The Demographic Transition in Ireland in International Context

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Introduction

The demography of Ireland has been unique in Europe since the nineteenth century. Its demographic transition is still incomplete. But rapid convergence is now taking place which is bringing the Irish demographic regime closely in line with that of the rest of Europe. Mortality is already about the EC average. In 1991, for the first year ever, Irish fertility fell to replacement level. The peculiarities of the past, the delayed inception of changes, and its subsequent rapid pace, are all difficult to explain. Ireland’s demography challenges demographic theory. It cannot adequately account for Irish exceptionalism; it did not forecast the timing of its convergence with modern demographic regimes. Now, at the end of the twentieth century, Irish population is rejoining the mainstream. This demographic change is but an outward sign of inward changes in Irish society itself. This paper cannot account for Ireland’s demography. That would require substantial empirical comparative analysis, with appropriate modelling. The aims of this paper are modest. It compares Ireland’s recent demography with its neighbours, and considers some hypotheses that might explain observed trends.

Data

Demographic data on Ireland are poor. As far as population size is concerned, contemporary estimates began with William Petty in 1697. The first census was held in 1821, but censuses were not considered to be reliable until that of 1841, the first to be based on a household canvass.

Read 7 December 1990. © The British Academy 1992
Figure 1. Age distribution of the population of Ireland, per cent, 1901. Source: Census of Ireland (1901) Part II General report, table 15.

Even so, characteristic digit preference errors (favouring years ending in 0) are clearly evident even in the 1901 population (Figure 1). These and other data formed the basis for the major analysis of Irish historical demography by Connell (1950). More recent research has revised his pre-1841 population figures but, it seems, in doing so reinforced his model of pre-famine Irish population as one where high rates of increase were driven by early marriage and high fertility (Clarkson, 1981).

The parish registers of baptisms, burials and marriages, so useful to historical demographers elsewhere since Henry's technical innovations, scarcely exist in usable form in Ireland. Civil registration of births, marriages and deaths did not begin until 1851 and the returns are incomplete. There are also serious difficulties, up to the end of the nineteenth century, in relating aggregate vital events (births, marriages and deaths) to the local populations at risk (Teitelbaum, 1984). In the twentieth century both census and vital registration have been much improved. But there was no census in 1921 and since then two series of data, for the Irish Republic and for Northern Ireland, have complicated study. However, they have also created a natural experiment for testing hypotheses about similar populations which differ in known ways. Official demographic data routinely published for the Republic and for Northern Ireland are very limited compared to those available for most Western countries. For example, annual fertility data for Northern Ireland are not
Table 1. Demographic comparison of Ireland with 36 industrial countries.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Ireland</th>
<th>Coeff. of variation *100</th>
<th>Median</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population (millions)</td>
<td>3.6</td>
<td>35.3</td>
<td>177.8</td>
<td>12.7</td>
</tr>
<tr>
<td>Density (per sq kilometre)</td>
<td>52.0</td>
<td>416.8</td>
<td>267.0</td>
<td>116.5</td>
</tr>
<tr>
<td>Population growth rate /000</td>
<td>-0.9</td>
<td>6.2</td>
<td>73.0</td>
<td>5.2</td>
</tr>
<tr>
<td>Natural increase /000</td>
<td>8.1</td>
<td>4.7</td>
<td>86.0</td>
<td>3.8</td>
</tr>
<tr>
<td>Proportion &lt; age 15 /000</td>
<td>289.0</td>
<td>215.9</td>
<td>15.7</td>
<td>213.0</td>
</tr>
<tr>
<td>Proportion ≥ age 65 /000</td>
<td>109.0</td>
<td>116.6</td>
<td>26.2</td>
<td>122.0</td>
</tr>
<tr>
<td>Total Fertility Rate</td>
<td>234.0</td>
<td>179.0</td>
<td>16.3</td>
<td>173.5</td>
</tr>
<tr>
<td>Completed Family Size</td>
<td>265.0</td>
<td>197.1</td>
<td>8.8</td>
<td>192.0</td>
</tr>
<tr>
<td>Age at first birth</td>
<td>25.8</td>
<td>25.6</td>
<td>4.4</td>
<td>25.8</td>
</tr>
<tr>
<td>Proportion 1st births /000</td>
<td>313.0</td>
<td>430.9</td>
<td>8.6</td>
<td>438.5</td>
</tr>
<tr>
<td>Proportion 2nd births /000</td>
<td>258.0</td>
<td>353.5</td>
<td>6.5</td>
<td>357.0</td>
</tr>
<tr>
<td>Proportion 3rd births /000</td>
<td>185.0</td>
<td>142.5</td>
<td>17.0</td>
<td>137.0</td>
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<tr>
<td>Proportion 4th+ births /000</td>
<td>243.0</td>
<td>66.5</td>
<td>34.8</td>
<td>64.5</td>
</tr>
<tr>
<td>Illegitimacy ratio</td>
<td>126.0</td>
<td>176.7</td>
<td>83.7</td>
<td>133.0</td>
</tr>
<tr>
<td>Age at first marriage bachelors</td>
<td>27.9</td>
<td>27.0</td>
<td>4.5</td>
<td>27.0</td>
</tr>
<tr>
<td>Age at first marriage spinsters</td>
<td>25.8</td>
<td>24.7</td>
<td>5.2</td>
<td>24.6</td>
</tr>
<tr>
<td>Births to mothers aged &gt;30 /000</td>
<td>458.0</td>
<td>275.9</td>
<td>34.4</td>
<td>262.5</td>
</tr>
<tr>
<td>Abortion ratio /000 live births</td>
<td>69.0</td>
<td>281.8</td>
<td>66.0</td>
<td>221.0</td>
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<tr>
<td>Divorces /10000 married</td>
<td>0.0</td>
<td>82.8</td>
<td>52.0</td>
<td>85.0</td>
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<tr>
<td>Infant Mortality Rate /000</td>
<td>7.8</td>
<td>11.2</td>
<td>53.8</td>
<td>9.0</td>
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<tr>
<td>expectation of life at birth (m)</td>
<td>70.1</td>
<td>71.0</td>
<td>3.8</td>
<td>71.5</td>
</tr>
<tr>
<td>expectation of life at birth (f)</td>
<td>75.6</td>
<td>77.3</td>
<td>3.1</td>
<td>77.6</td>
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<tr>
<td>expectation of life age 65 (m)</td>
<td>12.6</td>
<td>14.1</td>
<td>7.4</td>
<td>14.3</td>
</tr>
<tr>
<td>expectation of life age 65 (f)</td>
<td>15.7</td>
<td>17.7</td>
<td>7.4</td>
<td>17.6</td>
</tr>
</tbody>
</table>


related to a population at risk by age. There is no published long series of mean age at marriage for the Republic before 1960; its most recent life table dates from 1980–82. The first comprehensive fertility survey in Northern Ireland, which compensated for the absent fertility questions in the 1981 census, was not held until 1983 (Compton and Coward, 1989).

Ireland and the Rest of the Industrial World

Let us begin by seeing the extent to which Ireland stood out in comparison with the unweighted averages and range of variation of various demographic parameters in 36 other industrial countries around 1987 (Table 1). Ireland had the highest natural increase, which is more than balanced by the highest proportional rate of out-migration. Some other countries already have birth rates which exceed their death rates; Ireland is still the
only developed country which is losing population through emigration, despite a healthy natural increase. Irish fertility, whether measured by the total period fertility rate (TFR or TPFR) or by the completed fertility of the cohorts born in the mid-1950s (see Sardon, 1990) was the highest of any developed country in 1987, with the exception of the USSR and Albania. Cyprus (TFR = 2.32) Romania (2.30) and Poland (2.20) are the only close rivals; apart from the USA and Sweden, the rest are all below 2.0. Elsewhere in the industrial world, first births comprise up to 45 per cent of all births. Ireland has the lowest proportion of first births and by far the highest proportion of fourth and higher order births (almost four times the industrial average). Age at first marriage and age at first birth are now close to the European average, having at one time been much higher. Prolonged childbearing means that almost half of all births are to mothers over age 30, compared with an average of little more than a quarter. As a consequence of high fertility, the Irish population is the most youthful in the industrial world (Figure 2) with 29 per cent of the population under age 15. Ireland is unique in having no divorce and in Europe shares with Belgium the distinction of not permitting abortion for any purpose. However, abortions on Irish residents in the UK bring this figure up to a minimum ratio of 69 per 1000 live births (see OPCS, 1990a).

Mortality figures are now unexceptional. Infant mortality is below average, although expectation of life is slightly inferior to the European

![Figure 2. Age distribution of the population of Ireland, per cent, 1990. Source: Eurostat (1991: table B-5).](image-url)
average (but most European data in Table 1 relate to the late 1980s while the latest Irish life table is based on 1980–82). Some countries are not internally homogeneous; when subdivided into their provinces or regions, especially those which are religiously or ethnically distinct, it is possible to find more substantial demographic variation. But Irish exceptionalism cannot be matched on any comparable demographic scale by any subdivision of a larger Western European country except Northern Ireland. Some of the nations within the former European USSR and Yugoslavia are similarly distinctive but they are hardly appropriate comparisons, being either economically backward or with substantial Muslim minorities. The only similar discontinuity at sub-national level was in Quebec up to the 1970s (Henripin, 1978) and the state of Utah in the USA.

The History and Survival of the Irish Demographic Regime

The components of Ireland’s demographic regime were formed by the early nineteenth century. These were: exceptionally late marriage with low levels of illegitimacy or cohabitation; ‘natural’ high fertility within marriage; corresponding relatively low levels of overall fertility compared with other nineteenth century natural fertility populations which married earlier. By this time, and possibly much earlier, the nuclear family was the most common household type. Before and after the famine, mortality was probably moderate by contemporary standards, possibly because of the low level of urbanisation and the avoidance of subsequent subsistence crises through emigration.

The whole system was overshadowed, and its peculiar features made possible, by the institutionalization of very high rates of emigration. This enabled high rates of natural increase to continue for over a century without feeding back on population size (Figure 3). After the famine, Irish population fell throughout the nineteenth century; a feature unique in Europe. There was therefore no demographic incentive for a reduction in marital fertility. Irish emigration was also peculiar in that it included a higher proportion of females than males. Since the death rate was also unfavourable to females, Ireland acquired an unusual sex ratio (which it has only recently lost) with more males than females. Among other things, this depressed the marriage chances of bachelors relative to those of spinsters, giving some substance to its depiction as ‘a nation of elderly bachelors’.

Little is known about marriage and fertility in Ireland before the 1840s. But marriage seems to have been relatively early and may have become even earlier and more universal through the subdivision of farms, the use
Figure 3. Irish Republic 1881–1986, intercensal natural increase (○) and net migration (●). Source: CSO (1989).

of new land and the cultivation of the potato. The argument that the
traditional restraints against early marriage had been eroded by the ease
of supporting a family through potato cultivation seems to have stood the
test of time. Mortality may have fallen, partly because the potato increased
the subsistence base. Smallpox may have been checked by inoculation
in the eighteenth century. According to recent revisions of pre-census
estimates of population (Clarkson, 1981), Ireland’s population actually
grew faster than that of late eighteenth century England or anywhere
else in Europe (Figure 4). But Ireland failed to go through the agricultural
revolution, so important to England’s later economic success and which
enabled it to sustain a large population with a growing standard of living.
Without such developments, the catastrophe of the famine forced the
population into a completely new regime in order to survive desperate new
circumstances.

Ireland and the Demographic Transition

Ireland’s post-1841 demographic regime has been put into European
perspective by the Princeton group’s international demographic project
(Coale and Watkins, 1986). This charts the evolution of the European
demographic transition at the level of 431 provinces from the mid-
nineteenth century to 1961. To ensure the effective comparison of inter-
national data, fertility and marriage data are standardised with indices
developed for the purpose (Coale, Hill and Trussell, 1975). These indices
relate the fertility and marriage patterns of the European provinces with
the benchmark of the high natural fertility of the Hutterite religious
enclaves of the rural United States. The Hutterites show the upper limits
of high fertility which a healthy and well-nourished population can achieve
in the absence of deliberate parity-specific birth control. These measures
of indirect standardisation enable the relative contribution to fertility
reduction of changes in marriage, and of the adoption of contraception
within marriage, to be estimated. From the 1870s most European countries
began to adopt family planning within marriage. Ireland did not.

Four indices have been developed. $I_f$ is an index of overall fertility
based on all women of childbearing age in a population, irrespective of
their marital status. On a scale of 0–1.0 it shows the ratio of the real fertility
of those women compared with that which they would have had with
Hutterite levels of childbearing. Thus a level of 0.4 (high for modern
Europe) indicates that the birth rate of the population in question was
equivalent to 40 per cent of the level it would have had with Hutterite
fertility rates. Departures from the Hutterite level of 1.0 are due in the
first instance to the intervention of a number of 'proximate' determinants; 
delayed marriage, contraception, abortion, breast-feeding (which increases 
birth intervals) and differences in fecundity (the physiological capacity to 
conceive). The next index permits the relative importance of delayed 
marriage or permanent celibacy to be inferred. \( I_g \) relates only to the 
fertility of women who are married, and typically yields figures of up to 
0.8 in populations not practising birth control. A departure of that 
magnitude from 1.0 can readily be due to non-contraceptive factors, but a 
wider gap suggests deliberate family limitation. A population with a low 
or moderate \( I_f \), but a high \( I_g \), like Ireland in the recent past, is one where 
fertility is being limited almost entirely by late marriage or high propor-
tions remaining permanently unmarried or both. A population with low \( I_f \) 
and low \( I_g \) is one almost certainly practising birth control within marriage. 
Modern European populations typically have \( I_g \) indices of 0.2 or even less. 
\( I_h \) relates only to illegitimate fertility. It is typically low in the period in 
question: between 0.05 and 0.10. Finally \( I_m \) is the index of proportions 
marrried (Western European women were less prone to marry, and married 
later than the Hutterites). This index is based on the proportions married 
among the Hutterites weighted by their natural fertility at each age. The 
relationship of these indices can be summed up as:

\[
I_f = I_g I_m + (1 - I_m) I_h 
\]

These indices have been applied to an analysis of the trends in fertility and 
marriage in Ireland and Great Britain (Teitelbaum, 1984). It is im-
mediately obvious that overall Irish fertility (\( I_f \), Figure 5a) was distinctive 
in the nineteenth century because it was so low. Then, by changing much 
less than that of other countries, it came to appear distinctively high 
sometime in the 1920s, exposed to view by the receding tide of fertility 
almost everywhere else. The trend of \( I_g \) (marital fertility) from 1871 to 
1911 shows no trend at all in the Irish case, whereas it fell amost 
 everywhere else. For any given age at marriage, Irish fertility was about 
the same as that of Scotland or England and Wales (Figure 5b). But 
Ireland did not join the substantial decline in marital fertility in Scotland 
and England after the 1870s which followed the adoption of family 
limitation in marriage by most couples. This reduced British \( I_g \) to 0.25 by 
1961 when in Ireland it remained at 0.60 (after some decline which will be 
discussed later). Instead, the trend of \( I_m \) (Figure 5c) shows that in Ireland, 
but not in England or Scotland, there was a substantial further reduction in 
nuptiality, thus increasing age at marriage still further and reducing the 
proportions ever-marrying. This is usually interpreted as a primitive and 
partial response through marriage to those pressures which in England and 
Scotland had led to the general adoption of family planning.
However, other comparisons of fertility of women married around the turn of the century, based on birth-order (parity) distributions rather than age-specific fertility, show that marital fertility control had been spreading quite fast among urban women in Ireland. This conclusion comes from analysis of the 1911 Census, the first to ask retrospective questions on fertility. Urban women tended to marry earlier than rural women. The adoption of fertility control by some urban women brought their fertility back in line with that of the traditionally later-marrying rural population (David and Sanderson, 1988). Different parts of Ireland were already diverging in fertility patterns. Marital fertility even rose somewhat in rural Galway (Figure 6a) while it fell consistently from 1871 to 1936 in Antrim, Down and Belfast (unified here because of boundary difficulties). Nuptiality, however, originally lower in Antrim than in Galway, increased with time, moderating the overall difference in fertility (Figure 6b). This may reflect the partial replacement of older forms of fertility control (marriage) by more modern ones (contraception).

Throughout this period the proportion of births outside marriage remained very low. Illegitimacy fell throughout Europe in the nineteenth century. Those at risk of having illegitimate children would have been the most avid customers of the new knowledge of contraception. No such decline is evident in Ireland, although illegitimate births may have suffered particularly from under-registration.

Changes in the Twentieth Century

Irish fertility declined slowly in the first three quarters of the twentieth century. Since 1900 the rest of Europe has left Irish fertility patterns behind as an increasingly anomalous example of persistent high fertility. We saw above how the fertility levels of England and Ireland parted company in the 1920s. By then the fertility difference between the Protestant and Catholic populations of Northern Ireland had also become apparent, although Protestant fertility remained higher than on the British mainland. After the second world war, Irish fertility was only matched in Europe by that of Iceland and the Netherlands, and further abroad by Quebec. By the 1960s Irish fertility was uniquely high in Europe. The TFR in 1975 was about what it had been in 1950—around 3.2 (Figure 7). In the baby boom which began in the 1950s the TFR rose to a peak of 4.1 in 1964, only matched by New Zealand among countries in the western cultural sphere. The timing of the Irish baby boom was almost identical with that of Great Britain and many other European countries, presumably a response to the same economic and social changes which were driving up fertility throughout the western world.
Figure 5. Trends of (a) $I_r$, (b) $I_g$, (c) $I_m$, 1851–1961, in Ireland (○), Scotland (▲), and England and Wales (□). Source: Coale and Watkins (1986).
Figure 6. Trends of (a) $I_r$, (b) $I_g$, (c) $I_m$, 1871–1961, in Galway (□), and in Antrim, Down and Belfast (▲). Ireland (○). Source: Coale and Watkins (1986).
The Irish baby boom was, as in most western countries, primarily a result of changes in the timing of births rather than an increase in the number of births per woman. The completed family sizes in Figure 7 refer to the birth of cohorts of women born 30 years before the year indicated on the horizontal axis, who would have been about half way through their family building by that time. The most recent data in the graph are based on projection (see Sardon, 1990). There is no increase in completed family size. Instead a gradual decline from a peak around the mid 1950s (births to mothers born in the mid-1930s) is evident. Both completed family size and TFR show marked declines from the late 1970s onwards, a point to which we will return. Irish fertility does show a small recovery in the late 1970s and early 1980s, a pattern not shared either by Great Britain or by any of the countries which Ireland's fertility pattern most closely resembles. Figure 8 shows the TFR trends of the western countries most strongly correlated with that of Ireland ($\geq 0.95$) together with that of England and Wales. Irish fertility trends are poorly correlated with those of most European countries, which show a marked depression of fertility before and after the baby boom period. Irish period fertility trends have most in common with other Roman Catholic, Southern European countries, all of which started a fertility transition late from relatively high beginnings (especially Spain and Portugal).

The timing of births accelerated because the Irish gave up their unique
Figure 8. TFR trends 1945–1987, selected countries: Ireland (●), Italy (□), Spain (+), Portugal (○), UK (●). Sources: Eurostat (1989), OPCS (1990b), CSO (1990a), and other national statistical yearbooks.

Figure 9. Mean age at marriage, bachelors and spinsters: England and Wales, bachelors (○), spinsters (□); S. Ireland, bachelors (●), spinsters (○); N. Ireland, bachelors (+), spinsters (×). Sources: Eurostat (1989), OPCS (1990b), Registrar-General Northern Ireland (1989).
pattern of very late marriage during the 1950s (see Kennedy, 1989). In the late 1950s mean age at first marriage was still 31 for bachelors and 27 for spinsters; by 1977 women were marrying at average age 24. Illegitimate fertility nonetheless remained very low. Other European countries had moved away from a less extreme form of the old West European pattern of delayed marriage by the late 1930s (e.g. England and Wales, see Figure 9). But the change occurred later in Ireland and involved a greater proportional decline. Even so, mean age at marriage in 1980 was almost two years older than the lowest point reached in 1972 in England and Wales.

The Irish baby boom was also unusual in another way. Although the birth rate went up, the number of births did not rise in proportion. Therefore it did not produce the very characteristic 'bulge' of a baby-boom age structure (Figure 10). This was because the maternal generations producing the babies were relatively few in number. Figure 10 shows the birth totals, indexed to 100 in 1950, from a selection of countries. The typical baby boom pattern is that of England and Wales with a bulge centred around 1964, and surrounding troughs in the yearly output of births which become fixed in the age-structure. Ireland does not show this at all; rather, an uneven increase to an absolute peak in 1980, followed by a sharp decline.

The decline of large families is also evident in fewer high order births after 1960 (Figure 11). The proportion of fourth and higher order births

![Figure 10. Birth totals, 1950-1988, selected countries: Finland (○), Yugoslavia (▼), Hungary (△), Ireland (●), England and Wales (+). 1950 = 100. Source: Eurostat (1989).](image-url)
to mothers in Ireland fell from just under half to just over a quarter by the late 1970s. Correspondingly, first births increased from about a fifth to almost a third. This proportion was still substantially behind other western societies, however, where at least 40 per cent of births were first births by this time. From about 1977 to 1984 these trends halted. The temporary recovery of the TFR in the ‘mini-boom’ mentioned above corresponded with an Irish economic recovery sufficiently strong to provoke a powerful return migration. This reversed for several years the loss of population through migration (Figure 3).

The end of the transition?

Most recently, the fertility decline has resumed (Figure 11). Fourth and higher order births have fallen further, to little more than a fifth of the total. First births have risen to about 35 per cent. At the rates of decline current through most of the 1980s, the Irish TFR would have fallen below the replacement level of 2.1 in 1990 for the first time in history. A small increase in births in that year (mostly outside marriage) kept it just above this level. This decline in fertility can partly be attributed to the delay of childbearing, just as the earlier increase in TFR followed a fall in the average age at marriage in the 1950s. Mean age at marriage has increased by over a year since 1980. But completed family size has also fallen. This
is apparent from the completed family size of recent birth cohorts and from the changes in birth order distribution. This decline should be regarded as an accelerated continuation of an earlier decline which had been interrupted by the temporary economic growth around 1980. That faded, to be replaced with 17 per cent unemployment and a resumption of emigration at a level sufficient to bring back the population decline of the early 1950s.

**Illegitimacy and the ‘second demographic transition’**

The demographic effect of delayed marriage is somewhat offset by the rise in cohabitation and the increase in illegitimate births. The latter indicates a startling change in attitudes; the end of a centuries' old tradition of sexual restraint before even long-delayed marriage. Illegitimacy rates in Ireland, both North and South, reached a post-war low of under 25 per 1000 live births around 1960 (Figure 12), somewhat later than the English nadir in about 1955. Since then illegitimacy has increased in both parts of Ireland, particularly since 1980. This trend is shared with many other European countries (Figure 12). Ireland, with 126 illegitimate births per 1000 live births in 1989 (the ‘illegitimacy ratio’) is a long way behind England and

![Figure 12. Illegitimacy ratio per 1000 live births, 1960–1988, selected countries: Ireland (●), N. Ireland (■), England and Wales (▲), Belgium (○), France (△), FRG (○), Italy (◆), Poland (□). Sources: Registrar-General Northern Ireland (1989), CSO (1990a), OPCS (1990b), and other national statistical yearbooks.](image)
France, not to mention Sweden and Denmark. But there is a fivefold increase on earlier levels. Ireland’s illegitimacy ratio is no longer the lowest in Europe, having overtaken Belgium, the Federal Republic of Germany, Italy and Poland. In this respect the social changes which are accelerating the belated completion of the first Irish demographic transition are, at the same time, ushering in the second, of more sexual freedom and of a plurality of family forms (van de Kaa, 1987; Cliquet, 1991). However, this is a complex, pluralistic kind of sexual revolution, coexisting as it does with a reaffirmation in 1986 of the 1937 constitutional ban on divorce which had the support of 63 per cent of those voting, and the incorporation into the constitution of the prohibition of abortion. No other European country forbids divorce, and the prohibition of abortion is shared only by Belgium and (since 1990) Poland. Access to British abortion facilities brings the Irish abortion rate up to at least 59 per 1000 live births, judging from the number of abortions carried out in Britain on Irish residents (OPCS, 1990a). Separation, annulment and desertion, and divorce abroad, substitute to some extent for the absence of domestic divorce arrangements. In 1986 there were 37,245 separated persons in Ireland (in proportional terms, a larger number than in England).

The mortality transition

Early this century, Ireland was unique in Europe in that women lived shorter lives than men. Such a pattern is found today only in the Third World, especially in the northern parts of the Indian sub-continent. There, up to 1977 at least, males enjoyed better survival than females up to age 50, and particularly in early childhood and younger adult life (Ruzicka, 1989). This is attributed to the systematically disadvantaged position of females in such societies, not just to maternal mortality. It was a pattern more common in the past. Between 1840 and 1910, in about 60 per cent of western countries and 70-90 per cent of other countries female mortality exceeded that of males around age 10, while in about 30 per cent of western, and 60 per cent of other countries, female mortality was higher than male around age 30, the peak age of childbearing (Stolnitz, 1956). By the 1930s, this pattern had become rare in the West and Ireland remained alone in the West in having higher male survival rates than female at any age.

Within the last thirty years almost all trace of this pattern has been lost, and the female advantage in life-expectation in Ireland (5.5 years measured from birth) is little less than the average for the industrial world (6.3 years). In the twentieth century expectation of life at birth has followed similar trends in England and Wales, Northern Ireland and the
Irish Republic. Northern Ireland and the Republic have shared almost identical female mortality since the 1960s. Both converged with English mortality rates in the postwar period and for the last two decades have maintained the same trend in improvement but with lower life expectation in both parts of Ireland (Figure 13). This is consistent with what might be expected from the different standards of living in these areas. However, these remaining mortality differences derive mainly from adult mortality. Infant mortality (both sexes) in the Irish Republic, Northern Ireland and England and Wales have converged throughout the postwar period. Since the early 1980s the infant mortality rate (deaths under age 1 per 1000 live births) in the Irish Republic has been the lowest of the three (Figure 14).

Data on mortality at different ages are only available for the area of the Irish Republic from 1926. By that time there was a small female superiority (0.4 years) in expectation of life at birth but females had lower expectation of life than males from age 5 to age 20. From the 1930s up to the Second World War, females enjoyed a greater advantage in survival over males, but even in 1961 the overall female excess expectation of life was just under 4 years—about 2 years less than in other developed countries. A truly modern pattern was only achieved in the life table centred on 1981 (Figure 15). It is not known for how long the older pattern obtained in Ireland. The life table for the whole of Ireland based on 1891 showed a nearly 1 year female deficiency in expectation of life at birth, declining to 0.4 years by 1901 and becoming slightly positive by 1911. By

1891 the female excess in England and Wales was already 4 years. The first English life table of 1840 \((e_{0m} = 40.2 \text{ years})\) showed female life expectation at birth to be already 2.0 years higher than that of males.

Conclusions

**Accounting for fertility decline**

In trying to account for these changes, the crucial questions are: (i) why did fertility in Ireland take so long to decline? and (ii) now that it is falling to more average levels, can this decline be attributed to the same sort of socio-economic factors which appear to have been important elsewhere? These problems are complicated by the lack of agreement as to why European fertility began to decline in the first place in the late nineteenth century (Cleland and Wilson, 1987), although there has been much successful econometric modelling of subsequent fluctuation of the birth rate once the two child norm has been achieved (see de Cooman et al., 1987). In the Irish case, these two processes have been happening at the same time in a 'compressed' demographic transition (Kennedy, 1989). In the analysis of fertility decline, it is customary to begin by partitioning the fertility into those technical 'proximate' components which must, in sum, account for its departure from the 'natural' level, which were mentioned in an earlier section. The changes in marriage discussed above have, other things being equal, tended to increase rather than decrease the birthrate. Clearly the main influence must be the deliberate limitation of fertility through more general use of birth control.

**Family planning**

Normally, the availability of modern contraceptive methods is held to make only a marginal difference in the fertility of populations already accustomed to older methods of contraception. By the 1930s most European populations had reduced their family size below replacement rate simply with coitus interruptus, the condom and illegal abortion. But supply side improvements, while in part reflecting changed attitudes, may themselves have more impact on the Irish population, which has been less accustomed even to 'traditional' methods of contraception. Contraception in Ireland has come out of the closet following recent legislative changes. A Supreme Court decision in 1973 (McGee) established the legality of contraceptive sale for 'bona fide' purposes (whatever they are), a provision formalised by legislation in 1979. In 1985 further legislation made
non-medical contraceptives of all kinds available to anyone over 18 years without prescription. However, contraceptive supply is still hedged with impediments. In February 1991 the Dublin Virgin Megastore store was fined £500 in the Dublin High Court for selling condoms and was told that it had 'got off lightly', and indeed the penalty was later raised to £700.

The rather limited information on family planning practice suggests that Ireland is rapidly converging with the rest of the industrial world: 66 per cent of a sample of 600 married couples in 1975 had used some form of birth control. In the whole sample, 37 per cent had used 'natural' (church approved) methods, 19 per cent had used the pill and 10 per cent other artificial methods. This seemed a surprisingly high proportion, especially as both husbands and wives reported an ideal family size of 5.6 children. Use of contraception was strongly associated with higher social class, higher education and younger age: 30 per cent of wives aged under 25 had already used the pill. Even in 1975, few of those who avoided contraception mentioned specifically religious reasons, although 13 per cent thought the pill 'immoral' (Wilson-Davis, 1982). Results from a smaller sample of 100 married and 100 unmarried mothers of first-born children in a Dublin hospital suggest rapid change in contraceptive practice in ten years: 81 per cent of the married mothers had used some form of contraception, 61 per cent had used the pill, 13 per cent other (mostly artificial) methods, only 7 per cent 'natural' methods; 20 per cent of the married women's pregnancies had been unwanted, 89 per cent of the single women's; 28 per cent of the single women had considered abortion in the UK. It has been estimated that 37 per cent of pregnant single women in Ireland in the early 1980s sought abortion in the UK (Dean, 1984). The poor contraceptive practice among the single women (22 per cent had used the pill, 64 per cent had used no method) was regarded as a damaging legacy of low levels of knowledge of family planning and restricted supply (Greene et al., 1989). It is difficult to put these limited data into the context of other western countries but it looks as though younger married women in Ireland are rapidly approaching modern levels of contraceptive practice.

What, in turn, are the ultimate factors which have changed attitudes towards desired family size and the acceptability, or necessity, of family planning? In the European fertility decline of the late nineteenth century, and subsequent declines after the 1960s baby boom, a number of factors are thought to be important: increased costs of children arising from the need to educate them to meet the needs of a skilled workforce but thereby delaying the time when they could earn money themselves; the effects of near-universal literacy and higher education standards (especially among women) in eroding traditional and religious inhibitions and spreading knowledge of family planning methods; and latterly the general entry of
married women themselves into the workforce. All these depend on a modernised, literate, mobile, open society with a modern economy offering rewards to skills and education. It used to be thought that urbanisation and industrialisation were the driving forces, but recent research emphasises more the spread of knowledge and education (Lesthaeghe, 1983; Cleland and Wilson, 1987). For many years, and very fast since the late 1950s, the Irish economy and society have been changing in ways which would be expected to lead to a fertility decline (Kennedy, 1989). Up to the 1950s Ireland was a rural society with 40 per cent of jobs on the land. Since then Irish employment has shifted to urban, manufacturing and service jobs: only 15 per cent worked in agriculture in 1987. Movement away from rural smallholdings undermined one of the main props of long-delayed marriage or celibacy. Elsewhere such economic changes have usually brought small family size. So a classical fall in fertility would be expected. But there do not seem to have been any formal economic analyses of the Irish fertility decline. Analyses using, for example, ‘new home economics’ models might show whether the decline is in line with that experienced elsewhere or whether, as seems likely, fertility remains higher than the level that would be expected from Irish economic and social development.

**Women in the workforce**

In econometric modelling of birth rate fluctuations, especially those which marked the end of the baby boom, pride of place usually goes to the entry of married women into the non-agricultural workforce (Ermisch, 1990; De Cooman et al., 1987). This greatly increases the opportunity cost of children. In 1971 only 7.5 per cent of married women in Ireland were in the workforce compared with over 40 per cent in most Western countries. This had increased threefold to 23.1 per cent in 1988, but was still the lowest in the EC except for Spain (see Courtney, 1990). At young ages workforce participation of married women is only slightly below the EC average (51.4 per cent in 1988 compared with 58.2 per cent at ages 15–24). But older married women are progressively less likely to be in work: 45.5 per cent at age 25–34 compared with the EC’s 59.1 per cent, 29.7 per cent at age 35–44 against the EC’s 58.5 per cent (Eurostat, 1991). This presumably reflects rapid changes in behaviour by successive cohorts of women. The proportion of married women in the workforce in Britain, for example, had risen to 62 per cent by 1982. By 1989, 63 per cent of women aged 16–59 with dependent children were economically active, and 78 per cent of women without dependent children (OPCS, 1990b). But the international correlation of workforce participation rates with fertility is rather low (West Germany has only average rates, those in Italy are
below average). It is easier to correlate time trends in fertility with the participation rates in each individual country. Without an econometric analysis of Ireland's fertility decline in relation to its socio-economic variables we cannot know how large is the 'residual', if any, which needs to be accounted for by the effects of religion or of high migration levels.

A Catholic explanation?

The obvious explanation for the persistent high birth rate of the Irish fertility regime is the dominance of the Roman Catholic church in Ireland, the pronatalism of its doctrines being translated into demographic consequences by Irish religiosity. Irish religiosity is clearly higher than almost anywhere else in Europe, and the particular influence of the hierarchy on government policy on, for example, abortion and contraception is easily shown. But there are too many international exceptions to allow that simple hypothesis to pass unchallenged. In his comprehensive analysis of this question, Day (1968) concluded that the only circumstances in which Roman Catholic influence was important, or even detectable, over and above the level expected from socio-economic development, were when Roman Catholicism acquired particular authority through being a focus for the national sentiments of a minority in larger population (see Siegel, 1970). That minority had to be in a politically or otherwise disadvantaged position—Roman Catholic influence was only important if it were reinforced by ethnocentrism and the needs of group survival.

This formulation helps with the apparent Polish and Irish exceptions. In both, the Catholic church has been the only institution surviving as a focus for national identity during the absorption of the society into a wider polity. But neither has been a 'minority' for seventy years, so the survival of this response for religious reasons in Ireland may seem surprising. Whatever the case in the past, public opinion surveys in the 1980s show that a majority of adults in Ireland (especially young people) no longer accept the Catholic church's teaching on contraception and instead approve of its use (cf. Greene et al., 1989). And just at a time when traditional attitudes have apparently been reaffirmed officially in the Republic through the referenda on abortion (1983) and divorce (1986), clear signs have also emerged of rapid declines in fertility and of the rise of the 'second demographic transition', characterised by cohabitation and high levels of illegitimacy, which has also destroyed an old high-fertility regime in Catholic rural Quebec (Henripin et al., 1978). Furthermore, although abortion remains illegal in Ireland, the number of abortions to Irish nationals in the UK alone is, as earlier noted, equivalent to an abortion ratio of 69 per 1000 live births; far from the lowest in Europe.
The emigration factor

Other factors need to be invoked to explain the persistence of high fertility so long after independence and so long after almost all other Catholic countries have adopted a low fertility regime. The Irish case is greatly complicated by the survival of the unique emigration tradition begun in the 1840s. This has permitted high levels of natural increase to co-exist with declining population size for over a century and has dominated the Irish fertility regime since. It has destroyed demographic feedbacks from high natural increase at the population level. Without emigration, population growth and density would have become uncomfortable many decades ago, increasing land values, rents and prices. It would have been difficult to create jobs at the rate of population growth implied by high fertility without the check of emigration. Studies of other high fertility, high emigration countries (e.g. Puerto Rico; see Mosher, 1980) have shown that emigration and fertility decline can be regarded as alternative demographic responses to population growth (Davis, 1963). Long-term high levels of emigration retard the modernisation of fertility.

Emigration may have selective effects on cohorts, leaving behind the more conservative (Walsh, 1972). The fertility of Irish immigrants in the UK is closer to the UK average than it is to that of Ireland. High emigration from Ireland is accompanied by very low levels of immigration of persons without previous connection with Ireland (North or South). There are no large minority groups except the 5 per cent of Protestants whose ancestors have been in Ireland for centuries. Unlike most industrial countries Ireland has experienced no major influx of population from the rest of the EC or from the rest of the world, and therefore has had less exposure to modern attitudes to fertility and religion. Few people go to live in Ireland except those of Irish origin returning home. Those that do tend to be high-status foreigners seeking retirement or second homes, or on short term business sojourns. Neither group will have much effect on the attitudes of local people.

At present rates of change, it looks as though the distinctive Irish fertility regime is finally over, and will join those of Quebec, Spain, Portugal and other Catholic countries as problems of recent history rather than of the contemporary world. But, despite its decline, Irish fertility may not become indistinguishable in pattern from that of the rest of Europe. Other, lesser differences, such as the particularly low fertility of Germany and its neighbours, have persisted for almost two decades. Ideological explanations of fertility change are becoming popular because of the inadequacy of socio-economic models alone to explain the international trend and timing of fertility transitions and regional differences (Cleland
and Wilson, 1987; Lesthaeghe, 1983). These owe much to the analysis of characteristic attitudes which extend over a much wider range than those of institutional religion and which are often discussed in terms of the materialist/postmaterialist or ‘fundamentalist/pragmatic’ division (Simons, 1986). Ireland returns conservative scores in European attitude surveys, as do other relatively high fertility countries such as England and France, where religiosity is much lower.

While ‘Catholic fertility’ has disappeared in the rest of the industrial world, other differences concerned with sexual behaviour have not. Although illegitimacy is growing in almost all industrial countries, it is doing so at very different rates and from different starting points. Catholic countries (with Quebec’s exception) have markedly lower illegitimacy rates than others. It may be a matter of time before they catch up. We must wait and see whether a further example of the exceptionalism of Catholic societies, and of Ireland in particular, may be in the making. The example of Quebec may provide the most appropriate parallel. In contrast with other cases, fertility was particularly high, Catholics were in a minority position in historical circumstances which had given the church great prestige and influence, they were distinguished by a different culture as well as religion and, until the 1960s, the population was mostly rural. The collapse of the old high fertility regime, and of church influence, were particularly dramatic. Quebec in the early 1980s had almost the lowest fertility of any large western population (TFR = 1.4), much lower than that of its English-speaking neighbouring provinces, and its illegitimacy rates—about 40 per cent of live births—are now higher than those of other Catholic populations. It may be that Irish fertility, and the influence of the church, are facing similar eclipse.


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