

POLICY RESPONSES TO LOW FERTILITY AND ITS CONSEQUENCES: A GLOBAL SURVEY

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Fertility at or below replacement level now characterizes 64 countries with populations totalling 44 per cent of that of the world. Many of these countries have total fertility rates below 1.5 and some have recorded below-replacement fertility for decades. It appears likely that some countries will eventually adopt policies aimed at raising fertility. Accordingly, the paper examines the effect of past policies of this type, and briefly looks to the future.

The consequences of low fertility depend on just how low fertility has fallen and how long it has been at that level. Table 1 lists very low fertility countries (total fertility rate (TFR) below 1.5), moderately low fertility countries (TFR 1.5–2.0), and countries at replacement level, together with their TFRs in 2001 and the period that the TFR had been continually below 2.1. The last measure is probably open to question for some countries as it depends on the ability of the United Nations (2001) Population Division to reconstruct past fertility levels. In the West, fertility began to fall widely after 1965, at first because of a reduction in the proportion of high-parity births (Prioux 1990). Japan followed in 1973 (Retherford, Ogawa and Sakimoto 1996). By the 1990s the TFR had fallen below one in several northern Italian provinces and in the area that had previously been East Germany (Cliquet 1991: 136; Witte and Wagner 1995: 389; Conrad, Lechner and Werner 1996: 349).

Very low fertility is still confined to countries that were part of the USSR and its Eastern European satellites, the southern tier of Europe, Germany and Austria, Japan, Canada and city states in Europe and on China's coast. Moderately low and replacement fertility extends further to include nearly all the rest of Europe, the English-speaking countries of overseas European settlement, parts of the Caribbean and, in Asia, Azerbaijan, Singapore, South Korea, Taiwan, Thailand, Kazakhstan and China, although in the last case there is some controversy about whether fertility is as yet quite down to long-term replacement level (cf. Zeng 1996). If China is below that level, then four-ninths of both the world's population and that of Asia live in countries with below long-term replacement level fertility. None of these countries is found in mainland Africa or South and Central America: even Uruguay

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Table 1 The low-fertility countries, 2001

Country	Region	2001 TFR estimate	Continuous period up to 2001 with TFR below 2.1 (years) ^a
Very low fertility countries (TFR below 1.5)			
Hong Kong	East Asia	1.0	19
Ukraine	Eastern Europe	1.1	27(34) ^b
Czech Republic	Eastern Europe	1.1	20(34) ^b
Armenia	Western Asia	1.1	8
Latvia	Eastern Europe	1.2	51
Bulgaria	Eastern Europe	1.2	24
Slovenia	Southern Europe	1.2	21
Spain	Southern Europe	1.2	20
Russia	Eastern Europe	1.2	16(36) ^b
Macau	East Asia	1.2	14(24) ^b
Georgia	Western Asia	1.2	9
Andorra	Western Europe	1.2	n.a.
Japan	Eastern Asia	1.3	44
Germany	Western Europe	1.3	32
Austria	Western Europe	1.3	29
Italy	Southern Europe	1.3	26
Belarus	Eastern Europe	1.3	24
Hungary	Eastern Europe	1.3	23(43) ^b
Lithuania	Northern Europe	1.3	23
Estonia	Northern Europe	1.3	19(50) ^b
Greece	Southern Europe	1.3	18
Romania	Eastern Europe	1.3	13(39) ^b
Slovakia	Eastern Europe	1.3	13
San Marino	Southern Europe	1.3	n.a.
Croatia	Southern Europe	1.4	34
Canada	North America	1.4	30
Poland	Eastern Europe	1.4	13
Liechtenstein	Western Europe	1.4	n.a.
Moldova	Eastern Europe	1.4	n.a.
Moderately low fertility countries (TFR 1.5–2.0)			
Sweden	Northern Europe	1.5	33
Switzerland	Western Europe	1.5	28
Portugal	Southern Europe	1.5	18
South Korea	Eastern Asia	1.5	18
Taiwan	Eastern Asia	1.5	15

a Some historical series have been changed between United Nations 1999 and United Nations 2001. Linear interpolation between quinquennial mid-points.

b Except for Macau, Eastern European countries which first fell below replacement level in 1950s or 1960s (years before 2001 shown in brackets) but where policy measures raised the TFR above 2.1 during the 1970s: Czech Republic for 10 years peaking at 2.32, Romania for 30 years

Table 1 (continued)

Country	Region	2001 TFR estimate	Continuous period up to 2001 with TFR below 2.1 (years) ^a
Belgium	Western Europe	1.6	29
Singapore	Southeastern Asia	1.6	25
Cuba	Caribbean	1.6	23
Barbados	Caribbean	1.6	19
Bosnia & Herzegovina	Southern Europe	1.6	18
Yugoslavia	Southern Europe	1.6	13
Finland	Northern Europe	1.7	34
Australia	Oceania	1.7	29
Luxembourg	Western Europe	1.7	29
Netherlands	Western Europe	1.7	29
United Kingdom	Northern Europe	1.7	29
Denmark	Northern Europe	1.7	28
Malta	Southern Europe	1.7	28
Trinidad and Tobago	Caribbean	1.7	9
Norway	Northern Europe	1.8	25
Martinique	Caribbean	1.8	18
China	East Asia	1.8	8
Cyprus	Western Asia	1.8	3
Kazakhstan	South–Central Asia	1.8	3
Thailand	Southeast Asia	1.8	3
Dominica	Caribbean	1.8	n.a.
France	Western Europe	1.9	29
Macedonia	Southern Europe	1.9	19
Guadeloupe	Caribbean	1.9	8
Ireland	Northern Europe	1.9	8
Puerto Rico	Caribbean	1.9	0
New Zealand	Indian Ocean	2.0	21
Azerbaijan	Western Asia	2.0	7
Iceland	Northern Europe	2.0	3
Mauritius	Indian Ocean	2.0	3
Seychelles	Indian Ocean	2.0	n.a.
Countries at replacement level (TFR = 2.1)			
Saint Lucia	Caribbean	2.1	0
Sri Lanka	South Central Asia	2.1	0
United States	North America	2.1	0
Netherlands Antilles	Caribbean	2.1	n.a.

peaking at 2.96, Hungary for 5 years peaking at 2.1; Estonia and Russia were more complex. For each TFR countries are listed in order of continuous period below replacement fertility.

Sources: Population Reference Bureau (2001) for current estimates, United Nations (2001) for period that TFR has been below 2.1.

and Argentina, early trail-blazers in the Latin American fertility decline, now have TFRs of 2.3 and 2.6 respectively.

The demographic impact of low fertility

Such low fertility has caused surprisingly little reaction outside academic circles which have held a number of conferences on the subject, usually resulting in books (e.g. Berelson 1974; Campbell 1980; Davis, Bernstam and Ricardo-Campbell 1986; Cliquet 1991; Casterline, Lee and Foote 1996; United Nations 1997). One reason for the slow government reactions is population momentum: age structures are still adjusting to the relatively new low fertility levels and in most cases will not fully adjust for decades. Even Germany, which has been below long-term replacement fertility for the unusually long period of 31 years, still has a rate of natural decline of only 0.1 per cent per annum, and will probably not reach 0.5 per cent for another 20 years, or 1.0 per cent for over 50 years (United Nations 2001; Population Reference Bureau 2001). These are time horizons beyond most politicians and their electorates. In some cases very low fertility may not be maintained. Eastern Europe may stabilize at fertility levels above the recent very low levels if the present political, economic and social upheavals prove transient. The first contemporary political reaction, although muted, was the adoption in 1983 by the European Parliament of a French motion expressing the need to be concerned about population trends (Gauthier 1993: 149).

If fertility remains low, the ultimate demographic impact will be severe, as is shown in Table 2. Column 1 represents the typical European situation around 1960, which was widely felt at the time to represent demographic stability; column 2 represents slightly lower fertility than in the contemporary United States; column 3 slightly higher fertility than in South Korea or Singapore; and column 4 Germany. They are all based on a life expectation at birth of 75 years which should be attained widely in industrialized countries in the near future. An age of 20 years has been taken to represent that of entrance to the workforce in rich, low-fertility, highly educated countries. It should be emphasized that Table 2 portrays the stable situation, still decades away in the countries named in columns 2–4. There will be transitional situations before then which will impose severer age burdens where the preceding fertility decline has occurred over a short period.

It has been argued by Bongaarts and Feeney (1998) that low fertility is partly a transient phenomenon arising from women postponing childbirth to later ages, a view contested by Lesthaeghe and Willems (1999). It may be significant that in the revision of this paper, the passage of two years saw fertility rises in eight of the low fertility countries but further decline in 13 of them, and no movement in 43. It should be noted that the two countries which Bongaarts and Feeney analysed were Taiwan and the United States where no movement took place, but it must also be recorded that the latter, uniquely among developed countries, now records a TFR 0.3 above its level two decades ago (United Nations 2001).

Table 2 demonstrates the main effects of low fertility. They are the following.

1. The main workforce age range, 20–64, of these affluent, highly trained countries remains remarkably similar at all levels of fertility. In the actual workforce, the proportion of women working outside the home has not yet reached its maximum (perhaps 80–85 per cent) in many low fertility countries. Therefore, there

Table 2 Contrasting stable populations with different fertility levels

	Fertility level approximating			
	Europe 1960 1	USA 2001 2	South Korea or Singapore 2001 3	Germany 2001 4
Gross reproduction rate	1.25	1.00	0.80	0.65
Total fertility rate	2.56	2.05	1.64	1.33
% population 0–19 years	30	24	18	14
% population 20–64 years	52	53	52	50
% population 65+ years	18	23	30	36
65+ / 20–64 years (%)	35	44	58	74
Retirement age (years) necessary to make ratio of retired to 20–64 the same as in column 1 (i.e. 35%)	65	69	72	75
% population 15–19 years	7.1	5.9	4.8	3.8
% population 60–64 years	4.8	5.7	6.5	7.0
15–19 / 60–64 (%) ^a	148	97	74	54
Annual rate of natural increase (%)	0.75	–0.02	–0.79	–1.49
Period for population to halve (years)	–	3476	88	46

a Entrants to labour force as % of retirees over the next quinquennium.

Source: Coale and Demeny 1966, West Model Life Tables, Level 23.

is still a potential for a further rise in income- and tax-generating population. The present situation is that the economies of many of these countries are not keeping even the 20–64 age range in employment: Germany has an average retirement age under 60 years and an unemployment rate of 13 per cent. It is possible that this situation could be reversed by a change in economic and social policies (cf. Esping-Andersen 1996).

2. If the young (the first 20 years of life, mostly as students) and the old (65+ years of age) were both equally dependent on the workforce and cost on average the same amount per person, then there would be no macroscopic dependency problem. The real problem is the way politics and societies are organized. Wage earners are typically taxed by the state to support the old (although families also contribute to supporting the old in retirement homes), while a large proportion of private income is spent by parents on their children. In effect, parents tax themselves continually to support the young by their expenditure on their children, usually not resenting it because of the emotional returns. This was once the position everywhere with regard to the old as well, and remnants of this older system persist in some of the high-income East Asian countries, for example Japan or Taiwan. This may not be a socially stable situation, since the old in contemporary industrialized countries typically prefer to believe that

they are rightly being repaid by society for work already done: in contrast to older societies with an upward wealth flow where the old felt that they had the right of support from their dependants in return for the gift of life (cf. Caldwell 1982). It should be noted that the annual total private and public cost of supporting an old person is almost certainly greater than that of supporting a child. Ryder (1997: 12) estimates the cost ratio to be 5 to 3.

3. If the support of the old has to depend largely on taxation and hence on the ratio of the tax-paying workforce to the retired, then the situation of Europe around 1960 can be replicated by delaying retirement in countries with TFRs as low as 1.6 to 72 years of age, and with TFRs of 1.3 to 75 years of age. With the vast diminution of heavy agricultural and industrial labour in the occupational structures of the richer countries, and with the extension of disability-free life, a retirement age of 70 years is by no means unattainable provided that there is an adequate demand for labour. The real problems are social and political. The social problem is that of 'lifestyle' and an increasing desire by many to spend more flexible years of travelling or just tasting alternative ways of life after the working life is over, and hence to retire earlier rather than later. The solution here may be to offer different levels of pension payment according to the age of retirement and perhaps also to offer different levels of social insurance payments during a person's working years: a form of optional taxation. It may well be that our increasingly efficient economies can provide adequately for the old even with a retirement age of 65 or perhaps 60, the real problem being political competition to offer unrealistically low taxation levels.
4. Stabilizing at 1960 European fertility levels would have meant one-and-a-half times as many people entering the workforce each year as retiring from it. In fact, because of the 'baby boom', by the 1970s some Western countries experienced an intake more than double the outflow. In contrast, very low fertility levels can mean the reverse of this, with half as many entering as leaving. This will mean a relatively smaller supply of 'new blood' and an older, but more experienced, workforce. The young should have faster promotion during their earlier years because a smaller proportion of the total workforce is ten or even twenty years older than them. It may be found that structuring a workforce with fewer entrants than persons leaving is no more difficult than it was in the opposite situation a quarter of a century ago, but this will be a matter for experience and experiment.
5. Ultimately, the greatest problem of declining numbers may be just that. National and individual pride may be at stake. Once the issue would have been one of military might, but an increasing reliance on technology, a tendency towards federations of the European-Union type, and the present global politico-military situation, have made this a less significant issue. It is, indeed, remarkable how little soul-searching there has been from Europe since 1950 as its proportion of the world's population has fallen from 22 to 12 per cent. The explanation may be that even its population has increased by 180 million or almost one-third (United Nations 2001; Population Reference Bureau 2001). The United Nations medium variant projection shows Europe declining over the next half-century to six per cent of global population with an absolute reduction of 124 million people (back to its 1960 population). Such a decline could well give rise to a spurt of cultural nationalism especially in the most affected coun-

tries like Germany, where population is projected to fall by over 13 per cent from 82 million to 71 million. Even here, annual decline is not expected to exceed a quarter of a million people until shortly before the year 2030. That nationalism might be at odds with the perceived need to limit the speed of population decline by raising immigration rates, but it might also yield quite dramatic policies aimed at raising the birth rate.

Lessons from history

History provides many examples of feared relative or absolute population decline, and, indeed, these examples make the calm acceptance of the present situation surprising. Most of the stratagems for raising fertility or coping with the consequences of low fertility have also been identified and tested.

The ancient Babylonians, Greeks and Romans all attempted to raise fertility by means of laws encouraging marriage and strengthening the family (Glass 1967: 86–90). In modern times, the French who, starting in the late eighteenth century, had experienced the first national fertility transition, had pronatalist movements from the late nineteenth century and introduced family allowances in the form of payments to families graduated by the number of children successively into various sectors of society starting from 1900 (Bourgeois-Pichat 1974: 548; Gauthier 1993: 145ff.)

Elsewhere, although there were pronatalist movements in Britain, France and Germany during World War I (Wall and Winter 1988: 372–452), policies to augment fertility did not come into being until the economic depression of the 1930s when TFRs fell below long-term replacement levels in a range of countries in Western and Central Europe. The political reaction in Europe at that time had been conditioned by the Eugenics Movement which, from the end of the nineteenth century, had been deploring the small family size of the better educated, by books in the 1920s such as Spengler's (1926) *The Decline of the West*, and in the 1930s by faulty population projections based on cross-sectional fertility rates, such as Charles's (1934) *The Menace of Under-population*. Nevertheless, cohort fertility was below replacement level in both Sweden and England and Wales for all women born between 1900 and 1920, and subsequently was not to return to these low levels until the cohorts born around 1950 (Bourgeois-Pichat 1986: 9).

The Depression policies provide an interesting forerunner to contemporary political reactions. The dictatorships of both right and left identified falling fertility with loss of military manpower and national enfeeblement, and accordingly attempted direct methods to raise the birth rate while Germany alone moved towards 'racial hygiene' and selective breeding. There were in Germany, Italy and the USSR exhortation and prizes for large families, and a tightened control of family planning and abortion (Glass 1967: 219ff; David, Fleischhacker and Höhn 1988; Ipsen 1996; Quine 1996: 129ff). In Italy, as early as 1926 and with shades of the Emperor Augustus, a bachelor's tax had been instituted.

In contrast, the liberal democracies identified low fertility with the difficulties of the family. Indeed, it is difficult to determine whether politicians or even governments were primarily concerned with low fertility or with helping the disadvantaged family, a circumstance which allowed collaboration between right- and left-wing politicians. The ambiguity is compounded by the fact that programs mooted or begun in the 1930s often did not reach fruition until after World War II

and then were folded into the fabric of the new welfare states. France had formulated its Family Code by 1939 but this was not fully enacted until 1945. It embodied family allowances, premiums for first births, and assistance with housing and with loans for establishing households (Bougeois-Pichat 1974; Gauthier 1993: 145–149). Sweden was stirred in 1935 by the publication of Alva and Gunnar Myrdal's *Crisis in Population Policy*. Here again, it is difficult to distinguish between fertility policy and that directed at family welfare and both were decades later to be intertwined with policies aimed at gender equality (Chesnais 1996: 732ff). Two important points should be made about the policies of the democracies. The first is that their lack of proscription did not extend to the practice of contraception and induced abortion; in these matters restrictions which date back to the nineteenth century were tightened in the 1930s, but pronatalism is in this case confounded with issues of sexual and religious morality. The second point is that these family and welfare policies were invoked in Northern and Western Europe and in such overseas settlement countries as Australia and New Zealand; they were almost absent in the United States.

The next phase of population policies is more recent but in conditions that have almost disappeared. They were manifested in the early stages of the present fertility decline in Eastern Europe where very low fertility levels were first reached; but they are history in the sense that the political regimes that were able to take such actions, and most of the programs they instituted, have now been dismantled. The programs are of interest to us because they probably did raise fertility, at least for a time, by incentive systems that transferred a larger proportion of the national income¹ to this purpose than any democratic government would be likely to achieve. The nearest parallel in the West is the French system and that was finally put in place by an all-party government straight after World War II during a period when the electorate was accustomed to central decisions involving massive resources.

The early Eastern European fertility decline was apparently triggered by the liberalization of abortion laws, first in USSR in 1955 and subsequently in all of Eastern Europe except East Germany and Albania. This occurred in conditions of housing shortages and with a very high proportion of women in the workforce. The measures to increase fertility included most of the positive ones that have ever been suggested: child care allowances, taxation deductions for children, paid maternity leave, shorter working hours for mothers of young children, paid leave to care for sick children, lump sums at birth, large loans for setting up a home with fractions of the loan cancelled with each birth, rent reductions following each birth, subsidized nurseries, free school meals, subsidized school books, paid holidays for families, and, of course, free health services as part of the welfare state. Policies were not aimed at encouraging women to leave the workforce, and, except in Romania, only mild reversals of abortion liberalization occurred. In contrast, Romania outlawed abortion in October 1966 thus doubling the birth rate by the following year. There is unlikely to be much in the way of future fertility incentives that was not attempted in Eastern Europe in the two decades after 1965 (McIntyre 1975; Heitlinger 1976; Berelson 1979; Frejka 1980; McIntosh 1981; Andorka and Vukovich 1985; Höhn 1988; Büttner and Lutz 1990; Monnier 1990; Avdeev and Monnier 1995).

Some Eastern European countries achieved limited success in raising fertility levels above the replacement level. United Nations (2001) reconstructions of demographic trends now credit both the Czech Republic (present borders) and Hungary

Table 3 Responses by industrialized countries to the 1989 United Nations Survey of Attitudes to Demographic Trends (n = 37)

Demographic factor	Number of countries with any mention of demographic factor being:		
	too low	too high	satisfaction only expressed
Fertility	13	2	22
Population growth	11	3	23
Mortality	0	37	0
Immigration	1	11	25
Emigration	3	9	25

Source: United Nations 1989.

with rises of the TFR of 0.4 above previous low points to 2.3 and 2.1 respectively. Romania for one quinquennial period after abortion was banned raised its TFR by 0.9 to 3.0. Such rises were achieved by policy ploys unsupported by popular movements. Caldwell (2001) argues that the move to low fertility in the West after 1965 was partly the product of a mass movement hailing the virtues of smaller families and low rates of population growth. It is possible that in parts of a future Europe such popular movements could welcome higher fertility and slower population decline and would be assisted by strong government programs

The contemporary world

By 1989 many industrialized countries were reporting in answer to United Nations population-policy enquiries that both population growth and fertility were too low (United Nations 1989; Gauthier 1991: 4). The responses are summarized in Table 3, which is noteworthy for the lack of demographic apprehension expressed by the majority of governments. Countries worried about fertility levels included France, Greece, Luxembourg, Switzerland, Austria, Belgium and Germany. The conspicuous absentees are the English-speaking and Nordic countries, and the Netherlands.

Most Western countries are somewhat apprehensive of very low fertility as indicating, together with lower levels of formal marriage and higher levels of cohabitation, divorce and mothers in the workforce, that something undesirable or pathological is happening to the family and that it occupies an 'ever shrinking space in our lives' (Bumpass 1990: 493). This has been explained as an inevitable result of the passing of family production and the continuing move toward a more fully capitalist society with all production outside the home and most people living in huge urban complexes (Caldwell and Ruzicka 1978; Caldwell 1981, 1982). Davis (1997: 623–624) advanced the view in 1936 that 'the family is not indefinitely adaptable to modern society', and that 'a new system of reproductive institutions' would need to be invented so that 'child-bearing would once again be more motivated'.

Lesthaeghe and Meekers (1986) and Lesthaeghe and Surkyn (1988), examining the cultural ideas and social fashions that have swept the West, warned against underrating social factors. Caldwell and colleagues (1988) found evidence for this proposition from a 1986 Australian study which showed that a high proportion of young adults were deferring both marriage and childbearing not for economic reasons but because they wanted by travel and other experience 'to find themselves' as individuals. The authors concluded that

Major issues for the future are whether quality couples can fully achieve their aspirations while having children at all, and whether quality individuals can achieve their aspirations while marrying (Caldwell *et al.* 1988: 140).

Ariès (1980) had earlier noted some of these changes. Two qualifications should be made. The first is that all these social changes are driven by the underlying economic ones, interpreted, admittedly, in various ways by different cultures. The second is that the Australian study showed that

The family size desired at first marriage in Australia has fallen very little over the last 30 years. Desired family size is still closer to three than two, and very few women report wanting fewer than two... Whatever the reason, original desired family size exceeds completed fertility and has done so for many years (Bracher and Santow 1991: 48).

This remains true in Australia (McDonald 1998) and many other low-fertility countries (van de Kaa 1998: 33–34).

Nevertheless, those governments that wish to reverse the fertility decline want to do so for very specific reasons: the extra burden imposed by a rising proportion of old population on, first, the old-age support systems, and, second, the health system where the number and cost of treatments rise with the patients' age, especially after 65 years (Clare and Tulpulé 1994: 43). Additionally, governments are concerned about the eventual shortage of new entrants into the labour force (McIntosh 1981: 186ff; Gauthier 1991: 4). Chesnais (1990) showed that currently the old-age populations of industrialized countries are increasing at a faster rate than total populations ever have. Freedman (1995: 23) reported that

Apart from China ... governments in the other low-fertility countries of East Asia, as well as some in Southeast Asia, are anxious to raise fertility to at least replacement level... they now meet to discuss ways to restore replacement-level fertility because they are concerned about the aging of their populations and the shrinking of their entry-level labour force.

McIntosh (1981: 186) reported, after interviewing large numbers of French, German and Swedish policy-makers in the late 1970s, that 'the concern that is uppermost in the minds of politicians in all three countries is the effect of age-structure change on the financial bases of social security schemes'. In 1982 the first United Nations workshop on aging was held, and many more were to follow.

The relative policy silence

The most significant aspect of the present period of low fertility is the near-silence on the subject from governments and the public alike. This contrasts markedly with the situation before World War II. In the first years of the century, France and New

South Wales had both held government inquiries about their low birth rates and the need for intervention when their TFRs were 2.9 and 3.5 respectively. The excitement over demographic defeat in the 1930s occurred at a time when the countries involved all had positive population growth. Reasons have been suggested by a number of demographers² for the present apparent lack of concern.

The first reason is that few countries have yet experienced declining population. Most that have are in Eastern Europe and are faced at present by more immediate challenges. Even Germany will not experience steep population declines for another 20 years. America's fertility is still at replacement level and the most recent conference publication on its fertility (Casterline *et al.* 1996) does not even mention population policy. Furthermore, the United States and the other English-speaking overseas European settlement countries, Canada, Australia and New Zealand, will probably be able to maintain their population sizes indefinitely with modest immigration streams that do not exceed rates experienced in the recent past and which do not markedly change their population compositions from the multicultural ones they have already developed. Many societies are not yet convinced that the present low fertility is permanent, remembering the passing of the low fertility of the 1930s and the baby boom of the 1950s. They received support from believers in Easterlin (1968) cycles and from the fact that the United Nations (1995: 149) 1994 *Revision* medium and 'most likely' (p. 143) projection still argued for a return to replacement fertility. The latter buttress has now been removed as the United Nations (2001) 2000 *Revision* postulates long-term TFRs of 1.8 for Europe, 1.9 for Eastern Asia, around 1.9 for Australasia, Singapore, Thailand and the three Caucasus countries, and 2.08 for North America.

Some governments feel that it would be inappropriate to argue for higher fertility while the world as a whole is faced with another near-doubling of population and a doubt whether it can easily sustain such numbers. The English-speaking countries, the Nordic ones and the Netherlands all told the United Nations (1989) enquiry that they were not worried about low fertility levels, and they were probably at least partly influenced by the fact that they were all major donors assisting developing countries to reduce their fertility.

Many low-fertility countries are not convinced that low or negative levels of population growth are harmful and note that there are economic analyses that support this view (e.g. Espenshade and Serow 1978; Espenshade 1978). They see the solution to the problem of finding funding to support the aged as political rather than economic or demographic. There is also the argument that low or negative rates of population growth are beneficial in that they protect the environment and ensure long-term environment and resource sustainability. As early as 1974, Berelson (p. 772) listed environmental concerns as militating against actions to raise the birth rate in the United States, Britain, Japan and Australia. In Australia, a country with less than one-hundredth the population density of Japan or one-thirtieth that of Europe, Betts (1989) expressed a widely held view when she argued that the present population should be regarded as the most desirable because anything higher would place undue pressure on the environment and the quality of urban life.

Many Western societies believe that any attempt to raise fertility would be likely to be intrusive and, in Eisenhower's words, would place the government in the bedroom. Feminism and other movements have made it impossible to curtail contraception and, in most countries, to ban abortion. There is a widespread feeling

that it is not the government's role to define the desirable type of family or individual lifestyles, although some governments may come to feel that they should do more to establish conditions which facilitate desires for higher fertility.

In some, but not all, countries there is support for financially assisting families with children, single mothers to raise their children, and mothers of young children to stay in the workforce. Most of the support is, however, on grounds of social and gender equity and fits the aims of social welfare states. In the United States and Japan such assistance is not legally mandated because the welfare state did not fully develop, but in the former many employers provide compensation for such leave through health insurance policies. Some of the strongest supporters of such assistance do not believe it will raise fertility (see Gornick, Meyers and Ross 1998).

Indeed, such assistance runs against one of the strongest forces of our times, economic rationalism with its arguments that taxation should be lower and that economic growth depends on at least the partial reduction of social welfare expenditure. Underlying these specific aims is a philosophy which holds that the market, Adam Smith's invisible hand, is likely, anyhow, to produce the most satisfactory economy and society. This implies that either fertility will rise again as the market answers the problems of working mothers or continuing low fertility is what the people really want. In addition, McIntosh (1981, 1983) has cogently argued that no liberal democracy, not even those most attuned to welfare-statism, would be prepared to spend a fraction of the sums that were allocated under authoritarian Eastern European regimes to raise fertility.

Finally, it might be noted again that the older predominant argument of the need for national military strength is no longer raised or apparently even considered seriously.

Half the people in the world with fertility at or below long-term replacement level are found in China. Here there appears to be little thought of policies aimed at raising the fertility level (Jiang 1997). The reasons appear to be that the population of China is little, if at all, below replacement level; that it has taken a considerable degree of coercion to get that far; and the view that even some population decline would probably not prove harmful. The one sign of a policy reaction to low fertility is experimentation in some areas with a reduction in coercion, but this is rather a reaction to external condemnation than an attempt to reduce the rate of fertility decline.

Reasons advanced for very low fertility

If policies are to be developed to raise fertility or to restrain it from going lower, then it is necessary to be clear about the causes of very low fertility. One point is rarely made, possibly because it is no longer policy-relevant. After 1965, fertility fell widely in the Third World at least partly because there were new and better methods of fertility control available: the pill, IUD and associated copper-coated devices, new methods of female sterilization, suction abortion and increasing access to legalized abortion; and because the 'population explosion' debate had increasingly legitimized birth control (Caldwell 2001). In Matlab, Bangladesh, fertility fell to a new level every time a new effective type of contraceptive was introduced (Caldwell and Caldwell 1992). Almost certainly the same factors played a role in the passing of the Western baby boom. They certainly were important in achieving low fertility in Asia.

Some believe that lower fertility is simply a reaction to bad times after the end of the high-employment, rapid-growth period stretching through the 1950s and 1960s. Others would add the insecurity of job tenure, brought about at least partly by the application of economic rationalist theory and the reduction in the coverage provided by the welfare state. There has been a weakening, at least in the real value of benefits, of the pronatalist programs in France (McIntosh 1981: 185) and Italy. In the latter, child benefits declined between 1970 and 1992 from 13.3 to 3.9 per cent of the social security budget. Hobcraft (1996: 523) blames occupational insecurity since the early 1970s for the British fertility decline, while Hoem and Hoem (1996: 12–17) attribute the Swedish rise in fertility during the 1980s to massive social security expenditure, and the fall in fertility during the 1990s to economically worse times, as the Swedish economy found itself in trouble and government expenditure was trimmed for entrance into the European Union in 1995, resulting in an unprecedented rise in unemployment and major social welfare cuts. Witte and Wagner (1995) see no need to go beyond economic and child-care explanations when analysing the fall in the East German TFR from 1.6 at Unification in 1990 to 0.7 in 1993, or half the West German level at that date:

Couples, knowing that unemployment is high, that their labour market value is relatively low, and that there are [now] less generous maternity benefits, perhaps less flexible employers, and far fewer child care alternatives, respond rationally to socio-economic change by limiting fertility (Witte and Wagner 1995: 394).

But most explanations for very low fertility centre on the mass employment of married women with children, an explanation that must be tempered by noting that mothers were flooding into the job market in most Western countries well back into the baby boom years of the 1950s and 1960s. Some explanations emphasize that full-time employment, based on preceding lengthy education, gives women an alternative role to that of mother and even wife. The greatest emphasis has been placed on the difficulties encountered by women seeking not only to work full-time but to give sufficient commitment to the work to gain recognition and promotion while at the same time shouldering the great majority of housework and taking long periods off to give birth and to look after young children.

McDonald (2000) essentially posits a socio-economic change model with some social changes lagging behind others and so causing a fertility crisis of indefinite duration, the length of which will be determined by societal and governmental reaction. Western industrial society has until recently been characterized by major gender differentials in the sphere of work, with the husband as 'the breadwinner' working outside the home and bringing home money for purchases while the wife has been responsible for all work within the home including child care. There has, in recent years, been a move toward gender equality in both education and work outside the home. Nevertheless, women are handicapped in their ability to work, obtain continuous employment, and rise in the promotion ladder, by pressures to cease work for childbirth and when the children are young because they still undertake the majority of child care and household work. In this predicament they may choose to have only one or two children or even none. The problems can be mitigated by government intervention to provide free or inexpensive child care facilities and facilitate temporary movements out of the workforce, and by a major participation in domestic tasks by husbands. Both circumstances exist to a greater

extent in Nordic countries and Northwest Europe than they do in Mediterranean Europe and Japan with the result that the current TFR in Northern Europe of 1.7 contrasts with levels of 1.3 in more patriarchal Southern Europe and Japan. McDonald draws on Abbasi-Shavazi and McDonald (1997: 18–19) to show that Australians of Italian and Greek origin, with a cultural tradition of women doing most household tasks, have lower fertility than other Australians who are predominantly of Northern European descent. The anomaly of the United States, which records both the industrialized world's highest fertility and lowest government support for families, is partly explained by the access of many families to affordable child care (Rindfuss and Brewster 1996: 264), arising from the wage structure and probably also by illegal immigrants working (it might also be noted that Hispanic migrants have raised the US TFR by 0.2 points). Rindfuss, Brewster and Kavee (1996) argue that in the United States fertility declined because women changed their attitudes towards working without changing their views on the amount of care children needed. Women also mitigate the problems of working by having a very different work profile from men with consequent impact on their incomes and promotions. Sweden records only 10 per cent of women as housewives by listing 30 per cent as full-time workers, 40 per cent as part-time, and 20 per cent as students or in similar activities (Hoem and Hoem 1996: 13). The last category is still close to 20 per cent at 35 years of age.

Policies available and those put into practice

The policies available are divided into attempts to raise fertility (or to substitute immigration), or the acceptance of low fertility and the modification of institutions so as to meet its challenges. Many countries may do both, although rarely if ever is fertility likely to rise far enough to rule out the need for institutional change. No longer can the state ban contraception, although abortion will probably remain controversial, especially in the United States. The one area which may become more subject to policy direction is that of sex-selective abortion, especially in East and South Asia where compatibility between low fertility and strong son preference may lead to an increasing level of the practice (Park and Cho 1995).

Nearly all the methods likely to be used to raise fertility have been implemented over the last half-century by either France or communist Eastern Europe (Bourgeois-Pichat 1974; McIntosh 1981; Höhn 1988; Heitlinger 1976; Gauthier 1991, 1993, 1996). They include bonus payments for births, family allowances, paid maternity and parental leave, leave to care for sick children, tax relief for parents, care facilities for young children or tax relief for child care, flexible work arrangements for mothers and guarantees of retained promotion rights, labour force re-entry training programs, housing benefits for families with children, and educational supplements for children. Several points should be made. The first is that none of these programs costs at present anything like the expenditure made in Eastern Europe a generation ago, and they are unlikely to do so in the future. The second is that in real terms their value has been falling in recent years, especially as European Union and Single Currency requirements are met. The third is that many of them are indistinguishable from social welfare provision and the latter is the most frequently proclaimed aim. A publication of the Council of Europe (1978: 254) stated:

Population policy cannot be separated from overall social policies. It must be geared to the same objectives ... for this reason, it is frequently a compromise, which may lessen its effectiveness from the demographic point of view.

Thus, scaling down social policies is likely to lower fertility levels.

The fourth point is that there have evolved different kinds of economic and social policies and attitudes to state intervention. In terms of per capita social welfare cash transfers expressed as a proportion of the average wage there were in the West in 1986 three groups of countries: (1) those countries, referred to somewhat disparagingly by *The Economist* magazine as 'Colbertist' after Louis XIV's Minister of Finance, where the transfers are large, 20–24 per cent: France, Belgium, Luxembourg; (2) those with medium transfers, 12–14 per cent: Norway, Switzerland, Sweden, United Kingdom, Greece, Germany, Finland; and (3) those with low transfers, under six per cent: Australia, Denmark, New Zealand, Canada, Japan, Ireland, Spain, USA (Gauthier 1991: 10). In terms of the proportion of 3–4-year-old children in publicly funded day care, the division is broadly similar, but this time Britain joins the other English-speaking countries in the low-spending group where Thatcherite government policy aimed at reducing all social expenditure (Gauthier 1991: 13). It might be noted that the countries categorized as (1) and (2) record slightly lower average fertility than group (3), hardly a measure of policy success, but this may merely mean there is less pressure on group (3) to implement such policies.

Action to halt fertility decline or to raise fertility may also take the form of exhortation to have children or to abjure contraception. This was the policy of Fascist Italy. In contemporary Europe only France has in any sense adopted this approach. However, Asia may be different. While fertility decline in the West was not characterized by government leadership, both governments and elites urged such decline in Asia, apparently with some success (Caldwell 1993). They may play the opposite role once governments decide fertility is too low. Government exhortation appears to have halted for a time Malay fertility decline in Malaysia (Freedman 1995: 15–17), but the Singapore government does not seem to have had the same success. Religious elites may during the 1980s have slowed fertility decline in the Philippines and Iran (Ladier-Fouladi 1997).

An obvious policy for preventing population decline is immigration. This policy probably will be adopted, if low fertility persists, by all the English-speaking countries of overseas European settlement: USA, Canada, Australia and New Zealand. All have experienced immigration-induced growth of half to one per cent per annum even when fertility was high (and much higher immigration levels earlier in their histories), sufficient to compensate indefinitely for TFRs as low as 1.6. All are consciously multicultural societies and would probably agree to such intakes to prevent population decline. McIntosh's (1981: 187–188) interviews in Europe convinced her that the low-fertility countries of Europe, with a strong sense of their historical, ethnic and cultural identity, would resist immigration on this scale, as doubtless would Japan (see also Gauthier 1993: 153; Lesthaeghe and Surkyn 1988). It should be noted that immigration, other than that of male guest workers who are never joined by wives or children, would probably have little long or medium-term effect on the age structure. Young (1990, 1994) has shown this quite clearly in the case of the Australian experience.

All countries with below replacement level fertility will have to modify a range of institutions to meet the needs of a very different age structure from that of the past. There will be a need for fewer schools and smaller universities even before the population stabilizes at its low fertility level. But the greatest need for change will arise from the different age structure, with an unprecedented proportion of old people. The greatest challenge will be to pension systems, old age care systems, and health systems or health insurance. In every one of these areas experimentation has already begun, although for many moderately low fertility countries there is no immediate crisis; the US Council of Economic Advisers (1997: 448–449) reported that the American social security system would be in no great difficulty until the third decade of the twenty-first century. A comparison of current pension expenditure compared with the situation two or three generations ago shows huge increases, but these are not solely the result of the changed age structure but also of better and more complete social security for the old.

As we noted earlier, the real problem with old-age pensions is not the ratio of the working age population to the old, insofar as moderate rises in the retirement age can adjust the situation, but the fact that modern populations are more reluctant to make expenditures on the old than on the young. This is partly because the young live in the same household as the wage-earners and much of the expenditure is subsumed as household costs; but it is also because the notion of the old as dependants has largely been lost, and there are intergenerational resentments when either private or government expenditure on the old rises steeply. In Asian countries, such as Japan, Taiwan and Singapore, where the tradition of support of the old within the home has not been entirely lost, attempts have been made to encourage the retention of this system. Ogawa and Retherford (1997: 59ff.) report Japan's efforts to bolster the residence of the old with their children. Of the population aged 65 years or more, 56 per cent lived in three-generation households as late as 1972, a far higher proportion than in the West, but, because of changing values and separation caused by the younger generation's rural–urban migration, this proportion had fallen to 33 per cent by 1995 (Ogawa and Retherford 1997: 76). Japan still has only two per cent of the aged living in institutions compared with four per cent in Germany and nine per cent in Sweden (Ogawa and Retherford 1997: 70).

For most countries, one answer to the changing age structure is to cut the real value of pensions. This is increasingly politically difficult as the aged, and those nearing that state, become an ever bigger part of the electorate. Indeed, Preston (1984) has argued that in the United States 'grey power' has in recent years influenced expenditure to be directed towards the old rather than children. The major solution – a political one – will probably be to give the appearance that the old are supporting themselves. This can be contrived by separating normal taxation from social security payments as in the United States, and steeply increasing only the latter. Or it can be made closer to the truth by having individuals insure themselves by contributing to private pension or superannuation schemes. More commonly, it is made compulsory for both the individual and the person's employer to contribute, thus disguising in each case what is in effect additional taxation. There are gains and problems in taking this route. The money becomes private investment instead of remaining with government but it may grow to huge sums with less than optimal avenues for further investment. There may be a problem of excess saving paralleling the situation in contemporary Japan. The government will probably be

forced to guarantee the individual against defaulting firms and to pay the employer's share for the self-employed, itinerant workers and the unemployed. This will, of course, result in different levels of pension, as is already widely the case (but not for government pensions in Britain, Ireland, Australia and New Zealand). Japan is at present considering the option suggested in Table 2 of this paper, namely raising the age of retirement or when pension payments begin, and a United States bi-party committee privately convened has made the same suggestion.

There are also problems because of the steeply increasing demands for institutional care of the old. This is not a problem which can easily be addressed by adding the cost to the social security tax because only a minority of the old need full-time care in old-age or nursing homes or in hospitals. Most low-fertility countries encourage the old to stay in their own homes or with relatives and attempt to facilitate this by visiting services or day care. The services may include providing meals, helping with dressing or bathing, and advising on health. For those old people who are transferring from residences they own to institutions it might seem common-sense to demand the sale of the residence to allow reinvestment in their new home, as has in effect been done in Britain. The Australian government attempted this but withdrew after an electoral backlash at what was regarded as an attack on the old.

The public health systems and health insurance schemes are facing problems because of increasingly expensive technology and because a growing proportion of their members are old, and so need more frequent services and are more likely than the young to require the use of expensive high technology. Adjustments to the systems will be necessary and none will prove to be very palatable to the electorate. Possible adjustments include raising premiums, establishing differential premiums according to the type of health cover the person wants or according to age, limiting available services, refusing to cover certain procedures for persons beyond a given age, restricting purchases of high technology, limiting pathology testing, and putting pressure on doctors and hospitals to keep costs down. The latter may be achieved through the pressure of purchasing agents on hospitals and health suppliers. Experience has been gained in the United States with Health Management Organizations and in the British National Health System with the General Practice Budget Holder model. Japan has enacted a compulsory insurance scheme whereby everyone over 40 years of age from April 2000 has to pay a monthly premium to ensure nursing care for the elderly (JOICFP 1997:1). The United States is in the unique situation of offering fully government paid services only to the old, with a high cost per capita but apparently lower age-specific mortality among the old than would be expected from the experience of the younger population.

The effectiveness of policies aimed at raising fertility

The conventional wisdom is that government expenditures aimed at raising fertility achieve little or nothing (Berelson 1974: 788; Council of Europe 1978: 242–244; Cliquet 1991: 137–138; Gauthier 1991: 30), and this may be true for most industrialized democracies. Gornick *et al.* (1998) have computed index values for the benefits given in these countries to help working mothers with children under three years of age, and it can be shown that these indices are not significantly related to fertility levels. They also report that the English-speaking countries, which provide relatively little government support for crèches, record the largest employment drops

for women with children under three years (Gornick *et al.* 1998: 16), but here again these are countries with relatively high fertility.

But specific country studies give a somewhat different picture, although only to a minor extent in the liberal democracies. Calot calculated that France's policies raised the TFR by only 0.2 to 0.3 children, but, if fully implemented, the rise might have been half a child (Höhn 1988: 467–468). Sweden's experience is also of interest, although, with regard to the 1930s and 1940s, Hoem and Hoem (1996: 4) point out that fertility began to rise before any of Alva and Gunnar Myrdal's program was enacted. Nevertheless, they believe that massive government expenditure probably did contribute to the rise in Swedish fertility in the 1980s (Hoem and Hoem 1996: 15–16; Hoem 1990). Gustafsson and Klevmarken (1993: 102, 114 ff.) record that Swedish child-related transfers rose between 1973 and 1991 from three to six per cent of GDP, mostly on public expenditure on the day care of small children, apparently increasing the female labour supply, and probably modestly raising fertility. Olah (1996) analysed the Swedish experience and concluded that the introduction of paid paternal leave increased the chance of families having more than two children.

There is greater certainty over the experience of Eastern Europe during the 1960s and 1970s and nearly every specific study concludes that the massive transfers, amounting to up to 10 per cent of the government budget (Frejka 1980: 70–71) effected a significant rise in fertility or the cessation of fertility decline (Heitlinger 1976: 133; Berelson 1979: 221; Frejka 1980: 87; Andorka and Vukovich 1985: 410; Büttner and Lutz 1990; Monnier 1990: 127–132; Avdeev and Monnier 1995: 25). The clearest case is that of Romania after 1965 when abortion was made illegal and other restrictive measures on fertility control introduced: the TFR almost doubled from 1.9 in 1966 to 3.7 in 1967 and, at 2.6, was still the highest in Eastern Europe in 1975, an effect which Berelson (1979: 205, 221) compared with the earlier American baby boom. Elsewhere, the measures were mostly positive incentives. Avdeev and Monnier (1995: 25) calculate that the 1981 Russian measures probably raised the fertility of affected cohorts by 20 per cent. The 1976 policy in East Germany resulted in earlier childbirth (Monnier 1990: 139–140), and raised fertility generally according to Büttner and Lutz (1990), who however say this was without changing the order-specific mean ages of mothers at childbirth. Most analysts believed that the effect of these measures was dwindling over time, but dramatic political changes have made proof impossible.

Gauthier (1991: 8) used 1988 data to examine whether women with one or more children were more likely to remain in the workforce if governments spent more assisting them, and concluded that they were. Furthermore, at that date in Western and Northern Europe they were also more likely to have higher fertility. Rindfuss and Brewster (1996: 262), examining 20 OECD countries, also concluded that fertility rises with women's participation in the labour force but would probably take the view that this meant government intervention was not helpful.

Finally, the Malaysian government appears to have stopped Malay fertility decline, admittedly at a TFR of 4.3, 'by building on religious and cultural values' (Freedman 1995: 15–17), while leaving Chinese and Indian fertility to continue its fall. Govindasamy and DaVanzo (1992) cautiously note that economic policy also differentially affected the races.

The future

Very large government expenditures probably could raise fertility levels in the West, especially if they were aimed at allowing the mothers of young children to stay in the workforce (McIntosh 1981). Such large expenditures are unlikely to happen in the years immediately ahead. Gauthier (1996: 205ff) gives as the three potent reasons: (1) tight budgets, (2) the growing political power of the old which will shift policies away from those that expensively assist young parents, and (3) the strength of non-interventionist and self-support ideology. Point (3) is what we have referred to as 'economic rationalism' and subsumes point (1) as well. Bumpass (1990: 493) suggests that there will be ever more debate but little action. Folbre (1997) and McDonald (2000) argue that an ideological attack on the patriarchy, with the aim that husbands should provide wives with much more assistance within the household, would have some effect. It would certainly be cheaper. Such a movement is likely to intensify, mostly for reasons of gender equity, but it could gain greater momentum if linked with overcoming very low fertility. Hobcraft (1996: 523) blames low fertility on a specific feature of economic rationalism, job insecurity, as does Chesnais (1997a, b) in two papers reminiscent of older French population concerns. The economic ideological drive that has caused this might be blunted if only because there are stronger reasons for doing so than demographic ones.

For the present, governments have sufficient intellectual support to be able to argue that such expenditures on raising fertility are not only too great but unlikely to prove effective. And, as Teitelbaum and Winter (1985: 151–152) argue, there are not likely to be sufficiently spectacular demographic effects in the short run to justify government intervention. If population size declines markedly in any country, then the sentiments of both governments and their electorates may well change. Leeuw (1987: 308–313) notes that between the 1977 Netherlands Royal Commission which was sanguine about fertility levels and a 1983 government position statement which said that continued low fertility would necessitate pronatalist steps, surveys of public opinion showed those favouring population decline dropping from 65 to 33 per cent. Significantly, no new government initiatives have since been identified. If governments do take action, it is likely to be in Continental Europe. The English-speaking countries are too much given to economic rationalism and against social interventions to participate. Besides, all but Britain are likely to prevent population decline through immigration and the British might accept decline.

Most effort is likely to be directed at changing provisions for the old or their financing. For decades to come, political debate will undoubtedly focus increasingly on modifying pensions and health care schemes, especially for the old, and on providing alternatives to the institutionalizing of the old. Some of what is done will probably be less a changing of the taxation base than the appearance of changing it. The taxation base may be increased by extending the working span. However, this may not come about, because the central irony of this debate is that modern economies cannot employ all those of working age. To take Germany as an example, only about three-quarters of men 20–64 years are employed, while the rest are either unemployed or prematurely retired. Such early retirement has become a way of life and change will be resisted: in Austria, where the average age of retirement is also early, a recent move to raise the age when the pension for childless women begins from 60 to 65 years, equivalent to men, was strongly attacked and with-

drawn. In demographic policy, our politicians will almost certainly feel their way cautiously into the future, and give the impression of being pushed by events rather than leading. If mass population movements towards higher fertility, supported by government policies and expensive programs, come about, then they are likely to be full-blown in parts of Europe by the mid-twenty-first century. Thereafter, they could affect the whole world.

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Notes

- 1 As much as one-quarter of disposable income (McIntyre 1975: 367) or 10 per cent of all government expenditure (Frejka 1980: 70–71).
- 2 Easterlin 1968; Berelson 1974; Espenshade 1978; Espenshade and Serow 1978; McIntosh 1981, 1983; Teitelbaum and Winter 1985; Leeuw 1987; Betts 1989; Gauthier 1991, 1993; Chesnais 1996; Conrad *et al.* 1996; McNicoll 1995; Rindfuss and Brewster 1996; US Council of Economic Advisers 1997.

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