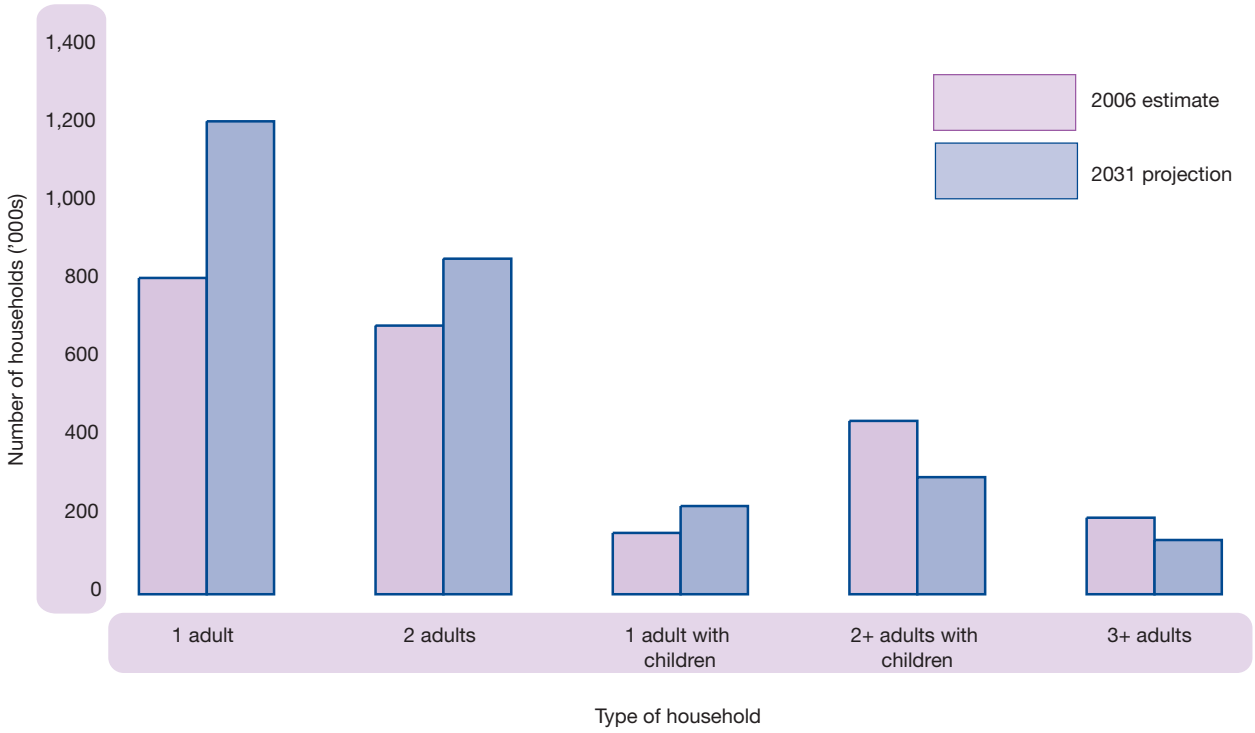
In mid-2007, there were 2.3 million households in Scotland, which is 22,400 more than in mid-2006 and over 270,000 more than in 1991. Between 2006 and 2031, the number of households in Scotland is projected to increase to 2.7 million, which is an average of 17,600 additional households per year. Most of the increase is the result of an ageing population and more people living alone or in smaller households, rather than an increase in the overall population. Looking to the future, there is a projected increase in the number of people in older age groups, with a fall in the number of younger people. This has an impact on household structure, as elderly people are more likely to live alone or with just one other person and children tend to live in larger households.

Household type

Figure 1.39 shows the numbers of households of each type in 2006 and the projected number in 2031. There is a large projected increase in households containing just one adult, from 809,000 (35 per cent of all households) in 2006 to over 1.2 million (44 per cent) in 2031.

In contrast, the number of larger households is projected to fall, with households containing two or more adults with children decreasing from 443,000 (19 per cent of all households) in 2006 to 300,000 (11 per cent) by 2031.

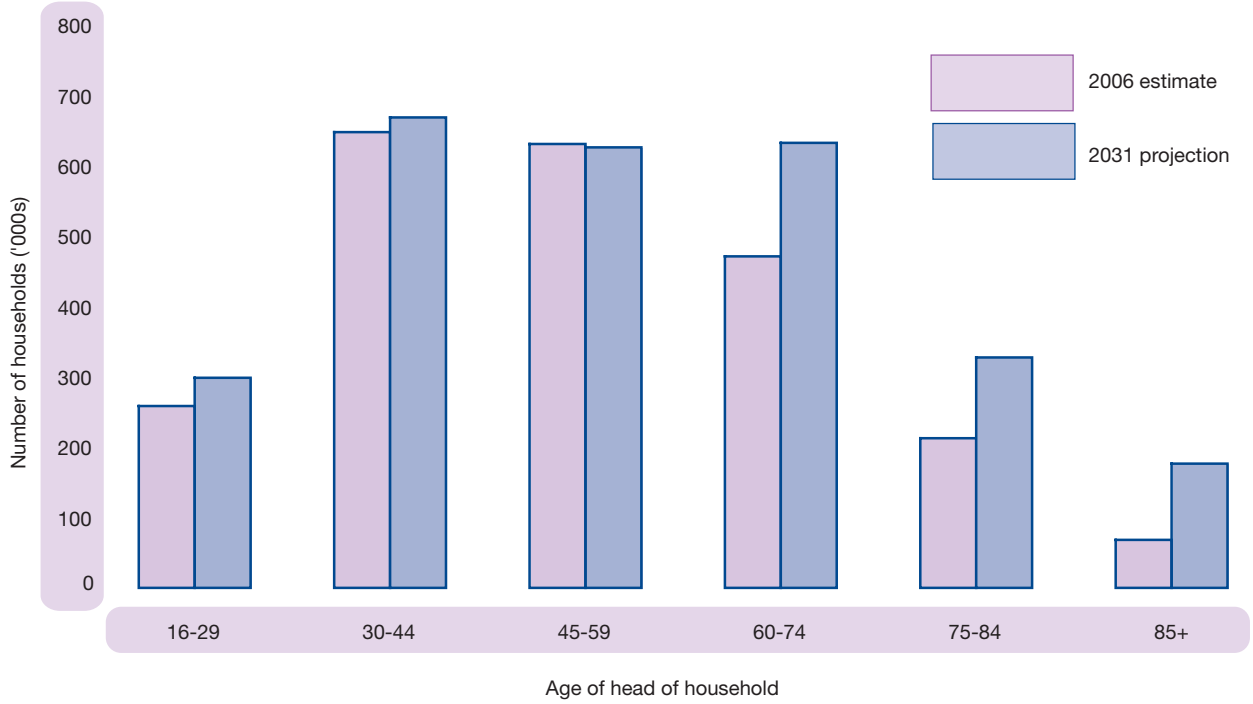
Figure 1.39 Households in Scotland by household type: 2006 and 2031



Age of head of household

Figure 1.40 shows the number of households in 2006 and the projected number in 2031, by the age of the head of household. Scotland's population is ageing, with a projected increase in the number of people in the older age groups. This trend is reflected in the household projections, with the largest increases shown in households headed by people aged 60 or over (an increase of over a half from 753,000 to 1.14 million between 2006 and 2031). In contrast, households headed by someone aged under 60 are projected to increase by just 4 per cent, to around 1.59 million. The number of households headed by someone aged 85 or over is projected to more than double over the same period, from 69,000 to 177,000.

Figure 1.40 Households in Scotland by age of head of household: 2006 and 2031

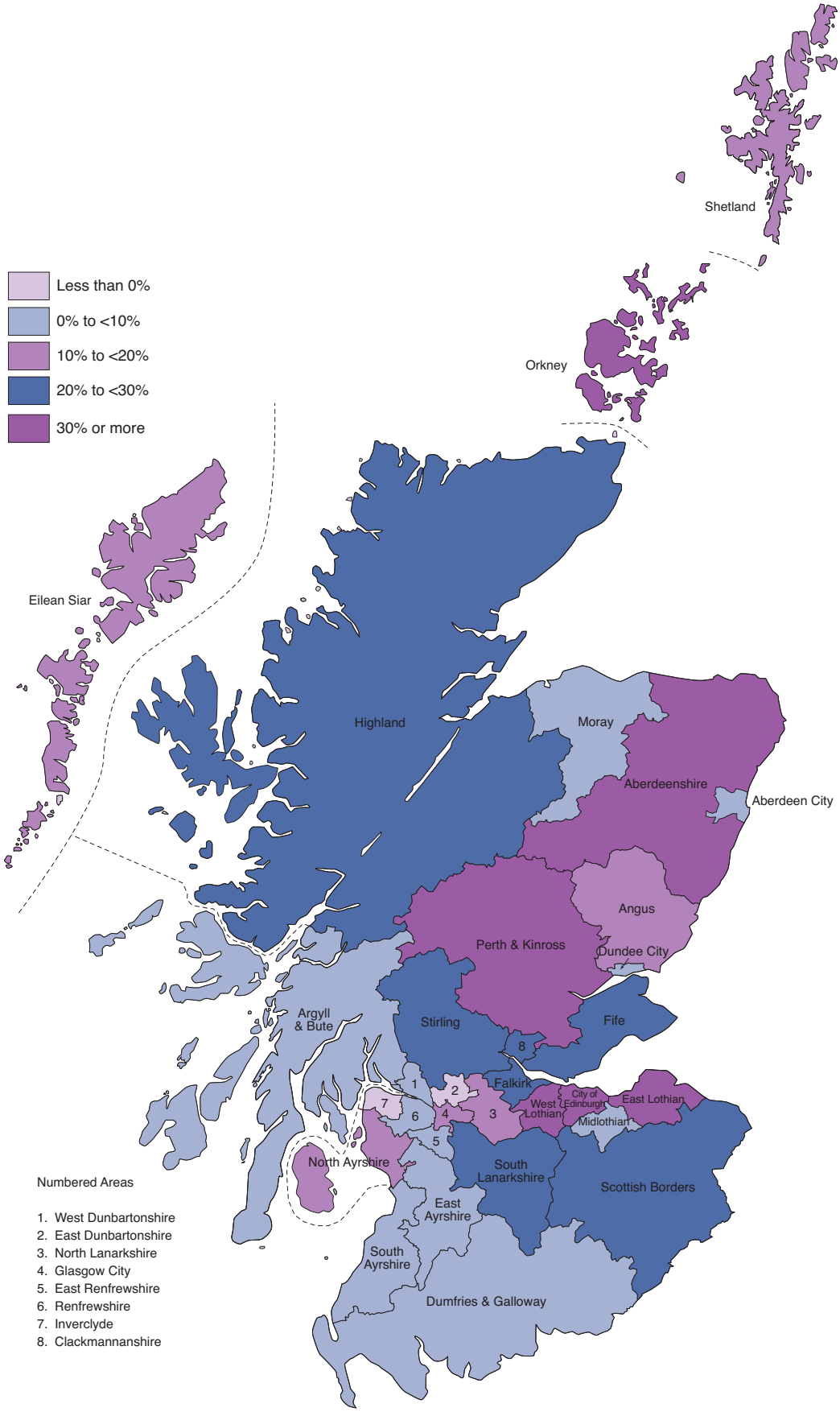


Variations within Scotland

The number of households in almost every local authority area is projected to increase. **Figure 1.41** shows the projected percentage change in the number of households in each local authority area between 2006 and 2031.

The largest projected increases are in Orkney, West Lothian and Edinburgh (all 35 per cent). Perth and Kinross, Aberdeenshire and East Lothian also have projected increases over 30 per cent. In contrast, Inverclyde has a projected decrease of 3 per cent over the same period, and East Dunbartonshire has a projected decrease of 2 per cent.

Figure 1.41 Projected percentage change in households by local authority area, 2006 to 2031



INTRODUCTION

The Births section of Chapter 1 discussed the trend in fertility rates over the past 50 years. The main points include:

- The general fertility rate fell from a high of 99.5 births per 1,000 women aged 15-44 in the early 1960s to around 60 in the late 1970s. It then declined to a low of 48.1 in 2002, followed by an upturn in recent years to the 2007 rate of 54.8 (**Figure 1.11**).
- Similarly, the total fertility rate fell from a high of an expected 3.09 children per woman in the mid 1960s to 1.70 in 1977. It then declined to a low of 1.48 in 2002, followed by an upturn in recent years to the 2007 rate of 1.73 (**Figure 1.14**).
- The age specific fertility rate of women in their 20s fell from over 190 births per 1,000 women in 1964 to 114 in 1977 and then declined to around 70 in 2002. It has risen in recent years to the 2007 rate of 73 (**Figure 1.12**).
- Fertility rates for women over 30 increased gradually over the past 30 years from 39 births per 1,000 women to the 2007 rate of 73, although rates are still slightly lower than they were in the 1950s and 1960s (**Figure 1.12**).
- The average completed family size fell from 2.03 for those born in 1951 to 1.86 for those born in 1961. Whilst the increasing fertility rates of those aged over 30 may lead to some catching up, it is highly unlikely that this will increase the average completed family size to the levels attained as recently as the 1960s (**Figure 1.15**).

This chapter considers the effect of social factors on fertility and gives some comparisons with other parts of the UK and selected other countries.

Mother's country of birth

In 2007, 78 per cent of births were to mothers born in Scotland and around 9 per cent were to mothers born in England. **Table 2.1** shows the number of births by country of mother's birth over the past 30 years.

Table 2.1 Births, by country of mother's birth, selected years

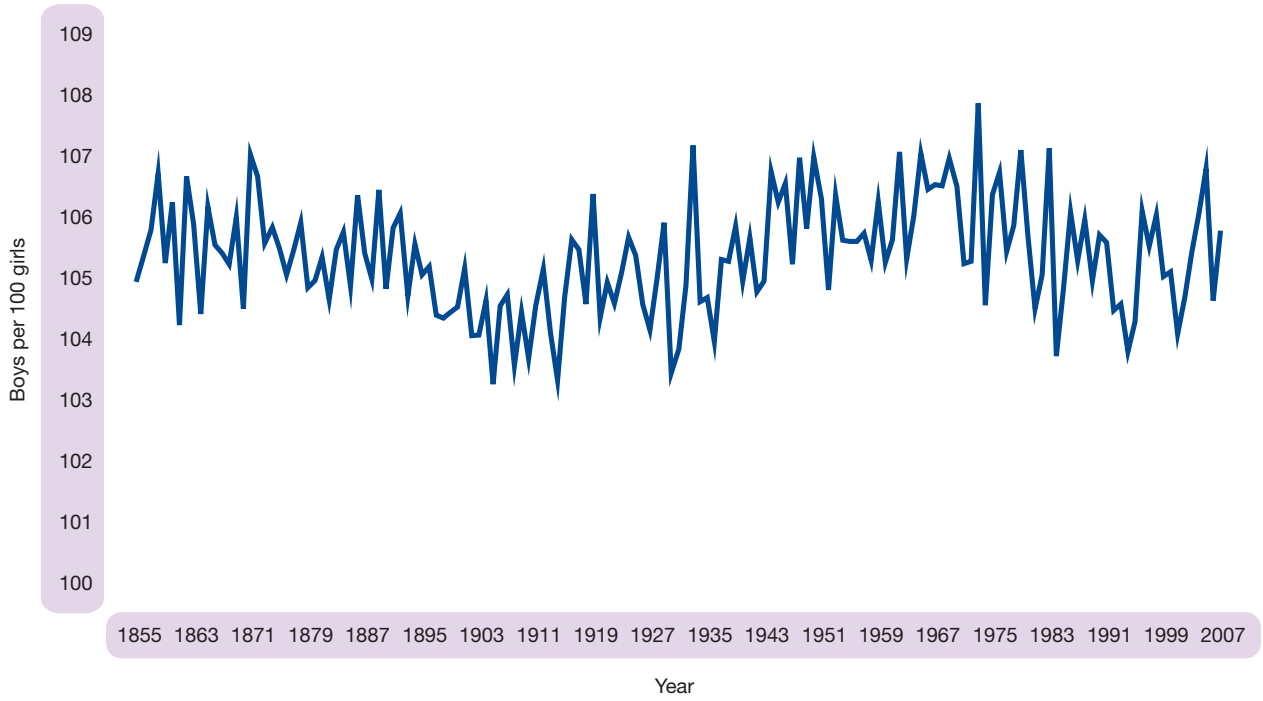
	Year									
	1977		1987		1997		2004		2007	
Mother's country of birth	Number of births	%	Number of births	%	Number of births	%	Number of births	%	Number of births	%
All births	**62,342**		**66,241**		**59,440**		**53,957**		**57,781**	
Scotland	54,305	87.1%	57,064	86.1%	49,908	84.0%	43,813	81.2%	45,328	78.4%
England	4,683	7.5%	5,376	8.1%	5,676	9.5%	5,221	9.7%	5,328	9.2%
Poland	18	0.0%	8	0.0%	11	0.0%	31	0.1%	934	1.6%
Pakistan	324	0.5%	531	0.8%	480	0.8%	558	1.0%	641	1.1%
Northern Ireland	416	0.7%	365	0.6%	394	0.7%	493	0.9%	536	0.9%
Germany	121	0.2%	240	0.4%	369	0.6%	385	0.7%	397	0.7%
India	213	0.3%	168	0.3%	112	0.2%	201	0.4%	324	0.6%
Ireland	464	0.7%	247	0.4%	214	0.4%	230	0.4%	303	0.5%
Other countries – each less than 0.5% of total births in 2007	1,798	2.9%	2,242	3.4%	2,276	3.8%	3,025	5.6%	3,990	6.9%

Since 2004, the number of births has increased by 3,824. Scots-born mothers accounted for 1,515 (or 40%) of that increase, and other UK-born mothers for a further 184 (or 5% of the increase). Polish-born mothers contributed 903 extra births (or 24% of the increase) and mothers born in the other nine countries which joined the EU in 2004 a further 233 extra births (or 6% of the increase). There were an extra 156 babies (4% of the total increase) born to mothers from the remaining EU countries and 833 (22% of the total increase) to mothers from the rest of the world.

Sex ratio at birth

It is a well established fact that in virtually all countries and societies more boys are born than girls. Though many theories have been advanced, there is no single scientific explanation for this phenomenon. Rather, it is believed to be the complex result of a range of different biological factors. The records held by the Registrar General show that, over the past 150 years, the sex ratio at birth in Scotland has been just under 106 boys for every 100 girls. The ratio in 2007 was 105.7 while the lowest ratio recorded was 103.2 in 1905 and the highest was 107.9 in 1973. However, **Figure 2.1** shows that, as well as the expected random year to year fluctuations, there appears to have been a long-term period of increase from early in the twentieth century to the mid-1970s and a slight decrease since then. A similar long-term increase was observed in England.

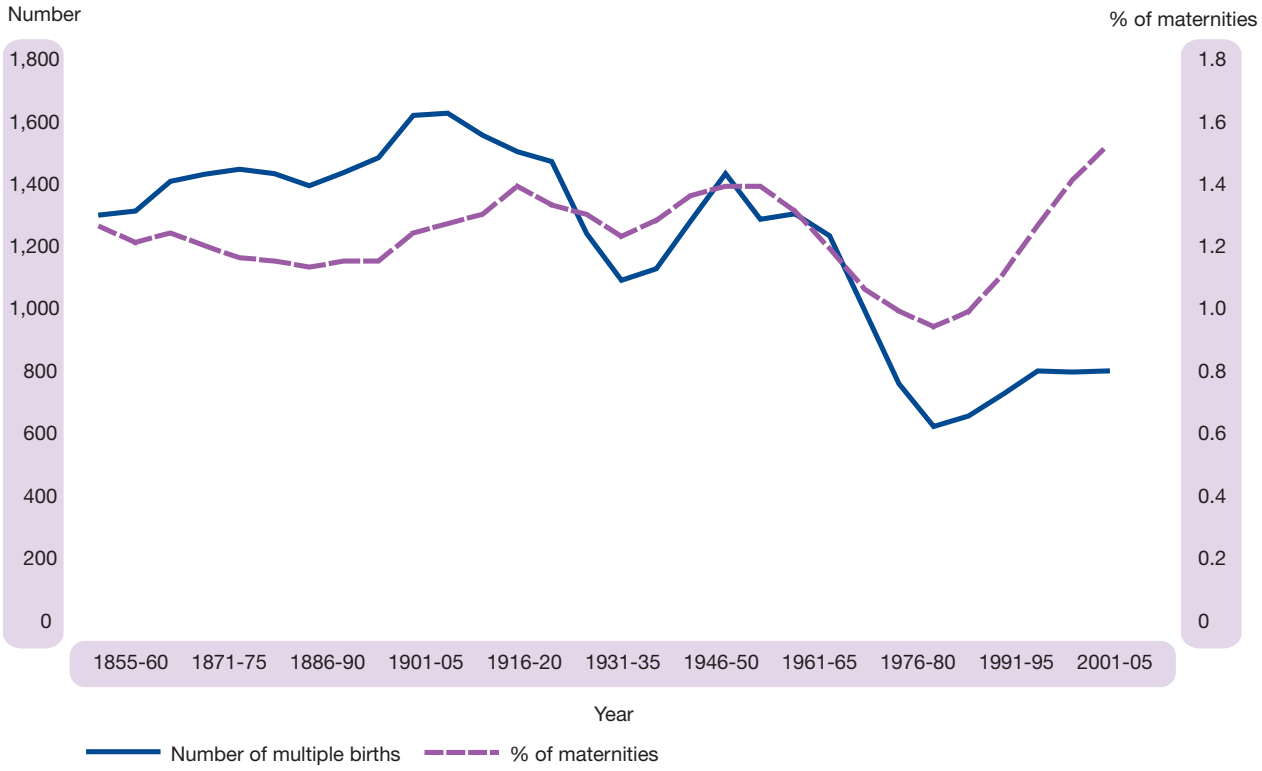
Figure 2.1 Sex ratio at birth, Scotland, 1855-2007



Multiple births

The proportion of maternities in Scotland resulting in multiple births has remained relatively constant at just over 1 per cent throughout the last 150 years (**Figure 2.2**). Though the five-year average dipped below 1 per cent in the late 1970s, it has subsequently risen to its highest ever level at just over 1.5 per cent, possibly associated with the increasing availability of fertility treatment involving the implantation of more than one egg. On average, just over 1 per cent of multiple births have involved triplets or higher order multiples. The actual numbers of such births peaked in 1995 at 30. Since then the number has fallen back substantially, perhaps because of changes in fertility treatment.

Figure 2.2 Multiple births, number and percentage of maternities, Scotland, 1855-2005



Marital status of parents

Information collected on the marital status of parents when registering a birth provides an insight into changing social attitudes. **Figure 2.3** shows the percentage of children born to unmarried parents since the introduction of civil registration. The first hundred years show a gradual decline from around 10 per cent in the 1860s to 4 per cent in the late 1950s. Since the 1960s, the proportion has increased steeply to the point where almost half of all children are born to unmarried parents.

Figure 2.3 Percentage of children born to unmarried parents, Scotland, 1855-2007

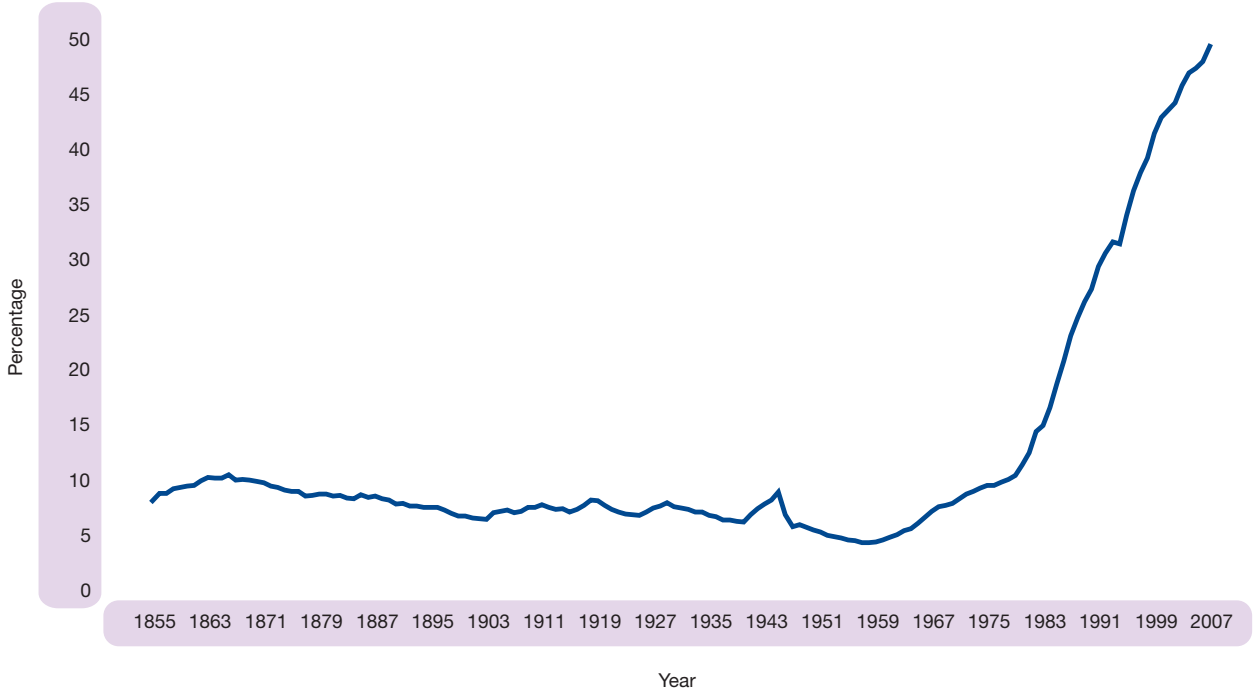
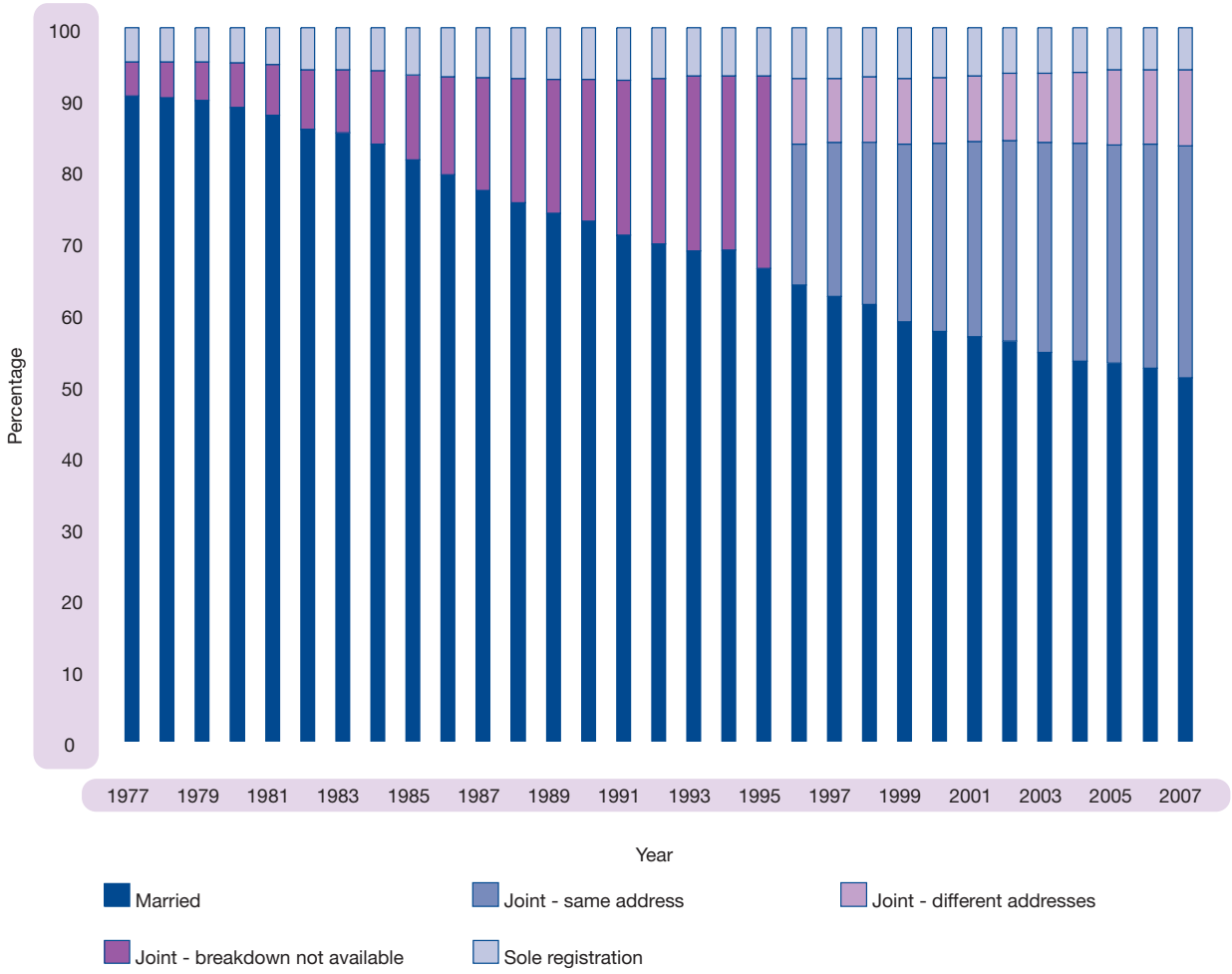


Figure 2.4 shows more detail on the marital status of parents over the past thirty years. In 2007, 51 per cent of births were to married parents, compared to 62 per cent ten years earlier and 90 per cent in 1977. However, the proportion of births registered solely in the mother's name has remained relatively constant between 5 and 7 per cent. The proportion of births to unmarried parents, which were jointly registered by the mother and father, has increased significantly to 32 per cent suggesting that the increase in births to unmarried parents has been in babies born to partners who are in a stable relationship.

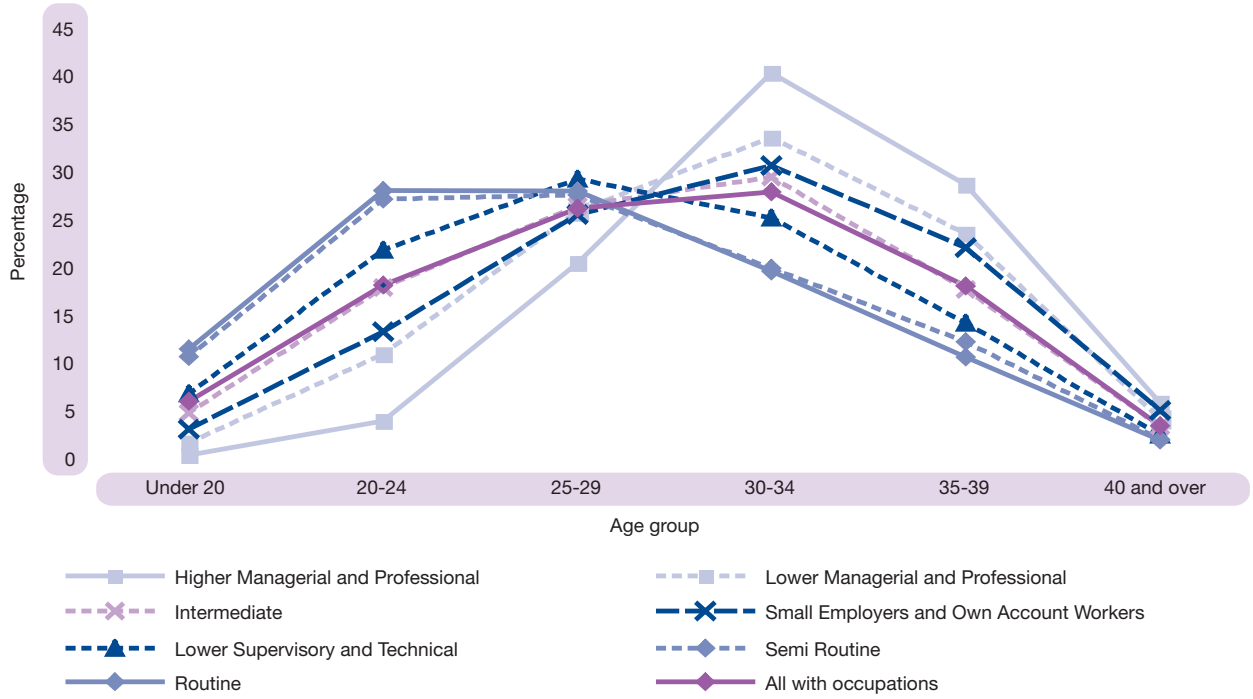
Figure 2.4 Percentage of births by marital status and type of registration, Scotland, 1977-2007



Socio-economic class

Figure 2.5 shows how the age profile of mothers in 2007 varied significantly by socio-economic class (as defined by occupation). For those allocated to 'managerial and professional' categories there was a particularly marked peak of childbearing in the 30-34 age group. By comparison, the peak childbearing age for those in 'routine' and 'semi-routine' categories was 20-24.

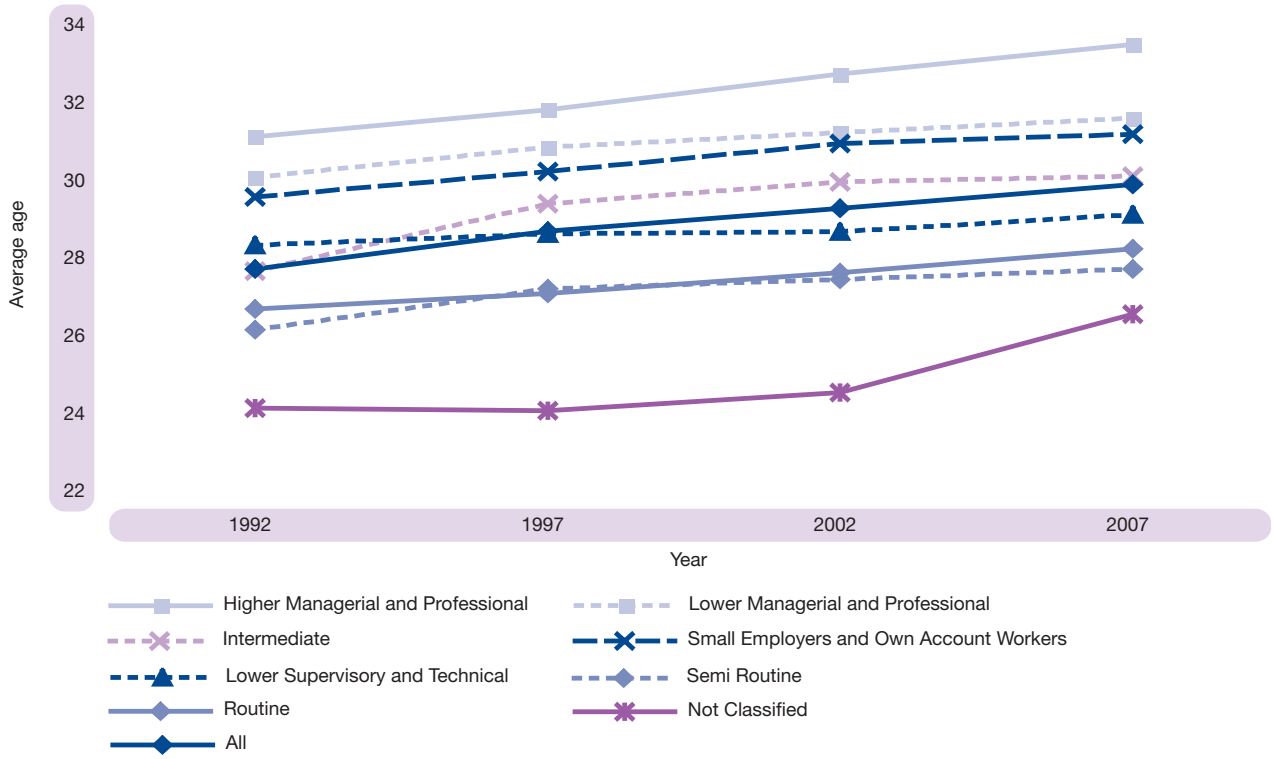
Figure 2.5 Percentage of births by age group, by socio-economic class, Scotland, 2007



Average age of mother

The trend towards later childbearing may be summarised by considering the average age for all mothers. In 2007, the average was 29.4 compared with 26.1 in 1977, 26.7 in 1987 and 28.7 in 1997. **Figure 2.6** shows that, over the last 15 years, the average age of mothers increased by broadly similar amounts for all socio-economic classes. In 2007, the average age ranged from around 28 years for those in the 'routine' and 'semi-routine' categories to 34 for the 'higher managerial and professional' category.

Figure 2.6 Average age of mother, by socio-economic class, Scotland, 1992-2007

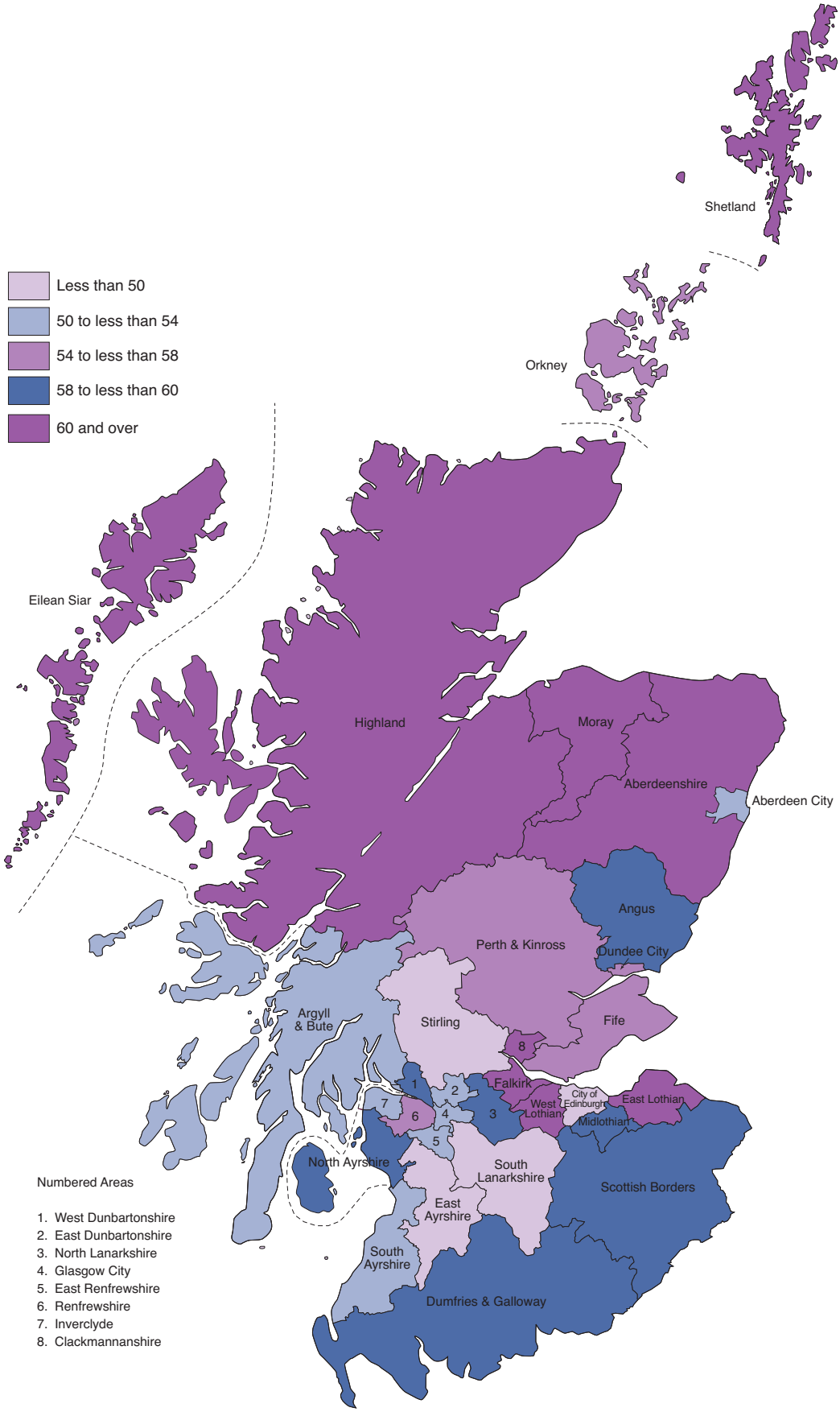


Regional variation

Fertility levels are not uniform across the country. **Figure 2.7** shows the 2007 general fertility rates for Council areas. The Scottish rate is 54.8 births for every 1,000 females of childbearing age. Urban areas tend to have a lower birth rate than the Scottish average, e.g. at 43.9 the rate for Edinburgh is 20 per cent below the Scottish average. The reasons for this are complex but may be linked to the large student populations, high female economic activity rates and the higher cost of housing.

The urban hinterlands and the more rural areas, e.g. East Lothian, West Lothian and Aberdeenshire tend to have higher than average rates of fertility. This may be associated with the availability of affordable family housing and lower female economic activity rates. There may also be more specific reasons. For example, the relatively high GFR of 65.4 in Moray will, at least in part, be due to the large number of young families associated with the two Royal Air Force bases there.

Figure 2.7 Live births per 1,000 women age 15-44, by Council area 2007



Since 2002 (when the annual number of births began to increase) the GFR has increased from 48.1 to 54.8 births for every 1,000 females of childbearing age, a rise of 14 per cent. **Table 2.2** shows the change in GFR at Council level between 2002 and 2007. The GFRs in all Council areas have increased, to a greater or lesser extent. There were increases of more than 20 per cent in six areas – Clackmannanshire (30 per cent), West Dunbartonshire and Falkirk (both 24 per cent) and Shetland, East Lothian and Moray (all 21 per cent). Smaller increases, of less than 10 per cent occurred in five areas – Edinburgh and East Renfrewshire (both 6 per cent), East Dunbartonshire (5 per cent), Stirling (4 per cent) and Argyll and Bute (3 per cent).

Chapter 2 of the 2006 Annual Review focused on local perspectives of Scottish demography and contains a number of tables, charts and maps on regional variation in fertility.

Table 2.2 Number of births and general fertility rate, by Council area, 2002 and 2007

	Number of births		General fertility rate (GFR)		Increase in GFR
	2002	2007	2002	2007	
Scotland	**51,270**	**57,781**	**48.1**	**54.8**	**14%**
Council area					
Aberdeen City	2,098	2,417	43.9	52.3	19%
Aberdeenshire	2,326	2,690	52.5	60.0	14%
Angus	1,014	1,152	50.1	59.4	18%
Argyll & Bute	755	741	48.9	50.1	3%
Clackmannanshire	480	634	49.3	63.9	30%
Dumfries & Galloway	1,343	1,507	50.5	59.8	18%
Dundee City	1,436	1,668	45.1	53.8	19%
East Ayrshire	1,157	1,304	47.6	55.0	16%
East Dunbartonshire	942	892	44.6	47.0	5%
East Lothian	910	1,101	51.4	62.1	21%
East Renfrewshire	916	893	51.4	54.3	6%
Edinburgh, City of	4,477	5,056	41.3	43.9	6%
Eilean Siar	242	263	54.3	60.2	11%
Falkirk	1,507	1,892	49.5	61.2	24%
Fife	3,536	4,076	49.0	56.7	16%
Glasgow City	6,386	7,154	45.8	51.2	12%
Highland	1,977	2,332	50.8	60.0	18%
Inverclyde	787	857	45.5	53.8	18%
Midlothian	863	937	52.2	59.2	13%
Moray	876	1,001	54.3	65.4	21%
North Ayrshire	1,379	1,528	49.8	57.7	16%
North Lanarkshire	3,664	4,045	51.9	59.0	14%
Orkney Islands	164	190	47.5	54.6	15%
Perth & Kinross	1,245	1,391	50.0	54.5	9%
Renfrewshire	1,797	1,898	49.2	54.7	11%
Scottish Borders	1,021	1,170	51.6	59.8	16%
Shetland Islands	209	244	50.3	60.8	21%
South Ayrshire	955	1,029	45.4	51.6	14%
South Lanarkshire	3,076	3,452	48.5	55.3	14%
Stirling	833	878	45.7	47.6	4%
West Dunbartonshire	939	1,105	47.2	58.4	24%
West Lothian	1,960	2,284	54.6	63.7	17%

CHAPTER 3 – FERTILITY, POLICY AND THE FUTURE OF SCOTLAND'S POPULATION

An invited chapter from Elspeth Graham (University of St Andrews), Lynn Jamieson (University of Edinburgh) and John MacInnes (University of Edinburgh).

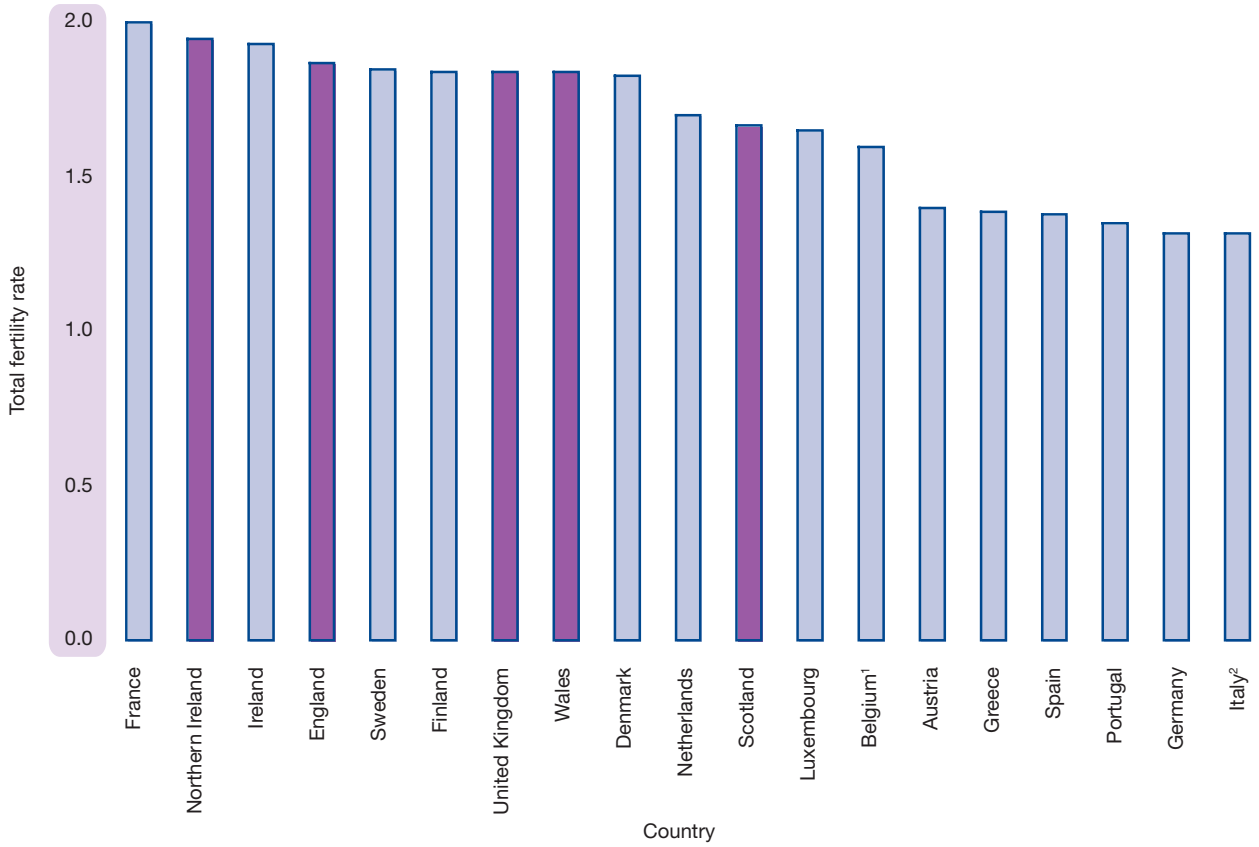
INTRODUCTION

Scotland's population has not been replacing itself. In recent decades, the number of children born to mothers living in Scotland has fallen below the number that would be needed to replace the present parent generation, given current mortality and migration rates. The annual reports of the Registrar General reveal the trend in birth rates, with fertility in Scotland declining significantly since 1964 when the total fertility rate (TFR) stood at 3.09 births per woman of reproductive age[1]. The decline of the 1970s is especially apparent in **Figure 1.14** (see Chapter 1), which shows the trend in Scotland's TFR since 1951. In the last few years, fertility rates in Scotland have moved upwards but, at 1.73 births per woman, the TFR remains below the generational replacement level of around 2.1 births per woman and Scotland currently has the lowest fertility of any of the constituent countries of the United Kingdom.

Although low fertility rates are not unique to Scotland and indeed Scottish fertility is above the EU-15 average (**Figure 3.1**), the position of Scotland with respect to other countries has shifted a little. Fertility rates were consistently higher than in England over many generations but, since around 1980, have been somewhat lower. Low fertility has consequences for the future size and age structure of the population and thus of the labour force. If fertility continues at the current level and there is little change in migration and mortality (the other factors influencing population size), the population will shrink. The latest Government projections suggest that the population of Scotland will decline below 5 million around 2076. Scotland will also experience population ageing with an overall trend towards fewer young people and more people in older and very old age groups.

1 The TFR estimates the total number of children a cohort of women would have if they all went through their childbearing years following the average age-specific birth rates in effect for a particular time.

Figure 3.1 Total fertility rate, Scotland and EU-15, 2006



[1] Data for 1997.
[2] Data for 2005.
Source: EUROSTAT, General Register Office for Scotland,
Office for National Statistics and Northern Ireland Statistics and Research Agency.

Should we be worried? Does Scotland need a pro-natalist population policy to improve the age structure of its population or avoid eventual population decline? If so, whom should it target? Answering these questions is not straightforward. This chapter reviews evidence and arguments relevant to understanding the link between fertility, policy and the future of Scotland's population. First we use recent evidence to examine differences between fertility rates in Scotland and England and geographical variations in fertility within Scotland. Then we present data on the behaviour and attitudes of both men and women in Scotland and consider the nature of men's contribution, as well as women's, to fertility trends. Finally we return to the more contentious issue of concerns raised by the likelihood of an older population and debates about policy agendas.

Identifying and explaining trends in fertility

Fertility is a challenging topic for research as good data are often difficult to obtain, and their interpretation is vigorously debated. The Economic and Social Research Council and the Scottish Government recently combined to sponsor a Scottish Demography Research Programme, which provided funding for a number of projects examining different aspects of Scotland's population. In this chapter we draw on selected results from two of these projects[2], as well as three other sources, to establish as complete a picture as possible of fertility in Scotland. The first project asked the question 'Why is fertility in Scotland lower than in England?' using data from the British Household Panel Survey (BHPS) covering the period 1991-2003[3]. BHPS is a longitudinal survey that gives us the fertility histories (number of children and when they were born) and a great range of associated information for a sample of 5,460 women born in Scotland and England from 1955 onwards. The second project analysed the results of a set of questions about fertility included in the 2005 Scottish Social Attitudes Survey (SSAS)[4]. These questions were asked of a representative sample of those in reproductive age groups (men aged 18-49 and women aged 18-45) living in Scotland.

In this chapter we also present evidence from the annual General Household Survey (GHS) which asks women (but, unfortunately, not men) aged 16 to 59 about their fertility history and expectations. This gives us data for around 28,000 women in England and 3,000 women in Scotland interviewed between 1994 and 2005. Finally, we use data from the Census combined with birth registration data to look in detail at how fertility varies across different areas of Scotland. These diverse sources of evidence allow us to begin the task of identifying and explaining trends in fertility.

The historical context of fertility change

Despite new research, the causes of recent low fertility remain much debated. Part of the context is a long-term trend, across all affluent countries, away from very large families. At the start of the twentieth century, families of nine or ten children were common in Scotland and, on average, women had over five children (although around one in five had none: usually because they did not marry). A century later fewer than one in ten women in Scotland will have more than three children, and one in three will have a single child or none at all. These long-term changes are linked to increasing life expectancy and falls in mortality, especially infant deaths. Around one quarter of girls born at the start of the twentieth century died before their mid-twenties, while barely half reached 70 years of age; average life expectancy at birth was just 47 years. Mortality for boys was even higher. However, today much smaller numbers of people meet premature deaths through injury or disease and life expectancy at birth for girls is now around 80 years.

2 We gratefully acknowledge the contribution of our co-researchers to the findings presented in this chapter: Kathryn Backett-Milburn, George Bouliotis, Paul Boyle, Catherine Bromley, Ian Dey, John Ermisch, Zhiqiang Feng, Vernon Gayle and Fran Wasoff.

3 For further information see Graham, Elspeth (2007) 'Why is fertility in Scotland lower than in England?' Full Research Report (RES-342-25-0003), ESRC Society Today (www.esrc.ac.uk)

4 For further information see Dey, Ian (2007) 'Fertility Variations: Socio-Cultural Attitudes and Interactions' Full Research Report (RES-342-25-0015), ESRC Society Today (www.esrc.ac.uk)

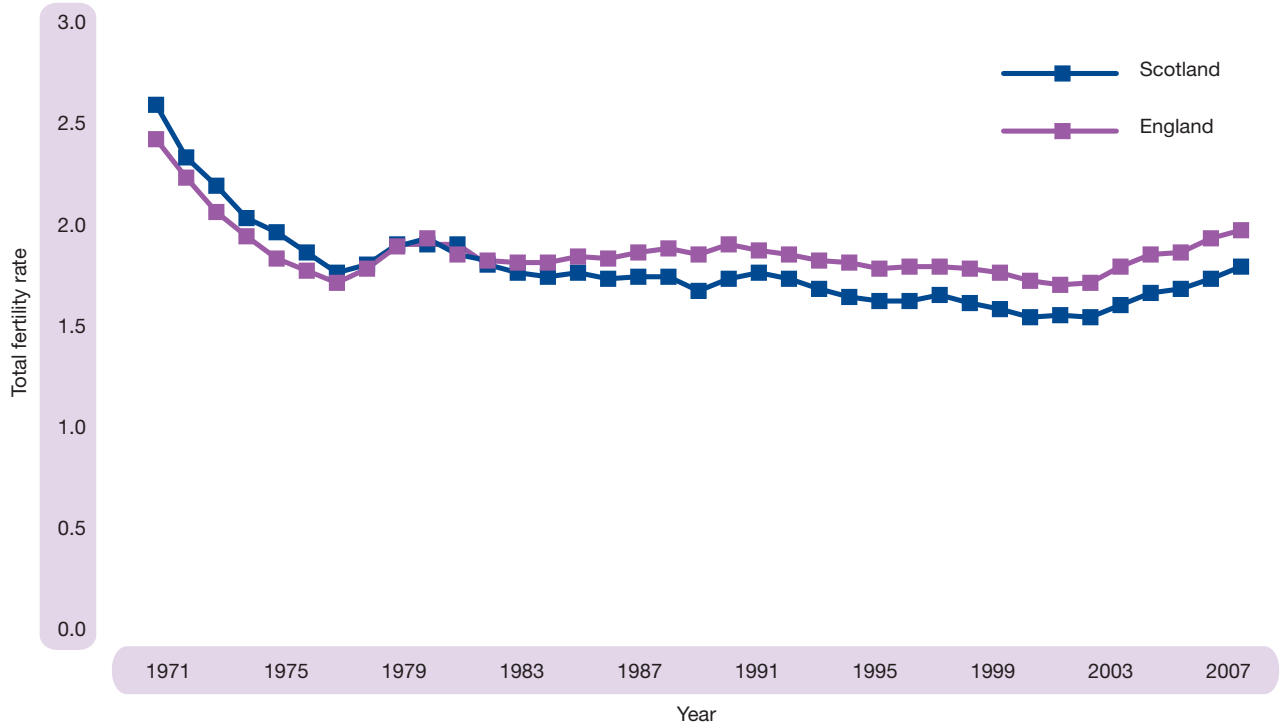
Across the twentieth century the social context of fertility also changed dramatically. Living standards rose continually while working hours declined. Women gained social and political rights and eventually formal discrimination by sex became unlawful. Divorce became not only legally but also socially and economically possible. Marriage ceased to be obligatory; 'illegitimacy' and single parenthood lost their stigma. Free comprehensive public healthcare became available and both infant and maternal mortality fell to very low levels. In the last decades of the century, the 'male breadwinner' division of gender roles weakened. Women's employment grew and marriage and motherhood ceased to be associated with long-term withdrawal from paid work. The technology of contraception was revolutionised by the 'pill'; abortion became legal and medically safer. Maternity and parental leave became available and the provision of public childcare, after school care and forms of state support to parenting expanded.

This broad historical context is common to all of the UK, and indeed most of Europe. However, from around the early 1980s relative fertility levels in Scotland and England changed. It is therefore useful to start our analysis of fertility in Scotland by looking more closely at why the fertility rate in Scotland is now below that of England, using data from the GHS and the BHPS.

Fertility in Scotland and England

Scotland had higher fertility than England until around 1980 when England's TFR first exceeded that for Scotland. Since then England has continued to have a higher TFR (**Figure 3.2**). One explanation for the difference suggested by some commentators is that England has a larger immigrant population, whose fertility tends to be higher (Dunnell 2007). However, evidence from the BHPS shows that the fertility of women born in Scotland from 1955 onwards is lower than that of comparable English women even after those born outside the UK are excluded from the analysis. Evidence from the GHS confirms this finding when we exclude both women born outside the UK and women from ethnic minorities. A further possibility is that Scottish women have their first child at a later age than English women, leading to lower fertility overall. However, our analysis of BHPS data found that Scottish women tended to have a first birth at an *earlier* age. Half of the Scottish women in our sample cohorts had their first birth by age 27.4 years compared to 28.1 years for English women. GHS data showed no difference between women in Scotland and England in this respect, with an estimated median age at first birth of 27 years for both countries. Moreover, childlessness does not appear to be significantly more common among Scottish women compared to English women, with an estimated 17% of women in both countries remaining childless. Again GHS data confirm this finding, although the analysis estimates the level of childlessness for women aged 45 at 21% for both countries.

Figure 3.2 Total fertility rate in Scotland and England, 1971-2007

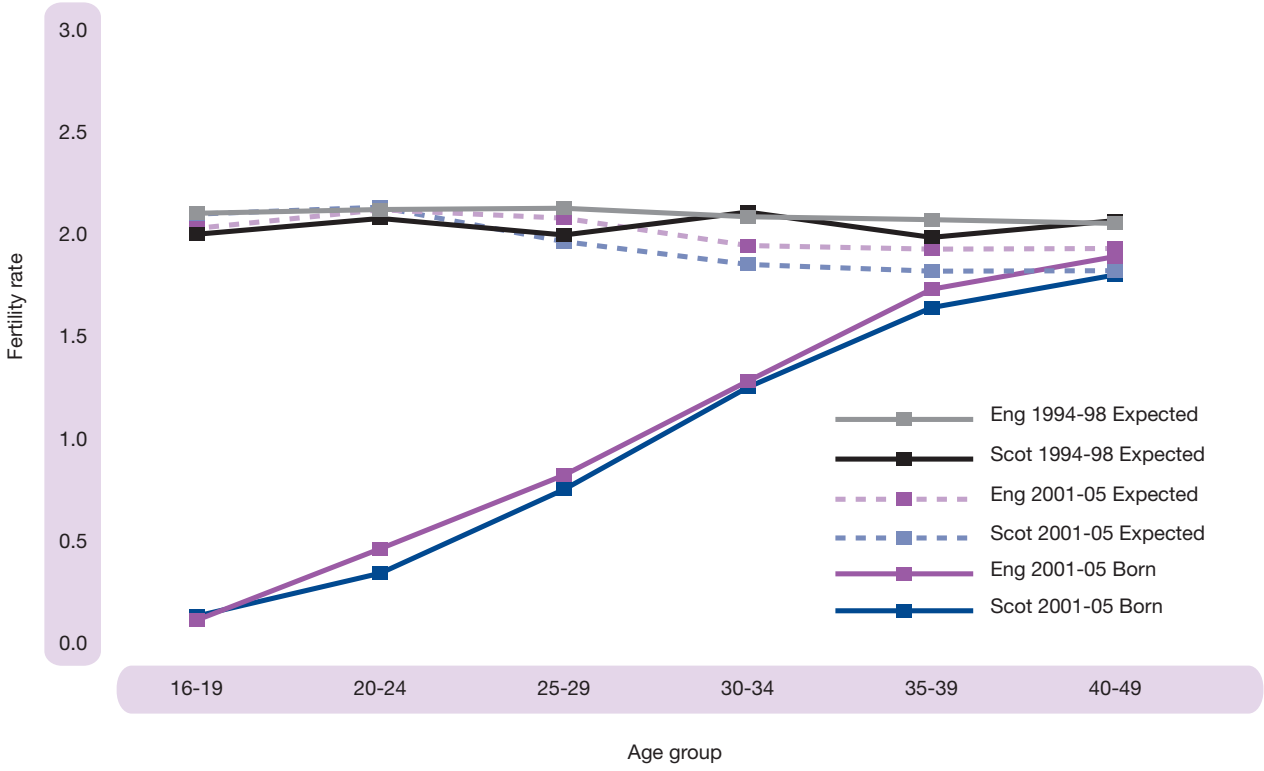


Comparing the details of women's fertility behaviour in Scotland and England reveals differences which may begin to provide an explanation for Scotland's lower fertility. BHPS data show that Scottish women leave longer gaps between births. Fifty per cent of English-born women have a second birth within 3.2 years of their first birth, compared to 3.5 years for Scottish-born women; and 25 per cent of English women have a third birth within 3.3 years of their second birth, compared to over 4 years for Scottish women. Scottish women are also more likely to 'stop at one or two' children. Again results from the GHS confirm this pattern. Estimated mean age at second birth, at 31.3 years, is about six months higher than for England. By age 45 about 22.4 per cent of women in Scotland had three or more children, compared to 26.7 per cent in England. Thus patterns of spacing births and stopping reproduction appear to be different in Scotland and England. However, we still lack a convincing explanation of *why* this is so.

We can also study people's fertility intentions and expectations using the GHS and BHPS surveys. Such data have to be interpreted carefully, as we cannot assume that people always have a clear idea, especially at earlier ages, of how many children they wish to have. Longitudinal studies in other countries have found only rather weak relationships between people's fertility preferences and their subsequent behaviour. This is what we might expect, since people may have little individual control over aspects of their lives that are important to fertility decisions, such as the course of their career or that of their partner, or over how an intimate relationship develops. However, at an aggregate level, what happens to the intentions or expectations about fertility that women of different ages have over time can tell us something about the factors influencing fertility.

The BHPS study suggests that there are no significant differences in the fertility *intentions* of Scottish and English women. One possible implication is that there are barriers operating in Scotland which result in Scottish women being less likely than English women to achieve their original intended family size. The GHS asks women under 50 about whether they 'expect' to have any more children, and if so, how many children they ultimately expect to have. **Figure 3.3** plots the fertility expectations, by age group, of women in Scotland and England comparing results from the GHS surveys carried out since the year 2001, and surveys from 1994-98. For comparison, the Figure also records the actual fertility history of the women in each age group as recorded by the later series of GHS surveys. As we would expect, once women are in their forties, very few expect to have more children, so that expectations and behaviour converge. While in the surveys between 1994 and 1998 average expectations change little over the life course, staying close to two children in both countries, in the more recent surveys expectations shift downwards in older age groups, and to a lower level in Scotland than in England. This suggests that more women in Scotland than in England revise their fertility expectations downwards as they get older. We also know, from comparing the results of earlier GHS surveys, that fertility expectations in both countries have shifted downwards for all age groups over the last three decades (Smallwood and Jeffries 2003; MacInnes and Pérez 2007). It seems that this process has been more significant in Scotland than in England.

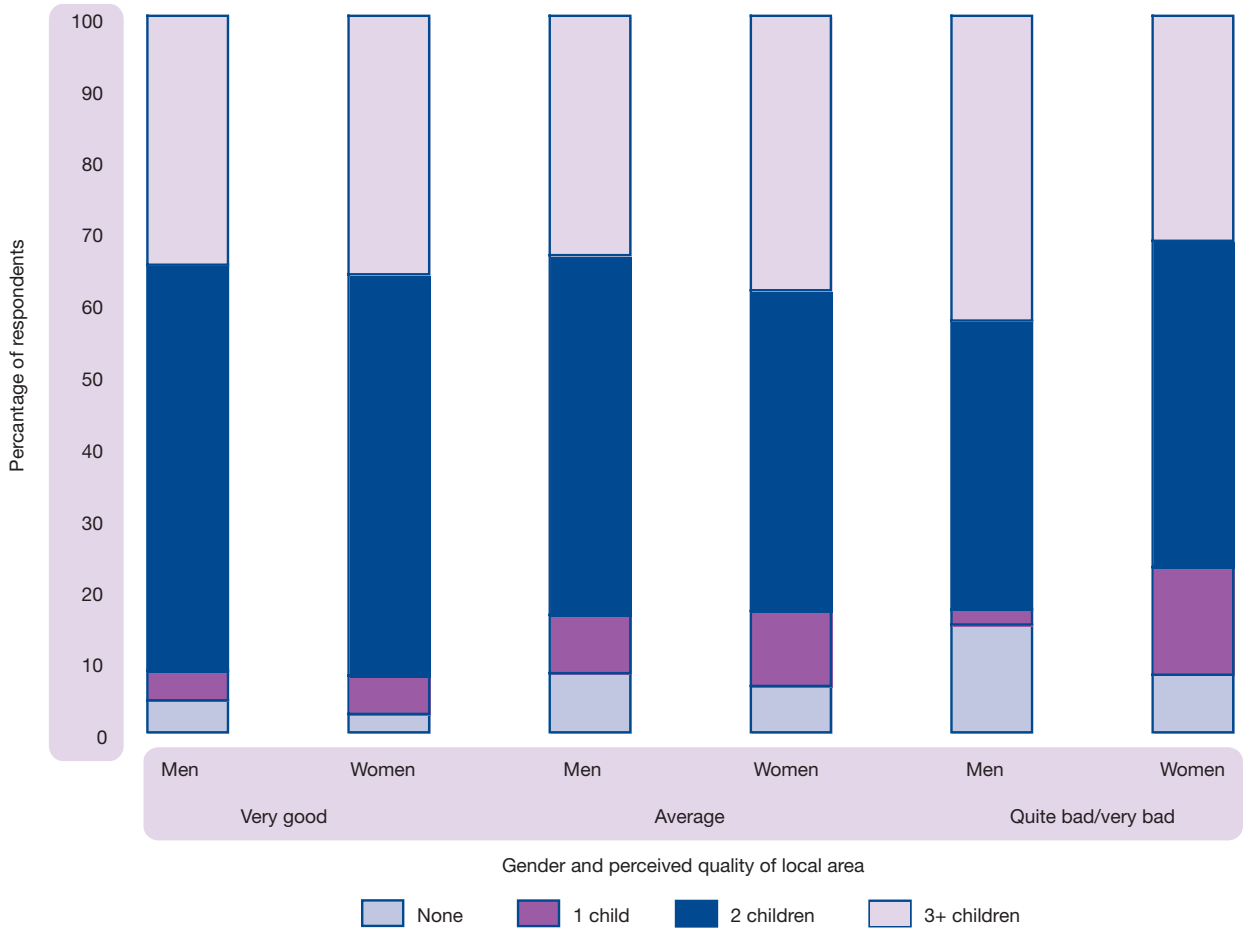
Figure 3.3 Expected fertility by age group: Scotland and England 1994-98 and 2001-05



Geographical variations in fertility

A further approach to understanding Scotland's fertility involves examining how fertility ideals and behaviour vary geographically within Scotland. The fertility module added to the SSAS 2005 reveals some interesting variations across different types of neighbourhood. Respondents were asked how many children they would ideally like to have, 'thinking in general and regardless of your current circumstances'. **Figure 3.4** shows the distribution of what both men and women say is their ideal family size according to the perceived quality of their neighbourhood for bringing up children. Overall, only a minority (under 20%) of men and women in Scotland think that no children or one child is the ideal family size. Nevertheless, of these, it is men living in neighbourhoods perceived as 'bad' or 'very bad' who are more likely to think that no children is ideal, and it is women living in similar neighbourhoods who are more likely to think that one child is ideal. For the total sample, those living in areas considered 'very good' for bringing up children are most likely to say that two children is their ideal, whereas men in 'bad' or 'very bad' neighbourhoods are most likely to consider three or more children the ideal. Despite the unreliability of people's ideal family size as a predictor of fertility behaviour, these geographical variations strongly suggest a link between where someone lives and their ideas about fertility.

Figure 3.4 Ideal family size by gender and perceived quality of local area for bringing up children



Source: Scottish Social Attitudes Survey 2005

When we examine fertility behaviour across Scotland using complete national data from the census and the registration of births rather than a sample survey, another interesting spatial pattern emerges. We know that fertility varies geographically according to the age structure and socio-economic characteristics of local populations. For example, neighbourhoods with a high proportion of the population aged over 50 years can be expected to have few births, as can areas with a large student population. However, even when we take these known variations into account, geographical differences are still evident. When we map the variations in the numbers of births in small areas of Scotland *after a range of factors known to influence fertility is taken into account*, we find clusters of lower than average and higher than average fertility that are unexplained by the age structure or socio-economic characteristics of local populations (Boyle *et al.* 2007)[5]. The clustering of lower fertility in the major cities and higher fertility in the surrounding commuter belts stands out, and is especially pronounced around Glasgow and Edinburgh.

The challenge of explaining the pattern remains but it may be the result of selective migration. For example, it is plausible to suppose that couples are moving out from central cities if and when they have children, prompted perhaps by the lack of affordable family housing in the city. Thus, the housing market in urban Scotland could be one of the barriers to higher fertility. It would seem that central cities, in particular, are not family-friendly. The geographical separation of families from the mainly childless has increased over time and creates problems for working parents who have to commute into the city. The costs and location of childcare, along with commuting distances, are major issues for working parents with young children. One response may be to have fewer children than the couple would otherwise want.

5 The maps of fertility variations in Scotland use data from vital registration records and the 2001 Census of Scotland for small areas (CATTs). They can be found in Boyle *et al*. 2007.

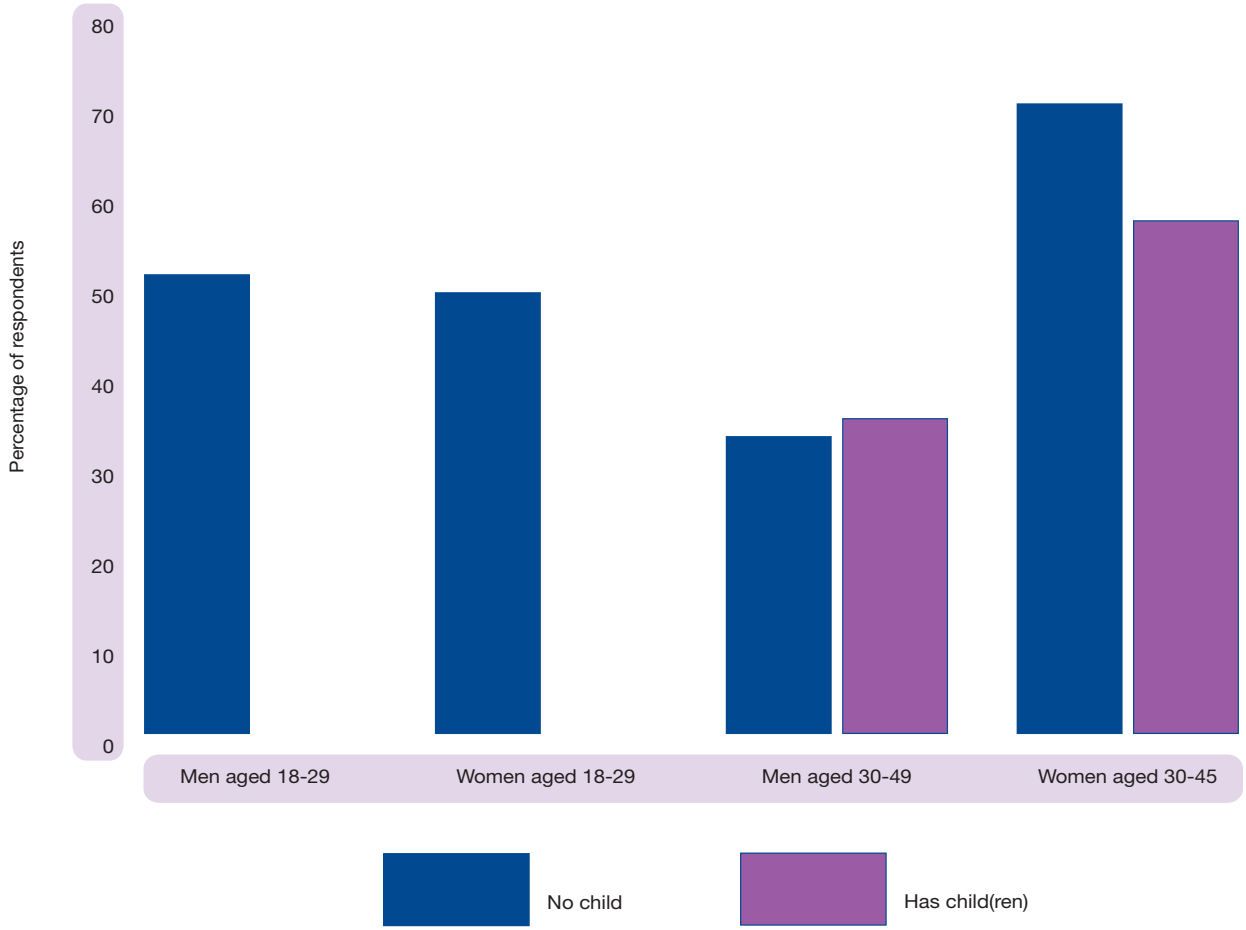
The role of men

Much of the research on fertility focuses on women's expectations and behaviour. Many surveys only ask questions of women. However, men are more often partners in having and bringing up children than simply biological fathers. The module of questions about fertility included in the SSAS 2005 allows us to look at men's attitudes towards fertility, although some of the results are based on rather small sample sizes. The overall sample size for the module was 781 individuals (406 men and 377 women) of childbearing age. When it is subdivided to compare men and women by age and whether or not they have children, totals in each category become quite small, although usually around a hundred. Thus the evidence should be read as an indication of people's views rather than as definitive. We also draw upon evidence about men and women's attitudes to the family in Scotland from SSAS 2000.

The annual reports of the Registrar General show that almost half of all births are now to unmarried parents but that the overwhelming majority of new-borns have a mother and a father living at the same address. Moreover, a long-term stable partnership between two parents is still very widely regarded as the appropriate arrangement for bringing up children, even if it is less often achieved. The SSAS 2000 showed a weakening but not a collapse of the presumption that the best parenting arrangement is a legally married man and woman. When adults of child-rearing age were asked whether they agree or disagree that 'People who want children ought to get married', many opted for 'neither agree nor disagree' or 'I cannot choose'. Nevertheless, among nearly 200 *childless* adults aged 18-29 years, 41 per cent of young women and 33 per cent of young men agreed. And for the majority of people, having a partner, albeit not necessarily a marriage, remains a prerequisite to having children.

Widespread economic and ideological changes have undermined the combination of 'male breadwinner' and 'housewife' as the dominant model of family household across much of the wealthy world. It has been replaced by dual-earner households and a radical increase in the number of women combining paid employment with bringing up children. The fertility module of the SSAS 2005 demonstrates that very few men and women of childbearing age (fewer than one in five) support the idea that men should be the main breadwinner when both parties of a heterosexual couple are employed. The results also suggest that women anticipate motherhood or an additional child as having a greater impact on their employment than men anticipate from fatherhood (**Figure 3.5**). Men and women appear to differ both in their anticipation of the impact of having a child on work progress and in their actual experience of the impacts of parenthood. In most dual-earner households with children, women continue to do more of the domestic and child care work than men. Although an overwhelming majority in the sample agreed that men and women in couples *should* play an equal part in domestic work, most men and women in such households also agreed that, in practice, women actually did more.

Figure 3.5 Percentage of people who agreed that 'work progress would suffer if I had a(nother) child'**

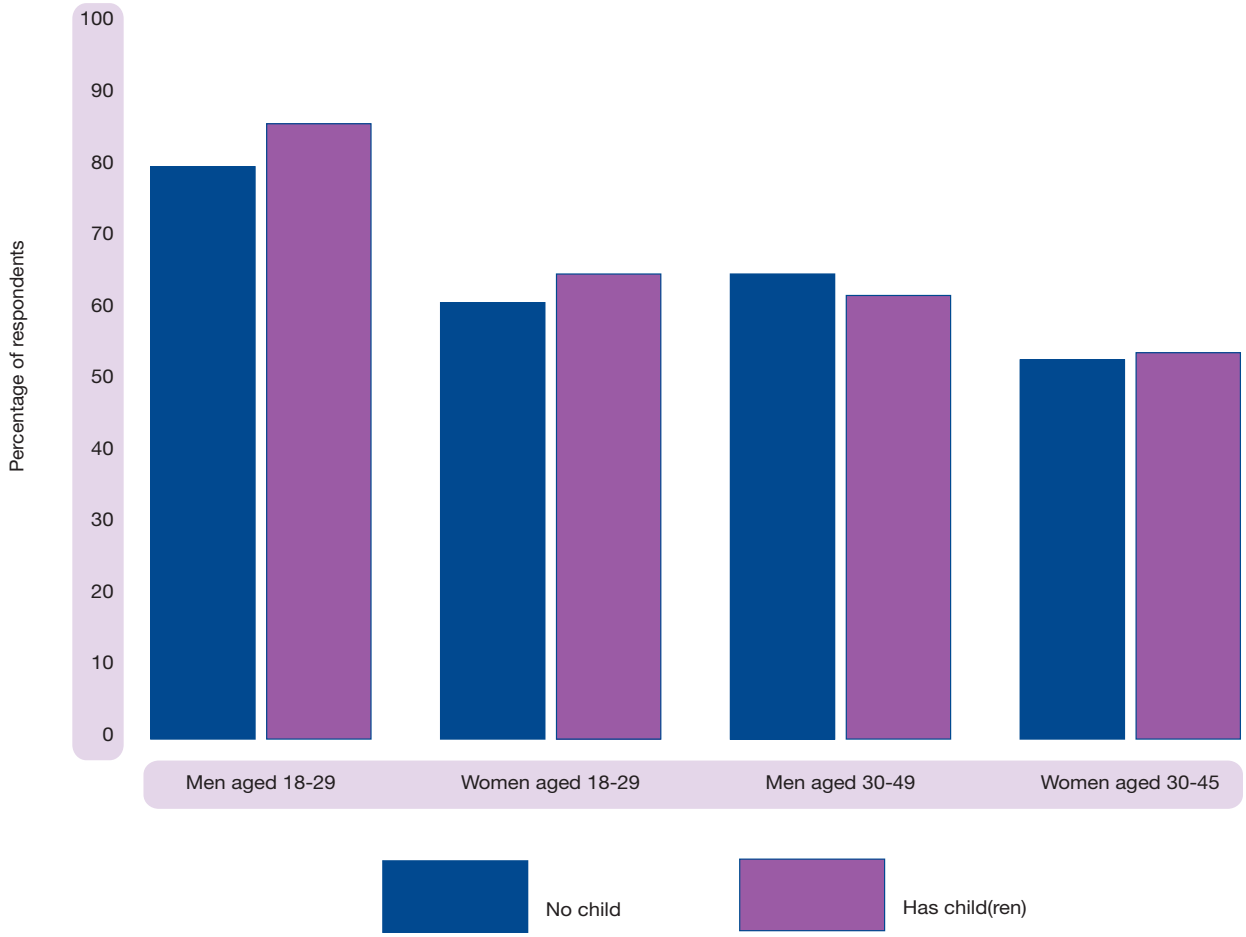


Source: Scottish Social Attitudes Survey 2005

** Those in the younger age group with children have been excluded because of the small numbers.

Over half the men and women in the sample agreed that 'it is difficult for both parents to work if they have more than two children' (**Figure 3.6**). Here we include the 66 parents in the younger age group, whether or not they were in employment. Women with children and women over 30 may have more reason than men to anticipate the practical impact of children on their own time and on their employment prospects but men, especially young men, were even more likely than women to agree that having more than two children makes it difficult for both parents to work. This suggests that men may remain more attuned than women to the risk that children or additional children will result in men becoming the sole household earner. Thus, although traditional gender roles are no longer seen as being the right thing to do, it seems that they continue to give men and women different reasons for avoiding larger families. This is the case even when, for some, the ideal family size is three or more children.

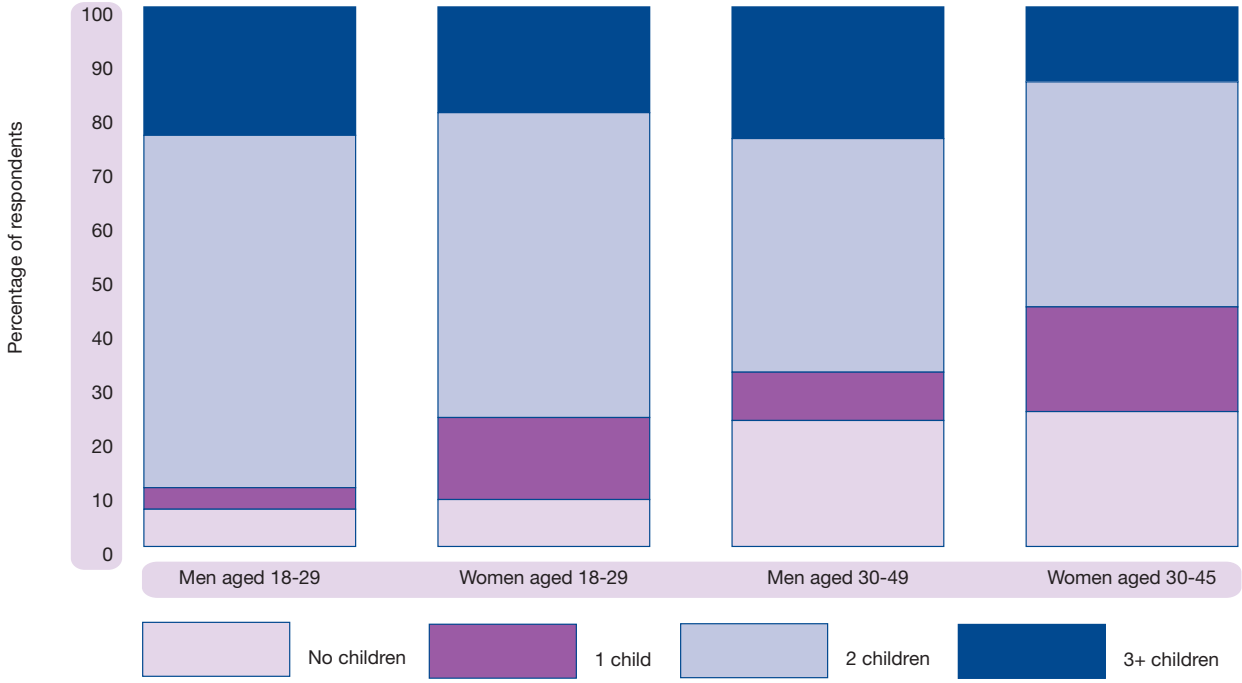
Figure 3.6 Percentage of people who agreed that 'it is difficult for both parents to work if they have more than two children'



Source: Scottish Social Attitudes Survey 2005

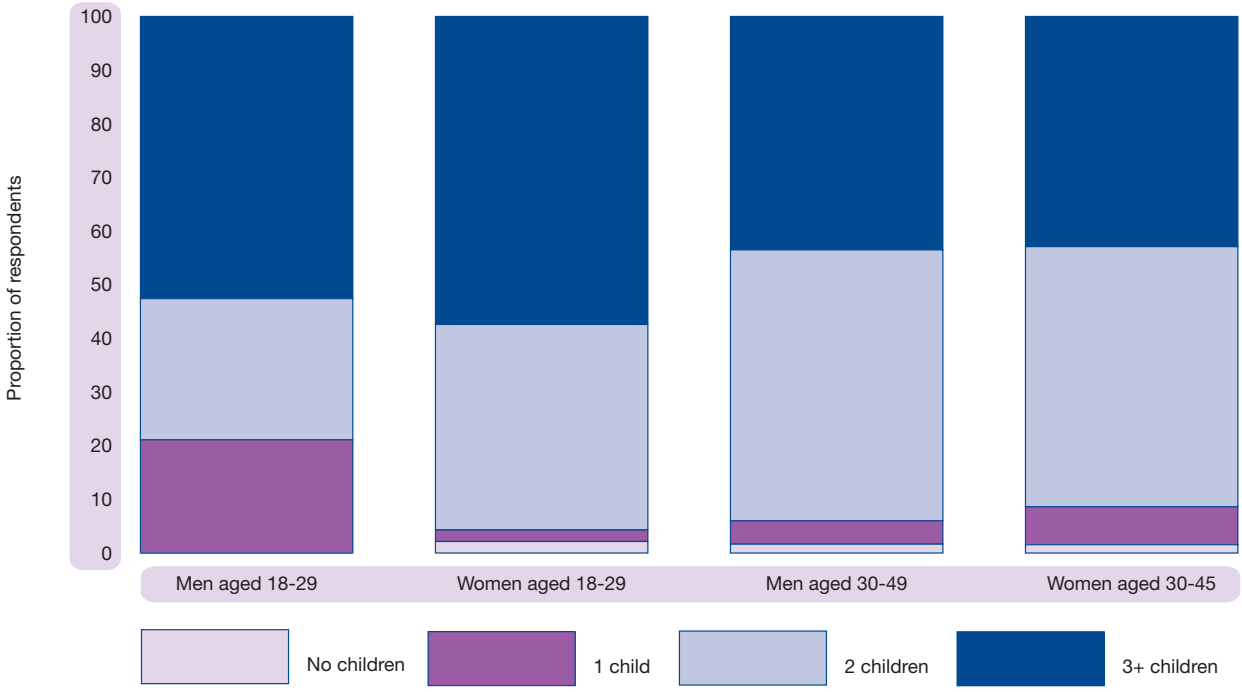
Overall, no significant gender differences in ideal family size were found, with the majority of both men and women regarding two or more children as ideal. However, there are some differences between the childless and those who already have children, and between those over and under age 30 (**Figures 3.7a** and **3.7b**). Among the childless the younger age group of both men and women were more likely to favour two children than were those in the older age group, while among those who have at least one child a notably higher percentage in both age groups reported three or more children as their ideal family size. Again caution is required here because of the small numbers of younger parents, but the pattern of revising family size ideals with age is suggested at least for those already committed to parenthood. Those who were still childless at aged 30 or over were more than twice as likely as the younger childless to say that their ideal was to have no children, although the majority still had an ideal of at least two.

Figure 3.7a People with no children: ideal family size



Source: Scottish Social Attitudes Survey 2005

Figure 3.7b People with at least one child: ideal family size



Source: Scottish Social Attitudes Survey 2005

Although men and women apparently share the same fertility ideals, the discussion of combining parenthood and employment has illustrated how this can nevertheless translate into different attitudes to possible advantages or disadvantages of a particular family size. This is again illustrated by attitudes to having an only child. While the majority of both men and women agreed that 'an only child can be just as happy as a child with siblings', rates of agreement were about 10% higher among men compared with women. The evidence reviewed from the SSAS 2005 suggests that men and women have slightly different concerns about the impact of a(nother) child. This may mean that, when acting as a couple, they have an additive effect, exacerbating the tendencies in each other to delay having children. The evidence, although not conclusive, supports the view that men and women are mutually reinforcing low fertility.

Our knowledge of the causes of low fertility is growing but uncertainties remain. It is not clear, for example, how the housing market and the labour market in Scotland influence men's and women's decisions to partner and to have, or not to have, children. The scope for debate is further increased when we consider the implications of demographic change in Scotland and whether or not a fertility policy should be contemplated.

The implications of demographic change

The latest population projections show how the age structure of the Scottish population is predicted to change over the next twenty-five years (see **Figure 1.7**, Chapter 1). They indicate a 7 per cent decline in both the 0-15 years and 16-29 years age groups between 2006 and 2031. The projected 10 per cent decline in the working age groups reflects earlier low fertility. In contrast, the retirement age groups are both projected to increase significantly, with those aged 75 and over rising by 81 per cent over the next quarter century. As we noted in the introduction, these projections also suggest that the overall size of Scotland's population will decline to below five million by around 2076.

Such changes in the size and age structure of the population have led many observers to suggest that population ageing and the speed with which it is happening in Scotland relative to the rest of the UK pose social and economic challenges that require policy makers to address the issue of fertility directly (Graham and Boyle 2004; Wilson and Rees 2003). However, others (MacInnes and Pérez 2007) have argued that low fertility and changes in the age structure of the population are better seen as part of a longer term shift in the demography of modern societies, and that any policies should be concentrated on the effects of this shift. Here we review some of the main aspects of this debate.

Dependency ratios

Dependency ratios compare the number of people of working age in the population to those below and above this age. In 2006, there were 59 dependents for every 100 people of working age in Scotland. Low fertility in the recent past means that this ratio will worsen as the baby-boomers of the 1950s and 1960s retire. Worries focus on the future care of older citizens, costs to the NHS and the relative decline in the size of the workforce in the face of increasing demands for young talent. The UK Government has already recognised the implications for the pensions system and has responded to this and other issues, such as gender equality, by redefining 'working age'. By 2046, state pension age will increase by stages from the current 60 years for women and 65 years for men to 68 years for both. Even taking these changes into account, by 2031, the dependency ratio is likely to be 67 dependents for every 100 people of working age, with a higher proportion of older people amongst them. Thus increasing the working life-span by at least three years will mitigate but not reverse the worsening dependency ratio.

Critics of dependency ratios argue that age itself is a poor guide to 'dependency' (MacInnes and Pérez 2007). The employment rate of working age women has almost doubled over the last forty years, few youngsters enter the labour market at 16 and only around one half of those in employment currently work until statutory retirement age or beyond, although men are more likely to retire early than women. Thus increasing this age may simply increase inequality by forcing the minority who cannot afford to retire early to work longer (MacInnes 2006). Although older people may not be economically active, they do large amounts of important unpaid work: in the UK, grandparents are the single most important source of childcare after parents themselves. Older people also transfer large amounts of money as well as time to the next generation. While the large rise in the proportion of the population who are very old will certainly increase the costs of the NHS and social services, such change is an inevitable consequence of improved life expectancy. As long as life expectancy continues to increase (in the decade to 2005 it rose by 2.5 years for men and 1.9 years for women in Scotland) increasing fertility cannot halt the shift in the age structure of the population.

A deficit of young talent in the labour market

The ageing population is likely to increase demand for certain services such as health care. This will result in a need to increase the numbers of trained doctors and nurses. Scotland will also need innovators and skilled IT workers to ensure a vibrant economy. The worry is that there will be a recruitment deficit in these key areas since continuing low fertility will reduce the numbers of younger people entering the workforce. Although there is much debate about the extent to which older workers can fill such gaps, some economists argue strongly that in many cases older-aged workers cannot provide a substitute for young talent (Wright 2002).

Critics of this pessimistic view argue that economies have always faced challenges posed by shifts in the age structure of the workforce and it may be misleading to draw conclusions about the advantages and disadvantages of different workforce age structures from how firms have behaved in the past. Labour shortages are often an important pressure towards innovation in human resource management, and developing new ways of managing human resources may be a less costly and more certain option than devoting resources to policies designed to increase fertility which, even if they were successful, would operate only in the long term.

Population decline and political influence

An additional, though less frequently expressed, worry concerns the implications of a decline in the total population of Scotland relative to the population of the rest of the UK. If Scotland's population share declines, then its political influence may also decline, especially if there is a reduction in the number of Scottish MPs at Westminster.

In the first half of the twentieth century, as governments realised that fertility was falling, many states pursued pro-natalist policies because they feared the military and political consequences of population decline (Teitelbaum and Winter 1985). However, apart from the ethical issues raised by such policies (especially when there is no global shortage of population), fertility behaviour has now become so firmly established as an individual and private matter that patriotic calls for larger families to boost a nation's influence are not likely to work. There may even be benefits associated with a declining population size. A smaller population might mean a reduction in environmental impact with less pressure on infrastructure, such as housing and roads. However, economic performance will be an important determinant of the capacity to invest in a greener future. If population decline reduces economic performance, for example, this could restrict the development of better public transport or alternative energy sources.

The case for a population policy

Worries such as these have already led to calls for a population policy for Scotland which would secure its economic and political future. When the Scottish Government outlined its economic strategy in November 2007, it set a target for the growth of "… our greatest asset, Scotland's people". The target is to ensure that population growth in Scotland matches average European (EU-15) growth over the period 2007 to 2017. There are a great many uncertainties about such a target, not least predicting the likely trend in fertility across fifteen European countries some of which, like France, currently have higher fertility than Scotland, whereas others, like Italy, currently have lower fertility (shown in **Figure 3.1**). Nevertheless, the implication is that meeting this target will require some growth in Scotland's population for it is clear that the Scottish Government sees population increase as a key contributor to a more vibrant society and a more dynamic economy.

To achieve population growth and ensure at least the current total population size in the longer term would require either a sustained increase in fertility or a year-on-year increase in net in-migration to Scotland, or both. The Scottish Government expects migration to continue to play a major role. The best strategy, however, might be a combination of more births and more migrants, although there are many limitations on the extent to which the Government can, or should, pursue such a goal. The *Fresh Talent* initiative, for example, has played only a small part in retaining young graduates for the Scottish employment market and, whilst migrants from Eastern Europe continue to fill gaps in local labour markets, their presence may prove temporary and thus not a long-term fix for Scotland's current demographic deficit. Introducing measures to encourage an increase in fertility may be even more problematic, although fertility increase is likely to be more effective as a way of reversing population ageing.

A fertility policy for Scotland?

The key question is: 'Can and should the Government intervene to reduce barriers to higher fertility?' Scotland's fertility level currently lies in what has been called the "safety zone" above 1.5 births per woman[6]. Nevertheless, Scotland experienced fertility below this level in the early years of the new millennium and it may be prudent to consider policies that would sustain or increase its present level (McDonald 2006). However, pro-natalist initiatives in other countries appear to have had limited or no success, although this is a matter of some debate. France and Sweden, for example, have family policies that encourage fertility but their TFRs remain below generational replacement level. While the incentives in France – with a TFR of 1.98 in 2006 – have arguably maintained fertility at a higher level than in many other European countries, the effect of incentives in Sweden is a matter of greater debate. TFR in Sweden fell below that in Scotland in the late 1990s but has been on an upward trajectory since the turn of the millennium and reached 1.85 births per woman in 2006 compared to 1.67 in Scotland. Further, Singapore introduced strong pro-natalist incentives two decades ago but their impact on national fertility was short-lived. Singapore now has one of the lowest fertility rates in the world with a TFR of just 1.26 in 2006.

6 The term "safety zone" is used by McDonald (2006) to refer to TFRs below replacement level but above 1.5.births per women. He argues that when fertility is in this zone, moderately below replacement level, the size of the subsequent generation will fall only slowly and that there is an opportunity to supplement generation size with migration. However, when TFR falls below 1.5 and remains below the "safety zone", generation size will fall rapidly and very substantial migration would be required to offset population decline.

There is widespread agreement that direct Government intervention in the fertility decisions of couples in Scotland is as undesirable as it is likely to be ineffective. However, there is vigorous debate about whether or not a more indirect approach to influencing future fertility ought to be contemplated. We end the chapter by presenting two different, but not mutually exclusive, conclusions, which reflect the scope of the debate.

Conclusion 1: a family-friendly Scotland

A modest increase in fertility would slow population ageing in Scotland and be good for the economy and Scotland's position in the UK in the longer term. However, the lesson to be learned from other countries where pro-natalist policies have been introduced is that any policy measure aimed at increasing fertility could involve considerable costs for little return. Where an economy depends on dual-earning couples, it is difficult for the Government to intervene successfully in order to increase fertility. There are policies, however, that have benefits other than fertility increase but which might provide indirect incentives to Scottish couples to have a(nother) child. The recent extension of paid maternity leave in the UK, for example, may further encourage the upturn of fertility evident in the past few years. More generally, making it easier for couples to work and raise families at the same time is a worthwhile policy aim, which could help to maintain or even increase fertility.

Indirect incentives to increase fertility will only have a positive impact if they remove perceived barriers to having (more) children, with the aim of ensuring that Scottish couples fulfil their fertility goals. All the evidence suggests that most couples in Scotland want at least two children, yet revise their fertility goals downwards as they grow older. There are likely to be multiple reasons for this revision, including responses to the expense and practical difficulties associated with having children. Nevertheless, and despite recent legislation designed to make workplaces more family friendly, there remain significant barriers to combining employment and family, especially for women. The geographical separation of home, workplace and childcare is one of these. As a first step, therefore, the Scottish Government could consider broader measures that would create a family-friendly environment throughout Scotland, but especially in the cities. Keeping families in the cities would reduce commuting times and make it easier for parents to combine work and family life. This would have the advantage of creating more balanced local communities but it might also encourage couples to have the number of children they want.

Finally, TFR in Scotland, though below the level recorded for England, continued to edge upwards in 2007. It is too early to say whether this trend will be sustained or what the influence of recently introduced family-friendly policies might have been. The rise in annual fertility could be the result of shifts in the timing of births rather than an indication that future completed family size will be larger than it has been in the recent past. On the other hand, if the upward trend does continue and indeed is encouraged by new family-friendly policy initiatives, then many of the worries associated with population ageing and decline could be resolved.

Conclusion 2: managing the effects of population change

What often appear as barriers to higher fertility can also be seen as the result of the new freedom in modern societies of potential parents, especially mothers, to choose how many children they want. Over the last fifty years, most barriers to alternatives to motherhood for women have been dismantled. Discrimination by sex in employment and education is unlawful. Family, divorce and abortion law have been reformed. Social norms no longer reduce femininity to domesticity and motherhood, and beliefs about what is appropriate for men and women will continue to change. Parents have rising aspirations for their children, investing increasing time and resources in them. However, although dual-earner families are now the norm and people believe in the ideal of gender equality, women continue to carry a greater burden of parenting obligations and of reconciling them with employment.

This new social context explains why pro-natalist policies are often expensive failures. Rather than trying to increase fertility directly, the emphasis should be placed on policies that are children-friendly in the widest sense, so that some of the burdens and responsibilities of parenthood are shared, and which bring social benefits regardless of whether fertility rises (Folbre 1997). Policy ought to promote gender equality in parenting. Many countries with very low fertility are those where women's equality has progressed the least. Although alternatives to motherhood have opened up for women, men have not moved as quickly to assume an equal share of parenting work. Work-life balance policies aimed at fathers could encourage this.

Finally, policies ought to concentrate on managing the impact of changes in the age structure of the population, including the population of working age. Firms should be supported to innovate in human resource management. Increases in the costs of care for the very old are inevitable. The difficult question is how inter-generational transfers of resources should be managed. To the extent that elder care is provided by the state, taxes will have to rise, which raises economic and political questions. On the other hand, if the inter-generational transmission of wealth occurs mostly within families, this will become an increasingly important factor in social inequality. Population ageing is in part the result of welcome increases in life expectancy that even large, and unsustainable, increases in fertility cannot avert. Fertility itself should not be a policy objective, especially if the underlying objective is to pursue population growth for its own sake. Managing population change certainly should be.

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Table 1 Population and vital events, Scotland, 1855 to 2007

Year	Estimated population ('000s)	Live births[1]		Stillbirths[2]		Infant deaths		Deaths		Marriages	Divorces
		Number	Rate[3]	Number	Rate[4]	Number	Rate[5]	Number	Rate[3]		
1855-60	3,018.4	102,462	34.1	...	...	12,250	119.6	62,644	20.8	20,645	19
1861-65	3,127.1	109,764	35.1	...	...	13,166	119.9	69,265	22.1	22,013	14
1866-70	3,275.6	114,394	34.9	...	...	13,971	122.1	71,974	22.0	22,832	9
1871-75	3,441.4	120,376	35.0	...	...	15,314	127.2	77,988	22.7	25,754	24
1876-80	3,628.7	126,086	34.8	...	...	14,921	118.3	74,801	20.6	24,956	54
1881-85	3,799.2	126,409	33.3	...	...	14,864	117.6	74,396	19.6	26,176	74
1886-90	3,943.9	123,977	31.4	...	...	14,943	120.5	74,320	18.8	25,702	94
1891-95	4,122.5	125,800	30.5	...	...	15,895	126.4	78,350	19.0	27,962	115
1896-1900	4,345.1	130,209	30.0	...	...	16,857	129.5	78,021	17.9	31,771	146
1901-05	4,535.7	132,399	29.2	...	...	15,881	119.9	77,313	17.1	31,838	181
1906-10	4,679.9	128,987	27.6	...	...	14,501	112.4	75,534	16.1	31,811	195
1911-15	4,748.3	120,654	25.4	...	...	13,604	112.8	74,466	15.7	33,857	264
1916-20	4,823.8	109,750	22.8	...	...	10,869	99.0	72,365	15.0	37,437	531
1921-25	4,879.6	112,245	23.0	...	...	10,299	91.8	67,652	13.9	34,720	427
1926-30	4,845.1	96,674	20.0	...	...	8,260	85.4	66,017	13.6	32,605	478
1931-35	4,905.1	89,306	18.2	...	...	7,212	80.8	64,839	13.2	34,986	507
1936-40	4,956.8	87,734	17.6	...	...	6,650	75.8	67,166	13.5	42,941	750
1941-45	4,711.9	91,593	19.4	3,393	35.7	6,202	67.7	66,302	13.8	43,772	1,413
1946-50	5,054.3	101,222	20.0	3,047	29.2	4,789	47.3	63,854	12.6	43,206	2,435
1951-55	5,103.6	91,366	17.9	2,390	25.5	3,009	32.9	61,838	12.1	41,718	2,274
1956-60	5,145.2	98,663	19.2	2,307	22.9	2,755	27.9	61,965	12.0	41,671	1,792
1961-65	5,201.0	102,642	19.7	2,000	19.1	2,568	25.0	63,309	12.2	40,235	2,253
1966-70	5,204.3	93,033	17.9	1,415	15.0	1,970	21.2	62,797	12.1	42,832	4,056
1971-75	5,234.7	75,541	14.4	939	12.3	1,421	18.8	63,808	12.2	41,404	6,604
1976-80	5,213.9	65,758	12.6	529	8.0	900	13.7	64,343	12.3	37,801	9,068
1981-85[6]	5,151.9	66,422	12.9	389	5.8	695	10.5	63,723	12.4	35,756	11,941
1986-90[6]	5,089.5	65,544	12.9	350	5.3	550	8.4	62,796	12.3	35,440	12,067
1991-95[6]	5,093.5	63,571	12.5	382	6.0	418	6.6	61,171	12.0	32,866	12,548
1996-2000[6]	5,077.5	56,856	11.2	327	5.7	316	5.6	59,478	11.7	29,965	11,984
2001	5,064.2	52,527	10.4	301	5.7	290	5.5	57,382	11.3	29,621	10,631
2002	5,054.8	51,270	10.1	278	5.4	270	5.3	58,103	11.5	29,826	10,826
2003	5,057.4	52,432	10.4	296	5.6	265	5.1	58,472	11.6	30,757	10,928
2004	5,078.4	53,957	10.6	317	5.8	266	4.9	56,187	11.1	32,154	11,227
2005	5,094.8	54,386	10.7	292	5.3	284	5.2	55,747	10.9	30,881	10,940
2006	5,116.9	55,690	10.9	296	5.3	248	4.5	55,093	10.8	29,898	13,014
2007	5,144.2	57,781	11.2	327	5.6	272	4.7	55,986	10.9	29,866	12,773

1 Live births only, prior to 1939.
2 See Notes and Definitions.
3 Rate per 1,000 population.
4 Rate per 1,000 live and still births.
5 Rate per 1,000 live births.
6 Population and corresponding rates for 1982-2000 are based on revised population estimates for 1982-2000 which were revised to take account of the final Census-based population estimates for 2001.

Table 2 Estimated population, births, stillbirths, deaths and marriages, numbers and rates, by Council area, Scotland, 2007

Area	Estimated population at 30 June	Live births			Stillbirths[2]		Infant deaths		Deaths			Marriages	Partnerships
		Number	Rate[1]	Standard-ised Rate	Number	Rate[2]	Number	Rate[3]	Number	Rate[1]	Standard-isedCivil Rate		
SCOTLAND	**5,144,200**	**57,781**	**11.2**	**11.2**	**327**	**5.6**	**272**	**4.7**	**55,986**	**10.9**	**10.9**	**29,866**	**688**
Council areas													
Aberdeen City	209,260	2,417	11.6	10.2	19	7.8	5	2.1	2,180	10.4	10.8	897	26
Aberdeenshire	239,160	2,690	11.2	13.1	8	3.0	11	4.1	2,195	9.2	9.3	1,299	16
Angus	109,870	1,152	10.5	12.9	6	5.2	6	5.2	1,296	11.8	10.2	448	8
Argyll & Bute	91,350	741	8.1	11.3	3	4.0	3	4.0	1,135	12.4	10.3	903	14
Clackmannanshire	49,900	634	12.7	13.5	4	6.3	0	0.0	471	9.4	10.3	179	0
Dumfries & Galloway	148,300	1,507	10.2	13.1	6	4.0	9	6.0	1,866	12.6	10.2	5,476	49
Dundee City	142,150	1,668	11.7	10.8	12	7.1	13	7.8	1,643	11.6	10.5	483	15
East Ayrshire	119,570	1,304	10.9	11.7	8	6.1	14	10.7	1,407	11.8	11.7	378	2
East Dunbartonshire	104,850	892	8.5	10.6	8	8.9	3	3.4	1,004	9.6	9.1	312	9
East Lothian	94,440	1,101	11.7	13.7	3	2.7	3	2.7	1,028	10.9	10.1	419	10
East Renfrewshire	89,260	893	10.0	12.4	3	3.3	6	6.7	854	9.6	9.1	393	4
Edinburgh, City of	468,070	5,056	10.8	8.1	31	6.1	22	4.4	4,293	9.2	9.7	2,638	190
Eilean Siar	26,300	263	10.0	12.9	1	3.8	2	7.6	367	14.0	11.1	100	0
Falkirk	150,720	1,892	12.6	12.5	7	3.7	6	3.2	1,620	10.7	11.4	751	6
Fife	360,500	4,076	11.3	11.8	23	5.6	26	6.4	3,780	10.5	10.1	1,817	38
Glasgow City	581,940	7,154	12.3	9.7	60	8.3	46	6.4	7,002	12.0	13.7	2,279	152
Highland	217,440	2,332	10.7	12.8	15	6.4	4	1.7	2,419	11.1	10.3	1,663	18
Inverclyde	81,080	857	10.6	11.5	4	4.6	9	10.5	1,023	12.6	12.0	250	4
Midlothian	79,510	937	11.8	12.8	4	4.3	3	3.2	796	10.0	10.3	542	7
Moray	86,870	1,001	11.5	14.3	5	5.0	4	4.0	947	10.9	10.3	453	6
North Ayrshire	135,760	1,528	11.3	12.3	7	4.6	9	5.9	1,664	12.3	11.8	724	13
North Lanarkshire	324,680	4,045	12.5	12.1	19	4.7	16	4.0	3,558	11.0	12.8	1,025	4
Orkney Islands	19,860	190	9.6	11.9	0	0.0	1	5.3	255	12.8	11.5	97	0
Perth & Kinross	142,140	1,391	9.8	11.7	7	5.0	6	4.3	1,577	11.1	9.4	1,172	14
Renfrewshire	169,600	1,898	11.2	11.5	11	5.8	5	2.6	1,887	11.1	11.5	521	7
Scottish Borders	111,430	1,170	10.5	13.3	2	1.7	3	2.6	1,299	11.7	10.0	750	17
Shetland Islands	21,950	244	11.1	12.6	1	4.1	2	8.2	209	9.5	9.4	83	0
South Ayrshire	111,690	1,029	9.2	11.1	12	11.5	6	5.8	1,388	12.4	10.1	798	15
South Lanarkshire	309,500	3,452	11.2	11.5	19	5.5	14	4.1	3,440	11.1	11.6	1,172	13
Stirling	88,190	878	10.0	10.4	5	5.7	3	3.4	890	10.1	10.1	754	13
West Dunbartonshire	91,090	1,105	12.1	12.2	1	0.9	1	0.9	1,122	12.3	12.7	414	8
West Lothian	167,770	2,284	13.6	13.2	13	5.7	11	4.8	1,371	8.2	10.7	676	10

1 Rate per 1,000 population.
2 Rate per 1,000 live and still births.
3 Rate per 1,000 live births.

Table 3 International populations and vital statistics rates, selected countries, latest available figures

Country	Estimated population ('000s)		Live births per 1,000 population		Stillbirths[2] per 1,000 total births (live & still)		Infant mortality per 1,000 live births		Deaths per 1,000 population		Marriages per 1,000 population	
	Year	Population	Year	Rate	Year	Rate	Year	Rate	Year	Rate	Year	Rate
Scotland	2007	**5,144**	2007	**11.2**	2007	**5.6**	2007	**4.7**	2007	**10.9**	2007	**5.8**
European Union												
Austria	2007	8,299	2006	9.4	2006	4.0	2006	3.6	2006	9.0	2007	4.3
Belgium	2007	10,585	2005	11.3	1997	4.7	1997	5.6	1998	10.2	2007	4.3
Bulgaria	2007	7,679	2004	9.0	2006	6.9	2004	11.7	2005	14.6	2007	3.9
Cyprus	2007	779	2005	10.9	…	…	2004	3.0	2006	6.6	2007	7.5
Czech Republic	2007	10,287	2005	10.0	2006	2.8	2005	3.4	2006	10.2	2007	5.5
Denmark	2007	5,444	2004	11.9	2004	5.1	2001	4.6	2001	10.8	2007	6.7
Estonia	2007	1,342	2005	10.7	2006	3.8	2005	5.4	2006	12.9	2007	5.2
Finland	2007	5,277	2005	11.0	2005	3.2	2005	3.1	2006	9.1	2007	5.6
France	2007	63,392	2004	12.7	2001	4.8	2004	3.9	2005	8.6	2007	4.2
Germany	2007	82,315	2004	8.6	2006	3.6	2004	4.1	2006	10.0	2007	4.5
Greece	2007	11,172	2006	10.1	2006	3.3	2006	3.7	2006	9.4	2007	5.2
Hungary	2007	10,066	2005	9.7	2006	4.9	2005	6.2	2006	13.1	2007	4.1
Irish Republic	2007	4,313	2005	14.8	2004	5.2	2005	4.0	2006	6.4	2006	5.1
Italy	2007	59,131	2005	9.5	2004	2.5	2002	4.4	2003	10.2	2007	4.2
Latvia	2007	2,281	2006	9.8	2006	6.6	2006	7.6	2006	14.5	2007	6.8
Lithuania	2007	3,385	2005	9.0	2006	4.4	2005	6.8	2006	13.2	2007	6.8
Luxembourg	2007	476	2005	11.8	2005	4.1	2005	2.6	2005	7.9	2007	4.1
Malta	2007	408	2005	9.6	2006	2.6	2005	6.0	2005	7.8	2007	6.1
Netherlands	2007	16,358	2005	11.5	2006	3.5	2004	4.4	2006	8.3	2007	4.5
Poland	2007	38,125	2005	9.6	2005	4.7	2005	6.4	2006	9.7	2007	6.5
Portugal	2007	10,599	2005	10.4	2005	4.0	2004	3.9	2005	10.2	2007	4.4
Romania	2007	21,565	2006	10.2	2006	5.2	2006	13.9	2006	12.0	2007	8.8
Slovakia	2007	5,394	2005	10.1	2006	4.0	2005	7.2	2006	9.9	2007	5.1
Slovenia	2007	2,010	2006	9.4	2006	4.3	2006	3.4	2006	9.1	2007	3.2
Spain	2007	44,475	2005	10.8	2005	3.1	2005	3.8	2006	8.4	2006	4.6
Sweden	2007	9,113	2005	11.2	2004	3.3	2004	3.2	2005	10.2	2007	5.2
United Kingdom[1]	2006	60,393	2005	12.0	2004	5.5	2005	5.1	2005	10.0	2006	4.5
Other Europe												
Croatia	2007	4,441	2006	9.3	2006	4.4	2006	5.2	2006	11.3	2006	5.0
Macedonia	2007	2,042	2005	11.0	2003	8.5	2003	11.3	2006	9.1	2007	7.6
Norway	2007	4,681	2005	12.3	2006	5.7	2005	3.1	2006	8.8	2007	5.0
Switzerland	2007	7,509	2005	9.8	2006	4.6	2004	4.2	2005	8.2	2007	5.3
Turkey	2007	69,689	2005	18.9	2006	13.8	2004	28.0	1998	6.3	2006	9.1

Sources: Eurostat, WHO/Europe and the Office for National Statistics.

1 Excludes Isle of Man and Channel Islands.
2 The definition of a stillbirth varies from country to country and over time. The position in the UK is described in the Notes and Definitions.
… Figures not available.

APPENDIX 2 – NOTES AND DEFINITIONS

This Appendix gives general notes on some of the data and conventions used in this report as well as providing definitions for some of the terminology used.

GENERAL

– tabular conventions

Where a range of years is listed in a time series table (e.g. 1951-55), the data presented will be an average for this period.

Throughout the tables 'year' means 'calendar year' except where otherwise defined. By convention, many of the time series presented start at census years (e.g. 1991).

– date of registration and place of occurrence

All the data presented on births, stillbirths, marriages and deaths relate to the date of registration of the event and not to the date of occurrence. For example, a birth on 31 December 2006 which was registered on 4 January 2007 would be included in the 2007 figures. Births and stillbirths are usually registered within the statutory period of 21 days. Similarly, marriages are usually registered within 3 days and deaths within 8 days.

Births, stillbirths, and deaths have been allocated to the area of usual residence if it is in Scotland, otherwise to the area of occurrence. Marriage figures relate to the area of occurrence.

– age standardisation

A straight comparison of crude rates between areas may present a misleading picture because of differences in the sex and age structure of the respective populations. The technique of standardisation has been used in certain tables and charts to remedy this. In general, standardisation involves a comparison of the actual number of events occurring in an area with the aggregate number expected if the age/sex specific rates in the standard population were applied to the age/sex groups of the observed population. In this report, age standardisation has been carried out using the overall Scottish population of the time period under investigation as the standard.

– lists of groups of countries

EU-15: Before 1 May 2004 Member States of the European Union were Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and United Kingdom.

EU-25: From 1 May 2004 to 31 December 2006 Member States were EU-15 (listed above) plus Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovenia and Slovakia.

EU-27: From 1 January 2007 Member States are EU-25 (listed above) plus Bulgaria and Romania.

POPULATION

All population figures refer to estimates at 30 June of the year in question.

– population covered

The resident population of an area includes all those usually resident there whatever their nationality. Students are treated as being resident at their term-time address. Members of HM Forces and non-UK armed forces stationed in Scotland are included. HM Forces stationed outside Scotland are excluded.

– age

Ages relate to age last birthday.

– population projections

Population projections for Scotland are prepared by the Government Actuary, at the request of and in consultation with the Registrar General. The latest national projection was the 2006-based projections published in October 2007.

MIGRATION

Net migration figures incorporate estimates of net civilian migration which include movements to and from the Armed Forces but exclude other changes, such as changes in the numbers of Armed Forces stationed in Scotland.

– UK regions

The regions of the UK are taken as Scotland, Wales, Northern Ireland and the Government Office Regions of England. A map can be found at http://www.statistics.gov.uk/geography/gor.asp

BIRTHS

– general fertility rate (GFR)

The number of births per 1,000 women of childbearing age (15-44).

– total fertility rate (TFR)

The average number of children that would be born to a cohort of women who experienced, throughout their childbearing years, the fertility rates of the calendar year in question.

– age specific fertility rate (ASFR)

The number of births per individual for a specific age during a specified time.

– cohort

A well-defined group of people who have had a common experience or exposure who are observed through time. For example, the birth cohort of 1976 refers to people born in that year.

– marital status of parents

Married parents: refers to parents who are married to each other.
Unmarried parents: refers to parents who are unmarried, or married but not to each other.

DEATHS

– cause-of-death coding

From 1 January 2000, deaths in Scotland have been coded in accordance with the International Statistical Classification of Diseases and Related Health Problems (Tenth Revision) (ICD10). Classification of underlying cause of death is based on information collected on the medical certificate of cause of death together with any additional information provided subsequently by the certifying doctor. Changes notified to the General Register Office for Scotland by Procurators Fiscal are also taken into account. Additional information about suicides is supplied by the Crown Office.

– expectation of life

The average number of additional years a person could expect to live if current mortality trends were to continue for the rest of that person's life. Most commonly cited as life expectancy at birth.

– stillbirth

Section 56(1) of the Registration of Births, Deaths and Marriages (Scotland) Act 1965 defined a stillbirth as a child which had issued forth from its mother after the 28th week of pregnancy and which did not breathe or show any other sign of life. The Still-Birth (Definition) Act 1992, which came into effect on 1 October 1992, amended Section 56(1) of the 1965 Act (and other relevant UK legislation), replacing the reference to the 28th week with a reference to the 24th week.

– perinatal deaths

Refers to stillbirths and deaths in the first week of life.

– infant deaths

Refers to all deaths in the first year of life.

MARRIAGES

Civil marriages were introduced by the Marriage (Scotland) Act 1939, which came into operation on 1 July 1940. Each year a small number of 'irregular' marriages (generally fewer than 10) are established by Decree of the Declarator of the Court of Session.

CIVIL PARTNERSHIPS

The Civil Partnership Act 2004, which applies throughout the UK, came into force on 5 December 2005. The Act enables same-sex couples aged 16 and over to obtain legal recognition of their relationship. In Scotland, the first civil partnership was registered on 20 December 2005.

DIVORCES

The data presented on divorces relate to the date on which the decrees were granted.

In legal terms the Divorce (Scotland) Act 1976 introduced a single ground for divorce – irretrievable breakdown of marriage – with the detailed reasons as 'proofs'. However, the information presented in this report on reasons for divorce retains the terminology 'grounds for divorce'.

The grounds for divorce were amended by the Family Law (Scotland) Act 2006 which came into effect on 4 May 2006. The Act reduced the separation periods for divorce with consent to one year (previously two years) and without consent to two years (previously five years). It also removed 'desertion' as a ground.

ADOPTIONS

The Registrar General for Scotland registers adoptions under the Adoption of Children (Scotland) Act 1930.

HOUSEHOLDS AND HOUSING

Like population projections, household projections are produced every two years, and are mainly used for informing decisions about future housing need and service provision. The latest household projections, covering the period 2006 to 2031, incorporate the results of the 2006-based population projections. They also incorporate information from the last two Censuses, to project trends in household formation by type of household and the age of the head of household. The head of household is defined in the Census as the first person on the Census form who is aged 16 or over and is usually resident at the address in question.

The projections provide an indication of what would happen if past trends continue. They do not take account of policy initiatives, or other factors that may affect future populations. Projections for small groups are likely to be less reliable than those for larger groups.

Household estimates and projections publications are available from http://www.gro-scotland.gov.uk/statistics/household-estimates-projections/index.html.

NATIONAL STATISTICS

This is a National Statistics publication. It has been produced to high professional standards set out in the National Statistics Code of Practice and Release Practice Protocol (http://www.statistics.gov.uk/about_ns/cop/default.asp). These statistics undergo regular quality assurance reviews to ensure that they meet customer needs. They are produced free from any political interference. Details of pre-release access are provided on the General Register Office for Scotland website under 'Future Publications'.

GENERAL REGISTER OFFICE FOR SCOTLAND

The General Register Office for Scotland (GROS) is the department of the devolved Scottish Administration responsible for the registration of births, marriages, civil partnerships, deaths, divorces and adoptions in Scotland. We are responsible for the Census of Population in Scotland which we use, with other sources of information, to produce population and household statistics. We make available important information for family history. Our website is http://www.gro-scotland.gov.uk.

Our aim is to provide relevant and reliable information, analysis and advice that meet the needs of government, business and the people of Scotland.

Our objectives are:

To produce statistics and analysis relevant to user needs by

- Developing the range of statistics and analysis we produce.
- Where practicable improving timeliness.
- Providing more statistics disaggregated by age, gender and ethnicity.
- Developing more data for small areas through the Neighbourhood Statistics project.
- Contributing to production of comparable statistics across the UK and internationally.

To ensure effective use of our statistics by

- Contributing more directly to policy processes inside and, where possible, outside government.
- Improving access to and presentation of data and analysis.
- Improving the advice provided on statistics.

To work effectively with users and providers by

- Maintaining arrangements to consult and involve users and providers.
- Involving users and providers in planning developments in outputs and processes.

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- Assuring and improving quality as an integral part of data collection and analysis and through regular reviews in line with National Statistics quality strategy.
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- Working with the rest of the Government Statistical Service to develop joint approaches/solutions where appropriate.

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- Making best use of all sources including administrative sources.
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- Ensuring value for money.
- Making best use of information and communications technology.
- Working with other analysts.
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To develop our workforce and competences

- Ensuring recruitment of staff with the necessary skills and potential.
- Ensuring development of expertise amongst existing staff.
- Promoting and upholding the standards of the statistics profession.

Enquiries about this publication should be addressed to: Statistics Customer Services, General Register Office for Scotland, Ladywell House, Edinburgh EH12 7TF.
Telephone: (0131) 314 4299, Fax: (0131) 314 4696, E-mail: customer@gro-scotland.gsi.gov.uk

Further detailed statistics produced by GROS are available from the Statistics Section on the GROS website (http://www.gro-scotland.gov.uk/statistics/index.html). Statistics from the 2001 Census are on Scotland's Census Results On-Line website (http://www.scrol.gov.uk) and on the Census section of the main website (http://www.gro-scotland.gov.uk/statistics/census/index.html).

Information about future publications is provided on the GROS website (http://www.gro-scotland.gov.uk/futurepb.html). If you would like to receive notification of forthcoming statistical publications, you can register your interest on the Scottish Government ScotStat website at http://www.scotland.gov.uk/scotstat.

If you are not satisfied with our service, please write to *Kirsty MacLachlan, Head of Demography Division, General Register Office for Scotland, Room 1/2/7, Ladywell House, Ladywell Road, Edinburgh EH12 7TF.*
Telephone: (0131) 314 4242, E-mail: kirsty.maclachlan@gro-scotland.gsi.gov.uk.

We also welcome any comments or suggestion that would help us to improve our standards of service.

RELATED ORGANISATIONS

ORGANISATION	CONTACT
The SCOTTISH GOVERNMENT (SG) forms the bulk of the devolved Scottish Administration. The aim of the statistical service in the SG is to provide relevant and reliable statistical information, analysis and advice that meets the needs of government, business and the people of Scotland.	*Office of the Chief Statistician, Scottish Government, 3rd Floor West Rear, St Andrew's House, Edinburgh EH1 3DG* Telephone: (0131) 244 0442 Fax: (0131) 244 0335 E-mail: statistics.enquiries@scotland.gsi.gov.uk Website: http://www.scotland.gov.uk/Topics/Statistics
The OFFICE FOR NATIONAL STATISTICS (ONS) is responsible for producing a wide range of economic and social statistics. It also, for England and Wales, registers life events and holds the Census of Population.	*Customer Contact Centre, Room 1.015, Office for National Statistics, Cardiff Road, Newport NP10 8XG* Telephone: 0845 601 3034 Minicom: 01633 812399 Fax: 01633 652747 E-mail: info@statistics.gsi.gov.uk Website: www.ons.gov.uk
The NORTHERN IRELAND STATISTICS AND RESEARCH AGENCY (NISRA) is Northern Ireland's official statistics organisation. The Agency also has responsibility, in Northern Ireland, for the registration of births, marriages, adoptions and deaths and the Census of Population.	*Northern Ireland Statistics and Research Agency, McAuley House, 2-14 Castle Street, Belfast BT1 1SA* Telephone 028 9034 8100 Fax 028 9034 8106 Website: www.nisra.gov.uk

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