

Recent Changes in Irish Fertility

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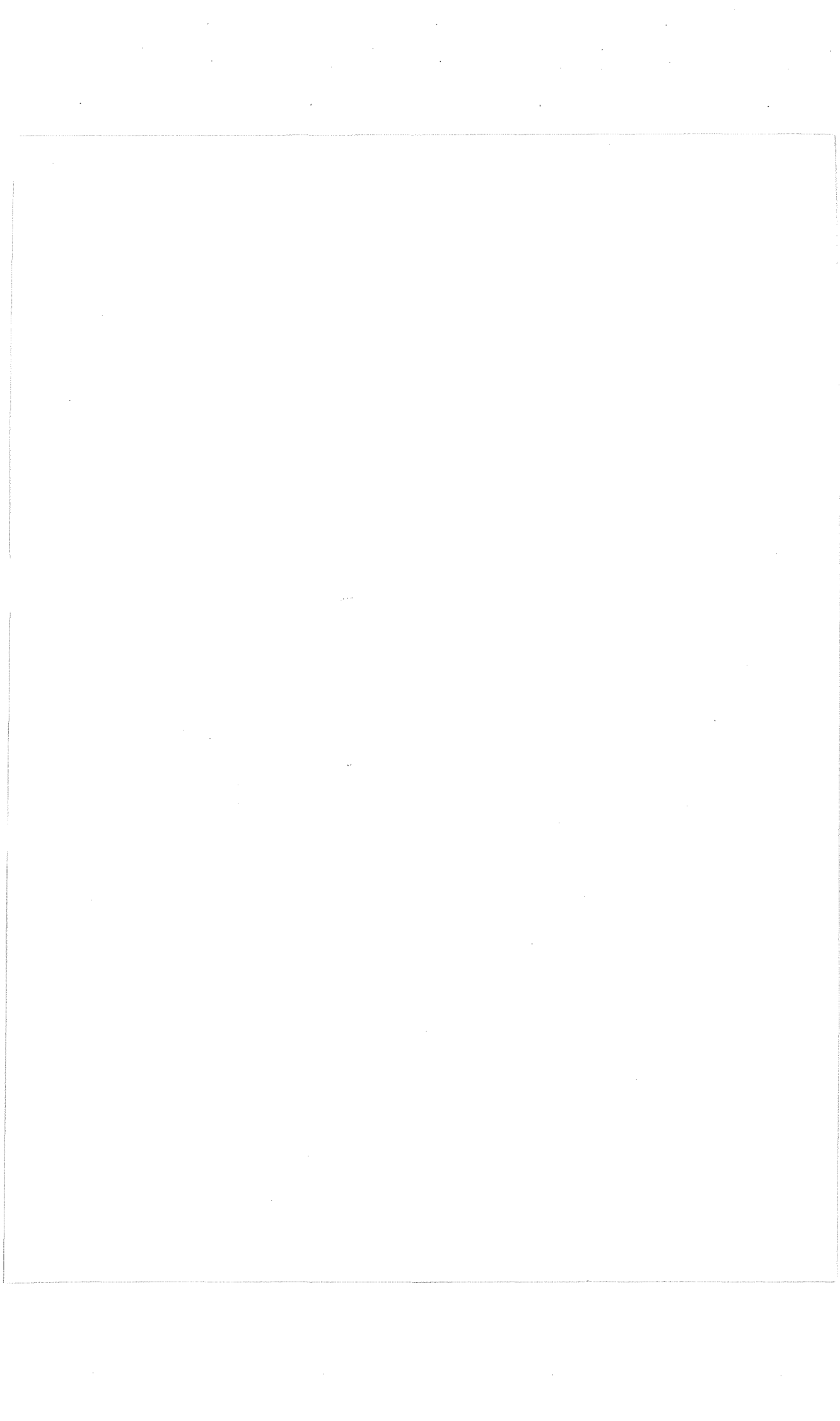
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I. Introduction

The main purpose of this paper is to provide a broad description of fertility trends in Ireland over the last two decades. The analysis investigates in particular whether there are regional (i.e., county) differences in relation to the levels of fertility and how these have changed. In the final part of the paper we discuss the likely future pattern of fertility trends and consider some economic and social implications arising therefrom. The last-mentioned aspect is now a matter of considerable significance since there are indications (from the annual births total) that the general decline in fertility has escalated to such an extent in recent years that the effects may be quite substantial and materialise within a relatively short period of time.

Before we proceed to present any analysis it is necessary to describe what we perceive by "fertility" in the sense used in this paper. Conventional methods of measuring fertility relate essentially to the propensity of the female population to reproduce. Generally these methods take the form of relating numbers of births to the numbers of women in the child-bearing or reproductive age group between 15 and 49 years. Clearly, within this range, actual age is a factor which has to be taken into account since the incidence of childbirth decreases with the woman's age. Therefore, many analyses are based on what are termed "age-specific fertility rates" (ASFR) which are, in effect, the ratios of the numbers of births to the female population in specific age groups. These might be calculated for single years of age, or, for example, for five-year age bands (such as those given in Table 4). A further distinction which may be made is to concentrate on marital fertility or births to married women only. This can be important as the proportion of married women in the population can, for example, vary between regions, or over time, and this can significantly influence derived fertility trends if the calculations are based on total numbers of women (both single and married). While it is important to make this distinction in Ireland, in international comparisons of fertility however this subdivision is now seldom used as in many countries a significant and increasing proportion of total births relate to informal relationships which are not marriages in the legal sense. Basically, the approach adopted in other countries in measuring changes in fertility at the aggregate level is to consider fertility in terms of the propensity of the total female population to reproduce, irrespective as to whether those changes may be due to shifts in the pattern of marriage behaviour, movements in the actual level of fertility as such, or due to any other social factors.

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The calculation of ratios in the manner described obviously requires comprehensive information on births (particularly by age of mother) and on the marital status and age distribution of the female population. While fairly detailed information on births is published each year in the Annual Report on Vital Statistics, an accurate age by marital status profile of the Irish female population is available only from Censuses of Population. Basically, therefore, in this type of analysis one is confined to observing the relevant fertility measures for particular years, i.e., the years in which Censuses were held. In this paper we shall base our analysis on data relating to the years 1961, 1971, 1979 and 1981.

II. Fertility in Ireland in Relation to Other Countries

Before we attempt to analyse fertility in Ireland in any depth let us first describe the situation here in the context of fertility levels and trends in other Western countries. It is, of course, a matter of well-established fact that the levels of fertility in Ireland are high by international standards. This is reflected even in terms of crude birth rate figures, despite the imperfections of this indicator as a measure of fertility (which is significantly influenced by the age structure of the total population and the proportion who are married). Table 1 shows crude birth rates for 15 selected countries for the years 1961, 1971 and 1981. For the most recent year indicated the figure for Ireland is so much in excess of those for other developed countries in the Western hemisphere that it leaves little room for doubt that fertility is the primary reason involved. In 1981 Ireland had a crude birth rate of 21.0 per thousand of the population, the next highest figures being for Portugal and New Zealand with figures of 16.3 and 16.1, respectively. The 1981 rates for many of the other countries listed are considerably lower, the figure for West Germany being as low as 10. It is of interest to note, however, that Ireland has not always headed the international league table in terms of this indicator. The figures for 1961 show that the birth rate for Ireland in that year was much the same as it was twenty years later (just over 21) but the rates for all other countries were then higher, some of them substantially higher — such as those for New Zealand and Canada which exceeded 25 per thousand of the population at that time.

The reasons underlying the change in these relative relationships are rather complex. In Ireland, as we shall see, there was a significant fall in marital fertility levels over the period under discussion but there was, simultaneously, a rapid rise in the proportion married. The net result of these counter-balancing trends was a sort of equilibrium in the crude birth rate which is, in arithmetic terms, based solely on numbers of births and the total population. However, other countries experienced changes in marriage patterns which were radically different from those which emerged in Ireland during this time. Appendix Table A shows the proportion of the female population which was ever-married (i.e., either currently married, widowed or divorced) in 1960, 1970 and 1980 for four age groups between 20 and 44 years for Ireland and for nine other selected countries in the Western hemisphere. In Ireland the proportion married grew significantly in all age groups over this period, quite rapidly during the 1960s and at a somewhat slower rate between 1970 and 1980. For

the other countries shown, while there was a general (though not universal) upward movement of modest proportions in the proportion married in the younger age groups during the 1960s, there was a sharp fall in this proportion between 1970 and 1980. For some countries these decreases were quite dramatic — in Denmark, for example, in the 20 to 24 year age category, the proportion ever-married fell from 55 per cent in 1970 to 19 per cent in 1980; in the United States over the same time span the proportion fell from 63 per cent to 50 per cent and in Britain the percentage ever married in this age group fell from 63 per cent to 46 per cent. In the 25 to 29 year age group the rate of decline in the proportion married for the other countries shown was somewhat less, but it was still of quite significant proportions, particularly in Denmark. For the older age groups shown the ratios in question remained fairly stable over the period under discussion even though there was, again, a tendency for these ratios to fall slightly in the 30 to 34 year age category; in Ireland, on the other hand, the proportion rose in this age group.

TABLE 1: Crude Birth Rate, EEC Countries, 1961, 1971 and 1981

Country	Total Number of Births per 1,000 Total Population			Percentage decline 1961-1981
	1961	1971	1981	%
West Germany	18.0	12.7	10.1	43.9
France	18.2	17.2	14.9	18.1
Italy	18.4	16.8	11.5	37.5
Netherlands	21.3	17.2	12.8	39.9
Belgium	17.3	14.6	12.7	26.6
Luxembourg	16.0	12.9	11.5	28.1
United Kingdom	17.9	16.2	13.5	24.6
Ireland	21.2	22.7	21.0	1.0
Denmark	16.6	15.2	11.1	33.1
Spain	21.3	19.7	15.1	29.1
Portugal	24.3	20.2	16.3	32.9
United States	22.6	16.2	15.8	30.1
Canada	25.3	18.6	15.4	39.1
Australia	21.9	21.0	15.4	29.7
New Zealand	25.9	22.3	16.1	37.8

Sources: Eurostat (1983) — Demographic Statistics, 1981

United Nations (1980) — Selected Demographic Indicators by Country, 1950-2000.

OECD (1982) — Labour Force Statistics.

The figures given in Appendix Table A for the different countries reflect the growing tendency towards cohabitation without going through the legal formalities of marriage. This is a trend which has been evolving in other countries over quite a number of years, particularly in Scandinavia. In Denmark, for example, if one is to accept the 1970 figure for the proportion married as representing a "norm" subsequently covering both formal and informal relationships, then one can speculate that in 1980 about two-thirds of "marriages" in the 20 to 24 year age group were of the latter kind. The fact that the proportion legally married increases with age suggests that, eventually, many informal arrangements are transformed into legal marriages, but it must also be kept in mind that the differences between age groups would also reflect changing attitudes among successive cohorts in the population.

TABLE 2: Total Fertility Rates, EEC Countries, Spain and Portugal, 1961, 1971 and 1979

Country	Total Fertility Rate (TFR) (per woman)			Percentage Decline in TFR
	1961	1971	1979	1961-1979
West Germany	2.457	1.921	1.379	43.9
France	2.807	2.535	1.867	33.5
Italy	2.407	2.411	1.738	27.8
Netherlands	3.207	2.381	1.567	51.1
Belgium*	2.644	2.208	1.978	37.7
Luxembourg	—	1.920	1.470	—
United Kingdom	2.784	2.407	1.859	33.2
Ireland	3.791	3.978	3.229	14.8
Denmark	2.547	2.043	1.602	37.1
Spain	2.765	2.860	2.303	16.7
Portugal	3.183	2.799	2.112	33.6

Source: Demographic Statistics, 1981. Eurostat (1983).

*The most recent TFR for Belgium relates to 1978 but the percentage decline for 1961/78 has been converted to an 18 year equivalent rate.

Since the levels of fertility would be generally lower for informal liaisons the overall trend indicated by the figures in Appendix Table A would tend progressively to depress the birth rates for the countries indicated. In Ireland, as we have already mentioned, the changing marriage pattern since the early 1960s has tended to raise the birth rate. In earlier times, of course, the situation in this country was quite different. For generations the Irish social scene was characterised by a late average age at marriage and a low propensity to marry in that many never married at all. Furthermore, the high level of emigration depleted the young adult population which had the effect of further reducing the overall number of births. These influences acted as an implicit but extremely effective form of birth control even though they were not perceived as such at that time. The situation changed after the early 1960s when the level of emigration began to taper off, the average age at marriage started to fall and the overall propensity to marry began to rise.

It will be noted that there was a marked slowing down in the rate of increase in the proportions married in different age groups in Ireland during the 1970s. Of further interest is the fact that a comparison of the 1979 and 1981 Census figures indicates that these increases ceased altogether during this short period — in fact, there is evidence of a slight fall in these proportions for the younger age groups. It is rather early yet to say whether this is a first indication of a significant behavioural change similar to that which occurred in other Western countries, or whether it may be a reflection of the difficult economic circumstances which emerged during this period.

Before we conclude this overview of fertility in an international context it is of interest to examine further the situation using an indicator somewhat more appropriate than the overall crude birth rate. One frequently used method involves the compilation of what is called a "total fertility rate" which is essentially the sum of the age specific fertility rates for individual years of age in the reproductive age span. This purports to represent, in average terms, the total number of children born per woman during this reproductive age

interval. In this context a calculated value slightly in excess of 2 is termed a "replacement" level in that in terms of current fertility patterns the population is replacing itself. The small excess over the value of 2 is necessary to take account of the deaths of offspring; usually the actual replacement value of the total fertility rate is about 2.1. If the total fertility rate is greater than this level the reproductive mechanism in the population is operating at more than replacement level while a value of 2 or less implies the reverse. If the latter situation were sustained for a long enough period the population could ultimately begin to fall.

Table 2 shows total fertility rates for EEC countries, as well as for Spain and Portugal, for the years 1961, 1971 and 1979. For the most recent year shown Ireland has by far the highest total fertility rate, 3.2 followed by Spain and Portugal each with a value just over the replacement level. For France, Belgium and the United Kingdom the values are somewhat less than replacement but in the case of the other countries the levels are significantly lower, that for West Germany being less than 1.4. If such trends persist a number of European countries could ultimately begin to experience declines in population and, in fact, this situation is already reflected in some official population projections. It must be remembered, of course, that other factors (such as external migration) influence future population changes and, indeed, fertility trends may change. It will be noted from work by Calot and Thompson (1981) that there was evidence of a more or less simultaneous, if shortlived, recovery in fertility (as measured by the total fertility rate) in Britain, France and West Germany in the late 1970s. However, even if actual population declines do not materialise, the current fertility patterns in Western Europe will inevitably give rise to significant imbalances in the age structure in many countries towards the end of this century. This will have far-reaching social and economic implications and is an issue which has already engaged the attention of researchers and policy makers in the social and economic sphere; as far back as 1976 the Council of Europe organised a wide ranging seminar on the implications of an ageing and declining population.

It will be noted from Table 2 that in terms of the total fertility rate, Ireland experienced the smallest decline over the period between 1961 and 1979 — 15 per cent. Apart from Spain, where the decline was 17 per cent, in virtually all of the other European countries listed the decreases exceeded 30 per cent and the decrease for the Netherlands was as high as 51 per cent. It must be borne in mind, however, that the total fertility rate is essentially a measure of the propensity of the whole female population in the fertile age band (both ever-married and single) to reproduce and in the case of Ireland the relatively slow decline in fertility would be partly due to the significantly increasing proportion of married persons in the childbearing age span. Conversely, in many other countries, as we have noted from our earlier discussion, the behavioural trend in regard to marriage was quite the reverse and this has tended to accelerate the decline in fertility when measured in this way.

III. Recent Fertility Patterns in Ireland

Let us now move on to a more detailed consideration of fertility in Ireland, involving particularly analyses of inter-county differences. We will in the first

instance examine the actual levels of fertility in different counties for the most recent year for which this is possible — 1979. We will then look at the changing national trend in fertility over the period from 1961 to 1981 and analyse inter-county variations in this trend. It should be mentioned that in recent years other studies have dealt with the fertility issue in Ireland such as those of Keating (1976) and NESC Report No. 63 (1982); therefore, in national terms, the evidence presented here is essentially a recapitulation of familiar information even though it does represent an updating on the basis of the most recent 1981 Census data. The main concentration in our subsequent analysis will be on the regional or county aspects (which were dealt with briefly in Herlihy (1981)) and on how fertility trends are likely to behave in the years ahead.

Current Fertility Levels in Different Irish Counties

In assessing the fertility situation in Ireland in relation to other countries we have used as measures the rather crude overall birth rate and the total fertility rate. Neither was seen to be particularly ideal because of differences in the underlying social structures between countries and in fact the same problems manifest themselves when one attempts to make inter-regional comparisons within a country. In Ireland, for example, the proportion of women who are married in different age groups may vary from county to county, and as we have already noted, it has certainly varied over time. Therefore, in investigating inter-county fertility we will restrict our analysis to considering births to married women only, i.e., legitimate births. The exclusion of births to single women will not materially affect the type of overall assessment in which we are engaged. Even though the number of illegitimate births has been increasing fairly rapidly over the years, the overall number involved is still relatively small, some 4,400 out of 70,900 births in 1982, or just over 6 per cent of the total. It should be borne in mind, however, that illegitimate births are relatively more important in the younger age groups of the fertile span; they are heavily concentrated among single women aged between 15 and 24 years and in fact account for about a third of all births to women in this age group.

Even if one restricts the analysis in this way, further steps are necessary in order to obtain a true picture of differences in fertility levels between counties. The age structure of the population of married women is a factor which must be taken into account. If, for example, a county has a population of married women which is older than average, then indicators based on the total number of legitimate births and the numbers of married women will tend to understate the level of fertility in that county since the age specific birth rates are substantially lower in the older age categories of the reproductive span. It is necessary, therefore, to make adjustments to cater for this factor. There are a number of ways in which this can be done; in this study we have taken the age specific legitimate fertility rates for each county (using five year age spans from 15 to 49 years) and reweighted these on the basis of the age distribution of married women in the State as a whole. This is essentially a form of standardisation similar to that used in compiling the standardised death rates contained in the Annual Report on Vital Statistics. Aggregate legitimate fertility rates for

1979¹ covering the entire fertile age span from 15 to 49 years, based on the reweighting procedure as described above, are given in Table 3 following, which also contains the unadjusted overall rates, (i.e., without the application of any correction for differences in age structure between counties).

TABLE 3: Weighted Marital Fertility Levels by County, 1979

County	Fertility Level		*Adjusted County
	Unadjusted	Adjusted*	Fertility Levels as % of National Level
	per 1,000 married women		%
	(1)	(2)	(3)
Wicklow	155.9	145.8	90.2
Dublin	147.1	147.6	91.3
Waterford	158.0	155.4	96.1
Laois	154.6	156.5	96.8
Kildare	174.6	158.5	98.0
Clare	161.4	160.6	99.3
Kilkenny	161.2	160.6	99.3
Louth	170.1	161.5	99.9
Meath	171.5	164.8	101.9
Cork	160.6	165.5	102.4
Limerick	169.2	166.6	103.0
Offaly	169.4	167.2	103.4
Roscommon	153.9	171.7	106.2
Monaghan	175.8	171.8	106.2
Tipperary	159.3	172.9	106.9
Donegal	178.4	175.9	108.8
Wexford	181.7	176.6	109.2
Longford	179.9	178.6	110.5
Sligo	173.4	179.0	110.7
Kerry	174.6	180.9	111.9
Cavan	172.1	181.3	112.1
Mayo	170.9	181.9	112.5
Westmeath	186.1	183.2	113.3
Galway	176.6	183.2	113.3
Carlow	194.1	184.1	113.9
Leitrim	164.4	187.2	115.8
State	161.7	161.7	100.0

*The age specific legitimate fertility rates for each county were reweighted on the basis of the age distribution of the number of married women in the State as a whole. The figures for each county in Col. (2) are the aggregates of these reweighted rates.

It will be immediately noted that the adjustment procedure used makes quite a difference in interpreting variations between counties. As a result of the correction for the age structure of married women, the rates (which are expressed in the form of births per 1,000 married women) for many of the western counties, where there is a higher concentration of persons in the older age groups, have been significantly increased and those in a number of eastern counties reduced. The overall State level for marital fertility in 1979 was 161.7 per thousand married women but the data indicate quite substantial variations about this figure among the counties. The lowest levels (after adjustment) were

¹The year 1979 is the most recent for which this cross-sectional inter-county analysis of fertility levels can be carried out. It requires for each county both data on legitimate births classified by age of mother and, simultaneously, information on the numbers of married women by age. The ASFR for individual counties are not given in this paper but are available on request from the authors.

for the counties of Wicklow and Dublin with levels of 145.8 and 147.6, respectively; the highest figures were for Leitrim and Carlow with levels of 187.2 and 184.1, respectively. The counties in this table are, in fact, ranked in order of ascending (adjusted) fertility levels, and it will be noted that there is a marked tendency towards higher fertility levels in the western counties and to relatively low levels in the eastern half of the country. There are some exceptions to this general pattern, however, notably Carlow as referred to already which had a significantly higher fertility level than other adjoining counties in Leinster and, on the other hand, Clare which exhibited an uncharacteristically low level of fertility when compared with other counties along the western seaboard. Those counties ranked highest had fertility levels some 25 per cent above those with the lowest levels.

Even though there is a limit to the extent to which we can pursue detailed analyses in the context of this short paper, it is of interest to probe further and to try to identify some of the reasons behind the inter-county variations in the fertility levels. Aspects which immediately come to mind and which would tend to influence fertility are the social group structure, religion, and the proportion of the population resident in rural areas and so on. The only source which provides information on fertility classified according to such characteristics are the Censuses of Population and in this regard, unfortunately, the most recent information relates to 1971 (Volume X — Fertility of Marriage). Similar information was also collected in the 1981 Census but data under this heading are unlikely to be issued for quite some time yet. Even though the 1971 figures are now rather out of date, it is of interest to examine them from these points of view and, in fact, as we shall see, some interesting features emerge. Two aspects in particular appear to have a strong influence on fertility, namely, social status and religion. Appendix Table B shows information from the 1971 Census giving data on the numbers of children born per 100 families classified by socio-economic group and religion. Looking at the figures for social groups, it will be noted that there is quite a divergence of fertility levels ranging from 380 or more for farmers and unskilled manual workers down to about 300 for employers and managers, salaried and higher professional workers. The second set of figures shows that the average fertility for Catholic families, at 352, was substantially higher than that for families of other (mainly Protestant) denominations, for whom the level was about 230. It may be argued, however, that some of this difference could be due to variations in the social group structure in that a greater proportion of persons in the Protestant community would be in the higher social groups. However, a closer examination of the 1971 Census data shows similar differences in fertility levels between religious denominations within social groups, suggesting that religion is, not surprisingly, a primary causative influence. However, since Catholics form an overwhelming proportion of the population of the State the religious aspect would not have a significant influence on inter-county differences in the level of fertility, except in some counties where the Protestant community is relatively sizeable, e.g., Wicklow and in some of the border counties.

The foregoing information suggests that the relatively high fertility levels evident for western counties are due to the influence of the large numbers of persons with agricultural occupations resident in these counties. On the other

hand, the more urbanised eastern and southern counties contain a very high proportion of persons with professional and managerial occupations, for whom fertility tends to be low. However, these latter counties also contain high proportions of unskilled workers in the industrial and building sectors (for whom fertility is high) so that one cannot adopt too firm a stance in maintaining that differences in social group structures is the dominant factor giving rise to inter-county variations in fertility. Some of the differences may be due to purely regional aspects, such as differences in the extent of access to family planning facilities. However, in trying to determine whether there is a purely regional influence (whatever the underlying reason) it would be necessary to take account of the many other factors indicated — average duration of marriage, average age of wife at marriage, social group, religion, etc. — using a detailed standardisation procedure or some other means such as a cross-sectional multiple regression analysis. Such a study should be possible when the detailed fertility data from the 1981 Census become available.

Changes in Fertility over the Period 1961-1981

Let us now consider how fertility in Ireland has changed over the period since the early 1960s. Table 4 shows national Age Specific Fertility Rates (ASFRs) for married women for the years 1961, 1971 and 1981 as well as percentage changes in these rates over the two decades concerned. The most notable feature of the trend in the 1960s was a substantial fall in fertility among older women. The rate for married women aged 35 years and over fell by as much as 25 per cent. There was a smaller but still significant fall of between 10 and 20 per cent for women aged between 25 and 34 years. There was a marginal decrease in the level of fertility for young married women aged between 20 and 24 years and fertility actually rose (by 14 per cent) for the 15 to 19 year age band but, of course, the number of married women in the last mentioned category is quite small (about 3,000 in 1971) and therefore the impact on the overall level of fertility was of negligible proportions. During the 1970s the age pattern of fertility changes was somewhat similar; the greatest decreases took place among older women but in this latter decade the scale of the decline was much greater for all age categories. Between 1971 and 1981 the ASFRs for women aged over 35 years declined by over 30 per cent (and by nearly 50 per cent for women aged between 40 and 44 years) and by between 20 and 30 per cent for younger married women. The very substantial decreases evident for the older age group may be indicative not only of a fall in fertility as such, but also of a "moving forward" of births with regard to the age of the mother according as women began to marry younger.

It is clearly of interest to try to express these changes in a composite or overall manner embracing all age groups. However, in attempting to do this one must again take account of variations in the age structure of the population of married women aged between 15 and 49 years, which changed significantly over the period under discussion. One means of deriving an overall measure of the change in fertility is to apply age specific fertility rates for a retrospective period to the current stock of married women and then compare the projected number of births thus obtained with the actual number which occurred. If, for example, we apply the 1961 ASFRs given in Table 4 to

the numbers of married women of different ages in 1971 we obtain a projected number of births for 1971 equal to 74,453, while in fact only 65,709 births actually occurred in that year. On this basis it can be held that legitimate fertility fell by 12 per cent over the 10 year interval concerned. If we repeat the exercise for 1971/81 (i.e., apply 1971 legitimate ASFRs to the numbers of married women in 1981) then we obtain a projected births total of 93,661 while the actual number was 68,453, implying a fall of 27 per cent in fertility among married women between 1971 and 1981. These proportionate decreases indicate that legitimate fertility declined by 36 per cent between 1961 and 1981²

TABLE 4: Legitimate Age Specific Fertility Rates 1961-81

Age				Change	
	1961	1971	1981	1961/71	1971/81
	Births per 1,000 Married Women			%	
15-19	608.6	692.8	550.0	+13.8	-20.6
20-24	475.0	457.4	324.8	-3.7	-28.9
25-29	394.5	349.0	261.7	-11.4	-24.9
30-34	296.5	248.0	187.1	-16.4	-24.6
35-39	207.7	160.0	105.1	-23.0	-34.4
40-44	76.8	58.2	30.0	-24.2	-48.5
45-49	5.8	4.3	2.9	-25.9	-30.2

Sources: Censuses of Population. Vital Statistics Reports.

At this point it is of interest to refer back to our earlier discussion of fertility trends in other countries. In the course of those comparisons we emphasised that the rate of decline for Ireland could be deemed to be understated (in terms of the measures used) due to the rising proportion of married women in our population. In other countries the changing marriage pattern had the opposite effect — it tended to accelerate the measured decrease in fertility. However, the size of the above-mentioned decrease in marital fertility in Ireland over the period 1961/81 (36 per cent) suggests that, were these varying social influences taken into account, the decline in fertility here during the two recent decades was not materially different from that in other Western countries. Indeed, since any adjustment made on this basis would, if anything, tend to reduce the rates of decline in other countries, the range of figures indicated in Table 2 relating to total fertility rates, suggests that the fall in fertility in Ireland may have been more rapid than in some other States.

Let us now try to determine whether the above-mentioned national or global changes conceal any regional differences in the manner in which fertility has declined over the past 20 years. It is actually possible to compile projected numbers of births for different counties for 1971 and 1981 in the manner described above and to compare these with the actual county birth totals. The data requirements involve figures for the numbers of married women by age in each county for 1961, 1971 and 1981 and the numbers of legitimate births by

²This method of assessing the relative change in fertility is not, of course, unique. One could, for example, apply the 1981 ASFRs to the 1961 stock of married women and compare the results with the actual 1961 births. In fact this variation in the method yields a somewhat greater decline (of some 40 per cent) over the 20 year period involved.

age of mother in each county for 1961 and 1971. It is not necessary to have detailed analyses of births for 1981 (other than the county totals) since the method involves applying ASFRs for 1971 to the 1981 county aggregates for married women. The results of the relevant calculations are given in Table 5 which shows the actual numbers of births by county for 1961 and actual and expected county birth totals for 1971 and 1981, along with the relative changes in fertility over each decade.

TABLE 5: Legitimate Births. Actual and Expected Totals by County 1961-81

County	1961	1971		1981		Percentage Decline in Legitimate Fertility		
	Actual	Actual	Expected Legitimate Births based on 1961 ASFRs	Actual	Expected Legitimate Births based on 1971 ASFRs	1961-	1971-	1961-
						1971	1981	1981
						%		
Carlow	761	865	913	945	1,324	5.3	28.6	32.2
Dublin	17,160	20,408	23,538	18,829	25,245	13.3	25.4	38.1
Kildare	1,470	2,027	2,129	2,657	3,920	4.8	32.2	34.8
Kilkenny	1,153	1,266	1,361	1,386	2,006	7.0	30.9	36.8
Laois	968	911	1,082	1,035	1,365	15.8	24.2	36.7
Longford	576	554	572	626	909	3.1	31.1	33.4
Louth	1,542	1,876	2,197	1,903	2,624	14.6	27.5	38.3
Meath	1,277	1,680	1,739	2,196	3,035	3.4	27.6	31.0
Offaly	1,149	1,145	1,333	1,169	1,612	14.1	27.5	38.3
Westmeath	1,202	1,146	1,362	1,346	1,782	15.9	24.5	36.2
Wexford	1,726	1,963	2,232	2,152	2,861	12.1	24.8	33.9
Wicklow	1,233	1,609	1,835	1,956	2,636	12.3	25.8	35.3
Clare	1,292	1,548	1,792	1,826	2,478	13.6	26.3	36.7
Cork	6,927	7,990	9,114	7,770	10,894	12.3	28.7	38.6
Kerry	2,081	2,070	2,293	2,312	2,991	9.7	22.7	33.7
Limerick	2,940	3,284	3,883	3,451	4,699	15.4	26.6	38.0
Waterford	1,559	1,722	2,095	1,673	2,330	17.8	28.2	41.0
Tipperary	2,668	2,566	3,115	2,801	3,688	17.6	24.1	36.8
Galway	2,804	3,197	3,279	3,326	4,958	2.5	32.9	34.9
Leitrim	539	456	481	517	657	5.2	21.3	23.9
Mayo	2,053	1,838	1,956	2,200	2,848	6.0	22.8	27.4
Roscommon	973	797	926	891	1,260	13.9	29.3	30.8
Sligo	960	933	1,006	1,014	1,471	7.3	31.1	35.7
Cavan	1,076	934	1,063	1,065	1,353	12.1	21.3	30.0
Donegal	1,871	2,054	2,153	2,431	3,324	4.6	26.9	36.2
Monaghan	890	870	1,004	976	1,391	13.3	29.8	38.5
State	58,850	65,709	74,453	68,453	93,661	11.7	26.9	36.4

Looking first at the trend indicators for the 1960s the data show that there was a fall in fertility in all counties but this varied from a small decline of less than 3 per cent in Co. Galway to nearly 18 per cent in Waterford and Tipperary. Here again one can observe a broad (but by no means total) divergence between the western counties and those in the east and south. Apart from Galway there were quite small decreases in legitimate fertility in Mayo, Sligo, Leitrim, Longford and Donegal (all in the three per cent to seven per cent range) compared with much larger decreases in other counties, many of which were in excess of 12 per cent. However, it should be noted that some eastern counties also experienced quite small declines in fertility, notably

Carlow and Kildare (both 5 per cent) and Meath which showed a fall of only 3 per cent. The fertility decline in Dublin County (including City) was over 13 per cent.

Moving on to consider the 1970s there were, of course, greater decreases in all counties consistent with the much larger decline in fertility generally. However, an unusual feature of the results in this later decade is that quite a number of counties which showed quite small decreases in fertility in the 1960s experienced very substantial declines between 1971 and 1981. In Galway, for example, where, as we have already noted, there was a very small decrease of less than 3 per cent between 1961 and 1971 there was a very large drop of 35 per cent during the 1970s; a similar trend pattern over the two decades is evident in Co. Longford, and in a number of other counties as well. This may be described as a sort of "catching up" phenomenon. In fact, if one considers the relative declines in fertility by county over the whole 20 year period between 1961 and 1981 (as shown in the final column of Table 5) there is not a great deal of inter-county variation, with the exception of the counties of Mayo and Leitrim for which the decreases were significantly below average. The extent of the greater variation in the earlier decade is indicated by the coefficients of variation for the percentage decreases among counties. For the earlier 10 year span from 1961 to 1971 this is 0.456, much greater than in the following decade for which it is 0.119. The corresponding coefficient relating to the percentage decreases over the full 20 year period is 0.109.

With regard to possible reasons behind the past fertility trends which we have identified the period under discussion saw very considerable changes in attitudes in Ireland which involved, in particular, a significant decline in the influence of religions on social behaviour. Family planning and the use of contraceptives became widespread. While one cannot quantify precisely the extent to which these aspects influenced the decline in fertility in Ireland, few would dispute that they were major contributing factors. We have noted, in particular, the more regionally widespread nature of the fertility decline between 1971 and 1981 and it is likely that this reflects a gradual change in attitudes which began in the more urbanised centres and then spread throughout the country generally.

Another relevant aspect was the changing situation with regard to women in employment. During the period under consideration (and in particular during the 1970s) many restrictive employment practices in so far as they related to women were removed and the whole concept of women's position in the labour force (*vis-à-vis* their traditionally held role in the home) changed significantly. However, in this regard it is difficult to distinguish between cause and effect. One cannot be too specific as to whether the improved opportunities for female employment contributed to the decline in fertility or whether falling fertility led to more women remaining in the labour force. We will comment further on this aspect later in the paper.

IV. National Fertility Trends since 1981

Finally, let us assess, in so far as we can from the available data, how the overall national pattern of fertility has been behaving in recent years. A

summary examination of the current births statistics suggests that quite significant changes have been taking place. The number of births has been falling rapidly, declining from a peak level of 74,400 in 1980 to 66,800 in 1983. The decrease was particularly rapid between 1982 and 1983 when the total fell by over 4,000. As a result the annual number of births has reverted to the level which prevailed during the late 1960s. This indicates a continuing and even more rapid fall in fertility but, as we have already indicated, it is necessary to look at the situation in more detail as other factors (such as a changing population structure for married women) may have influenced the situation to some extent. It is of interest, therefore, to follow through our previous estimates and to try to determine whether, in fact, these current figures do reflect a more rapid fertility decline.

TABLE 6: Estimates of the female married population aged 15 to 49 years and the number of legitimate births, 1983

Age	Female Population			Proportion Married 1981	Estimated No. Married 1983 [(4) × (5)] 000	1981 Legitimate ASFR's (births per woman)	Expected No. Legitimate births in 1983 [(6) × (7)] 000
	1981	1986 (proj) ¹	1983 (est) ²				
	000						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
15-19	159.8	160.0	160.0	2.3	3.7	0.550	2.0
20-24	135.7	137.4	136.4	32.3	44.1	0.325	14.3
25-29	121.7	128.6	124.5	71.0	88.4	0.262	23.2
30-34	113.7	126.1	118.7	84.9	100.8	0.187	18.8
35-39	94.5	117.2	103.6	87.7	90.9	0.105	9.5
40-44	80.6	95.8	86.7	85.8	74.4	0.030	2.2
45-49	74.1	80.2	76.5	81.5	62.3	0.003	0.2
Total	780.1	845.3	806.4	—	464.6	—	70.2

Notes: (1) The 1986 projection is based on assumptions relating to external migration and mortality as given in Population Projection No. II (p.25) in the ESRI study (Conniffe and Kennedy (eds) *Employment and Unemployment Policy for Ireland* (1984). The migration assumption involves an overall net external outflow of 20,000 between 1981 and 1986.

(2) The 1983 estimate of the female population aged 15 to 49 years has been obtained by simple linear interpolation, within age groups, between 1981 and 1986.

Using basically the same approach as adopted in the previous section of this paper, one way to proceed is to compile estimates of the number of married women in different age groups in 1983 and apply 1981 Age Specific Fertility Rates to these totals to derive an "expected" number of legitimate births for 1983. This sequence of calculations is shown in Table 6. Before, however, we proceed to discuss the outcome in terms of expected and actual number of births it is relevant to comment on the ratios used in deriving the numbers of married women in different age categories in 1983. This was done by applying proportions for the numbers married (excluding widows) in 1981 to the estimated 1983 female populations in different age groups. These proportions had been rising for many years but a comparison of the 1979 and 1981 Census results appears to indicate a stabilisation in these percentages; in fact the rates fell slightly for women in the younger age groups (less than 29 years). On this

basis, therefore, it was considered appropriate to apply unchanged 1981 rates to the 1983 female population estimates and not to use higher rates which one would have tended to do on the basis of pre-1979 trends.

The expected number of legitimate births for 1983 calculated in the manner described is given in the final column of Table 6. This number, in excess of 70,000, exceeds the actual number of legitimate births by about 7,500. On the basis of an overall aggregate of 66,800 births if we assume the proportion of illegitimate births to be $6\frac{1}{2}$ per cent this suggests a 1983 total of about 62,500 legitimate births. Therefore, the estimated fall in legitimate fertility between 1981 and 1983 was 10.7 per cent, or 5.5 per cent on an annual average basis. The corresponding annual average decline was 3.1 per cent over 1971/81 and 1.2 per cent between 1961 and 1971. Therefore, the indications are that fertility in Ireland is continuing to fall at a rapidly increasing pace.

It is necessary, however, to sound a word of caution here in view of the tentative nature of the estimates. Changes in the marriage pattern could have affected the issue — if, for example, the proportions married continued to fall in the younger age groups as they did between 1979 and 1981. Increased emigration is another factor which could have contributed to the decline. However, in the short interval involved here, it would require really dramatic, and therefore unlikely, changes in relation to these aspects to reduce the national births total to the extent which has actually occurred.

A question of particular importance is whether the current strong downward trend in fertility will continue for an extended period of time. There are a number of considerations which caution against the assumption that we are in the throes of a long-term downward movement. The economically depressed conditions of the last few years must be borne in mind as these may have temporarily influenced both the propensity to marry and the fertility levels of those already married. There may have been a tendency to postpone marriages and births which could result in an upsurge and a reversal of the current trends when economic conditions ease. On the other hand it can be argued that the length and severity of the current recession, which has involved for many a substantial reduction in real income, may have left a more lasting impression, with consequently more long-term effects on social behaviour. One must also keep in mind the radically different marriage trends which have emerged in other Western countries in recent years; one might well ask whether the apparent stabilisation of the marriage ratios in the younger age groups which occurred in the period 1979-81 is the first sign of a similar trend developing here. If this is so, then we can expect an even more pronounced and sustained decline in overall fertility (i.e., relating to both married and single women) leading to a substantial reduction in the annual number of births and to a significantly reduced child population by the end of the decade. Taking all aspects of the situation into account we are of the view that this latter scenario is the more likely outcome. If one carries forward the basic estimation procedure used in Table 6 in calculating the number of births in 1983, and applies this to the projected female population for 1986 it suggests a national births total (covering both legitimate and illegitimate births) of just over 60,000 in that year (the details of this estimation are given in Appendix Table C). This would result in a crude birth rate figure of less than 17 per 1,000

population and a Total Fertility Rate of about 2.35. Indeed if one were to carry forward this estimation procedure further into the future to 1991 it suggests an annual births total in the region of 50,000 in that year and a child population total at least 50,000 below the 1981 level (which was 1,038,000).

Summary of our Results and Some Implications arising therefrom

To recapitulate, therefore, our findings highlight again the relatively high level of fertility in Ireland compared with those currently prevailing in other countries in the Western hemisphere. However, fertility has been falling in Ireland but one can obtain different perceptions of the rate of decline, depending on which fertility measure is used. If one relies solely on the crude birth rate this did not up to recently reflect any change in the Irish situation because of the off-setting effects on the births total of a fall in fertility as such and a rising proportion of married persons in the population. If the total fertility rate is used, this indicator reflects a decline in fertility in Ireland but at a much lower rate than in other developed countries, again because of the influence of the marriage pattern in the population which heretofore has been changing here in a very different manner from that in other countries. However, if we confine our analysis to marital fertility (and here we present data for Ireland only) a substantial fall is evident, the decline in fertility being of the order of 36 per cent over the twenty-year period from 1961 to 1981. The greater part of this decline took place during the 1970s when the decrease amounted to almost 27 per cent. If one allows for inter-country differences in the distribution of the population according to marital status the indications are that the decline in fertility in Ireland over the last two decades has been similar to that recorded elsewhere in the Western hemisphere.

Current national birth totals suggest that the rate of fertility decline has accelerated further in recent years even though changes in the proportions of married women and increased emigration may have also influenced the situation. On the basis of admittedly rough estimates, the indications are that marital fertility has fallen by nearly 11 per cent between 1981 and 1983, or 5½ per cent on an annual average basis compared with just over 3 per cent between 1971 and 1981, and over 1 per cent during the 1961/1971 period. The most likely outcome over the coming years is one involving further declines in fertility and significantly lower numbers of births.

Our analysis indicates fairly significant differences in the level of fertility between Irish counties (the reference date in this regard being 1979). The general pattern appears to be one of higher fertility in the western counties when compared with the more urban eastern and southern counties. The indications are that differences in social group structures are an important influence giving rise to these variations but purely regional aspects may also be a factor. It will be possible to investigate these issues in more depth when the detailed fertility data from the 1981 Census are available. There were quite significant differences between counties in regard to the rate of decline in fertility during the 1960s with generally smaller decreases evident for the western counties. However, in the 1970s, when there was a more rapid overall fall in fertility, many of those counties which experienced higher than average decreases were those where quite low declines prevailed in the preceding

decade (1961/1971). Generally, over the full 20 year period under study there was not a great deal of difference between the counties in regard to the rate of decline in fertility, except in the case of Counties Mayo and Leitrim where the decreases in fertility were significantly below average.

The likely future scenario portrayed clearly raises important implications for key aspects of social and economic policy. Issues which immediately come to mind are the size and composition of the future female labour force and the policy and expenditure implications in areas such as Education, Health, etc. Indeed, some of these areas have already been the subject of detailed study from the point of view of demographic change as a whole. The National Economic and Social Council has just issued three reports on the implications of future population changes for Education and Health Services and for Social Welfare along with, significantly, a fourth document which refers to the further implications of the more recent trends relating to fertility and marriage.³ It is not possible, in the context of this paper, to consider these policy and other implications in detail and the following is merely a summary indication of some of the principal issues involved.

- (a) The relationship between falling fertility and the involvement of women in the labour force. Participation by married women in working life increased substantially in Ireland during the 1970s and existing projections⁴ embody the view that this will continue even if the rate of increase is predicted to decline somewhat over the coming years. However, current fertility movements suggest that women will have considerably fewer constraints (in the form of child or domestic responsibilities) to deter them from entering the labour market in the years ahead. This raises the possibility that these projections, which already involve quite substantial increases in the labour force, may even be on the low side, even though one must bear in mind that there may be offsetting influences, such as the possibility of increased emigration. If the above-mentioned trends lead to a larger female labour force this may, in turn, lead to higher numbers of unemployed women and consequently increased expenditure on unemployment compensation which would tend to partially offset other Exchequer savings which would accrue from lower fertility levels. There is evidence to suggest, however, that attitudinal factors rather than expected family size exert greater influence on married women's decisions to enter the labour force. Fine-Davis (1979) found that the perceived approval of the husband and other close relatives, and a more positive attitude towards employment, were considered to be more important in this regard than the expectation of a smaller family size. Research in the United States (cited in Baldwin, 1982) indicates that the greatest increases in labour participation by married women have occurred for those women for

³The full titles for all four documents are given in the list of references.

⁴The female labour force projections contained in the 1984 ESRI Study (Conniffe and Kennedy, eds.) *Employment and Unemployment Policy for Ireland* are generally based on the assumption that the rate of increase in female participation in the 1980s will be one half of the rate of increase which occurred during the 1970s. However, the projection contained in the NESC Report No. 63 *Population and Labour Force Projections by County 1979-1991* involves assumptions with lower participation rates (maintained at a more or less constant level throughout the 1980s) and consequently lower labour force estimates.

whom employment is most difficult (i.e., those with pre-school children).

- (b) With regard to the educational sector, allowance would have to be made for significantly smaller numbers at primary level. Indeed, the existing trends in births imply such a fall is inevitable anyway; the crucial question is by how much further the number will decline, and for how long this decrease will continue.
- (c) There are also implications for the supply of maternity and child health services, the demand for which will diminish. While this may give rise to an urge to curtail the extent of services, it might be more beneficial in the long run to maintain the same overall level of support and improve the quality of existing services in this area.
- (d) On the social welfare side the level of expenditure on Children's Allowances would obviously be affected and even in the more general social welfare area there would be relative savings since virtually all forms of benefits and assistance involve additional incremental payments for child dependants. With regard to the former one can put an approximate order of magnitude on the extent of the annual saving in expenditure in current terms on the basis of a net fall of 50,000 in the child population by 1991; this would amount to about £7 million in current terms.
- (e) There would also be some savings in the income tax revenue area since fewer dependants would mean fewer claims for allowances to be set off against tax liability.
- (f) There would also be implications in regard to certain aspects of policy on housing. A substantial fall in fertility would lead to a significant reduction in the average completed family size which would have to be taken into account in the context of future planning related to the size of dwellings.

Some of the above-mentioned aspects are of significance, others less so. However, we would venture to say that the combined effects of these and other changes which are likely to arise in Irish society from a smaller births total and a declining child population could be considerable, particularly if the trends which we have illustrated intensify.

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TABLE A: The Proportion of the Female Population in Certain Age Groups who were Ever-Married¹ for Selected Countries in the Years 1960, 1970 and 1980²

Country	20-24 years			25-29 years			30-34 years			35-44 years		
	1960	1970	1980	1960	1970	1980	1960	1970	1980	1960	1970	1980
United States	71.6	63.2	49.8	89.5	88.0	79.2	93.1	93.1	90.5	93.9	94.8	94.4
Canada	59.5	56.5	49.0	84.6	84.6	80.0	89.5	90.9	89.5	90.9	92.9	93.2
New Zealand	59.5	64.8	50.8	87.5	89.3	83.6	91.9	94.1	92.4	92.6	95.0	95.2
Germany, FR	45.4	58.4	38.5	79.2	85.8	77.7	86.7	91.1	90.6	88.2	91.2	94.3
France	44.3	49.6	39.9	80.2	81.8	75.6	87.7	89.2	87.7	90.2	91.4	92.4
Belgium	56.5	59.9	52.8	85.5	88.3	84.7	90.1	92.7	92.2	90.8	93.2	94.4
Netherlands	40.6	54.8	41.7	79.5	86.0	79.1	87.9	92.0	90.4	89.7	92.6	94.1
Denmark	54.1	54.6	19.0	85.4	86.2	58.4	90.7	92.7	82.9	91.8	93.7	93.3
Great Britain	58.3	62.9	46.4	86.3	87.3	80.8	90.9	92.2	91.3	89.1	92.6	94.2
Ireland	21.8	31.5	32.3	54.9	68.8	71.2	70.4	80.6	85.4	77.3	82.5	88.6

¹i.e. currently married, widowed, divorced or separated.

²The years are not necessarily those indicated in the headings in each case, but may be adjacent years, i.e., 1971 for 1970 etc.

Sources: (a) United Nations — *Demographic Yearbook* (various issues).

(b) National Sources (Censuses, Current Demographic Series, etc.).

TABLE B*: 1971 Census of Population. Average Number of Children Born per 100 Families Classified by (a) Socio-Economic Group and (b) Religion

Socio-economic group	All durations	Religious Denomination	All durations
Farmers, farmers' relatives and farm managers	387	Catholic	352
		Church of Ireland	229
		Other stated religions	233
Other agricultural occupations and fishermen	367	Others	315
Higher professional	299		
Lower professional	323		
Employers and Managers	304	Total	345
Salaried employees	305		
Intermediate non-manual workers	315		
Other non-manual workers	339		
Skilled manual workers	347		
Semi-skilled manual workers	340		
Unskilled manual workers	380		
Unknown	288		
Total	345		

*These data have been standardised for age of wife at marriage. Duration of marriage is clearly another factor which influences the number of children born to a family at any one point in time. No correction has been made for the effect of this as between categories but reference to the detailed classified data shows that it does not materially affect the comparative relationships indicated above.

TABLE C: Projected Number of Births in 1986

Age	Proj. Female ¹ Population 1986 000	Proportion Married 1981	Est. No. Married Females 1986 (2) × (3) 000	Proj. 1986 ² ASFRs for married women (per woman)	Proj. Legitimate Births 1986 (4) × (5) 000	Projected single or widowed Females 1986 (2) - (4) 000	Proj. 1986 ³ ASFRs for single etc. women (per woman)	Proj. illegitimate Births 1986 (7) × (8) 000
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
15-19	160.0	0.023	3.7	0.4323	1.6	156.3	0.1372	2.1
20-24	137.4	0.323	44.4	0.2417	10.7	93.0	0.0215	2.0
25-29	128.6	0.710	91.3	0.2003	18.3	37.3	0.0156	0.6
30-34	126.1	0.849	107.1	0.1432	15.3	19.0	0.0145	0.3
35-39	117.2	0.877	102.8	0.0750	7.7	14.4	0.0083	0.1
40-44	95.8	0.858	82.2	0.0189	1.6	13.6	0.0012	—
45-49	80.2	0.815	65.4	0.0022	—	14.8	—	—
Total	845.3	—	496.9	—	55.3	348.4	—	5.1

Total projected births in 1986 = 60,400

¹The 1986 projections are as indicated in Table 6.

²The projected 1986 ASFR's for married women were obtained by first extrapolating the 1971/81 trends for each age group. The ratios obtained in this way were then further reduced to take account of the estimated overall faster rate of decline in fertility since 1981, estimated at 5.5 per cent per year compared with 3.1 per cent between 1971 and 1981. The reduction factor was $0.882 = \left(\frac{0.945}{0.969}\right)^5$

³The 1986 projected ASFR's for single etc. women were obtained by extrapolating the 1971/81 trends for each age group.