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Below Replacement Fertility

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PREFACE

Historically, national populations have replaced themselves. Each couple has had at least two children so that one generation begot the next generation. If couples on average have more than two children, each generation becomes larger than the previous and national populations grow over time. In fact, during much of the second half of the twentieth century, this is exactly what has happened—for many countries, and for the world as a whole, couples had many more than two children, and national population growth rates soared. National and international attention was focused on the "population problem" and the consequences of rapid population growth for the environment, economic well-being, social progress and political stability.

However, during the last decade, a relatively new population issue has been evolving in more and more countries, first in European and other developed countries and lately extending to the developing countries, particularly in Eastern and South-eastern Asia. Couples in these countries are having, on average, fewer births than are necessary for generations to replace themselves—more and more countries are exhibiting levels of fertility below what demographers call replacement level fertility. If such low childbearing patterns continue in these countries, their populations will decline as fewer babies are born. In fact, population is already declining in a number of European countries.

According to official United Nations estimates, which are updated regularly by the Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, in 1997 there were 51 countries in the world at or below replacement fertility and 44 per cent of the world population resided in them. The United Nations Population Division projects that by 2015, the world's population is likely to reach 7.3 billion with two thirds of the population living in 88 countries at or below replacement-level fertility.

In response to these new issues, the Population Division organized the Expert Group Meeting on Below-Replacement Fertility, at United Nations Headquarters in New York from 4 to 6 November 1997. The purpose of the meeting was to obtain the advice of experts on how fertility levels might evolve in those countries that are already exhibiting fertility below replacement level. Will they remain below replacement? Will fertility rise back towards or to replacement?

This volume contains the collected set of papers presented at the Expert Group Meeting. The papers examined recent fertility trends in these countries, determinants of below replacement fertility, future expectations for fertility, consequences of sustained below-replacement fertility and policy and programme options. The sessions of the Meeting were organized along these major themes. Each session was supported by a background paper which reviewed the issues concerning the theme of that session. In addition to background papers, country papers were prepared by experts which reviewed the above topics as

they apply to their countries. Participants and papers came from China, France, Germany, Ireland, Italy, Japan, the Russian Federation, Sweden and the United States of America.

The proceedings of the Meeting are here gathered as a special issue of the *Population Bulletin of the United Nations*. They include the papers presented to the Meeting after revision based on the discussions at the Meeting. The report of the Meeting, giving the discussion surrounding each agenda item and the conclusions reached, is contained in part I. The background papers are presented in part II and the country papers in part III.

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Symbols of United Nations documents are composed of capital letters combined with figures.

The following symbols have been used in the tables throughout this report:

Two dots (..) Indicate that data are not available or are not separately reported.

An em dash (—) indicates that the amount is nil or negligible.

A hyphen (-) indicates that the item is not applicable.

A minus sign (-) before a figure indicates a decrease.

A point (.) is used to indicate decimals.

A slash (/) indicates a crop year or financial year, for example, 1994/95.

Use of a hyphen (-) between dates representing years, for example, 1994-1995, signifies the full period involved, including the beginning and end years.

Details and percentages in tables do not necessarily add to totals because of rounding.

Reference to "dollars" ($) indicates United States dollars, unless otherwise stated.

The term "billion" signifies a thousand million.

The group of least developed countries currently comprises 48 countries: Afghanistan, Angola, Bangladesh, Benin, Bhutan, Burkina Faso, Burundi, Cambodia, Cape Verde, the Central African Republic, Chad, Comoros, Democratic Republic of the Congo, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, the Gambia, Guinea, Guinea-Bissau, Haiti, Kiribati, the Lao People's Democratic Republic, Lesotho, Liberia, Madagascar, Malawi, Maldives, Mali, Mauritania, Mozambique, Myanmar, Nepal, the Niger, Rwanda, Samoa, Sao Tome and Principe, Sierra Leone, Solomon Islands, Somalia, the Sudan, Togo, Tuvalu, Uganda, the United Republic of Tanzania, Vanuatu, Yemen and Zambia.

Part One

REPORT OF THE EXPERT GROUP MEETING ON BELOW-REPLACEMENT FERTILITY

Population Bulletin of the United Nations, Nos. 40/41—1999

REPORT OF THE EXPERT GROUP MEETING ON BELOW-REPLACEMENT FERTILITY

The Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat organized a meeting of experts from 4 to 6 November, 1997, to discuss issues related to the low levels of fertility that have recently been observed in many parts of the world. Of the current population of the world 44 per cent now live in countries where fertility has fallen below the level required to replace the present parental generation, and this proportion is expected to rise to 67 per cent by the year 2015. This development has profound economic and social implications and presents a serious challenge to policy makers.

The Meeting was opened by Joseph Chamie, Director of the Population Division. He observed that the United Nations had had a continuing concern about population change and the processes that brought about such change. Moreover, in order to prepare the official United Nations population estimates and projections that were published biennially by the Population Division, assumptions must be made about likely demographic trends in the future. As part of its regular review of the projection assumptions concerning future changes in the demographic components, the Population Division was closely reviewing the validity of future fertility assumptions for countries where fertility was very low. Mr. Chamie emphasized that the Meeting was intended to be scholarly in nature with the object of obtaining the best possible scientific results.

Mr. Chamie then turned the Meeting over to Larry Heligman, Assistant Director of the Population Division, who had been responsible for organizing the Meeting. Mr. Heligman described the work plan for the Meeting. The first two days would be devoted to substantive presentations and exchange of views. Five sessions were planned, each starting with a review of the relevant background paper, followed by the comments of a discussant and questions and contributions from the other experts. The topics to be covered were: fertility trends among low fertility countries, determinants of below-replacement fertility, future expectations for fertility, consequences of sustained below-replacement fertility, and policy interventions.

Mr. Heligman recalled that, in addition to the background papers, nine papers describing the experience of individual countries had been prepared by members of the Expert Group as a way of providing depth and detail for the discussions. Because they represented an important resource for the substantive sessions, those country papers would be summarized in the report of the Meeting (see appendix). The final half day would provide an opportunity to make

known the conclusions of the Meeting to a wider audience of members of diplomatic missions, the press and the United Nations Secretariat. Brief presentations by a panel of experts representing specific countries would be followed by questions open to the floor with response and discussion from the experts. The Rapporteur, Ms. Elise Jones, would then summarize the discussions of the previous two days.

The Meeting then proceeded as outlined by Mr. Heligman. The following sections summarize the discussions and conclusions of the Meeting by substantive session.

I. FERTILITY TRENDS AMONG LOW FERTILITY COUNTRIES

The background paper for the first session was prepared by the United Nations Population Division and presented by Aminur Khan, Chief, Fertility and Family Planning Section and Bhakta Gubhaju, Population Affairs Officer in the Section. The data analysed covered the period from 1975 to 1995, and thus represented an update of the material in the earlier publication *Patterns of Fertility in Low-Fertility Settings* (United Nations, 1992).

The report included all 54 countries where the total fertility rate (TFR) was below replacement level (TFR of 2.1) in 1995 (or the most recent year for which data were available). In addition to virtually every developed country, the list included China and several other developing countries in Eastern Asia, the Caribbean and elsewhere.

Mr. Khan observed that there was considerable variety among countries in the year at which replacement-level fertility was reached and hence the duration of their experience with low fertility. Trends over the last 20 years also differed. Fertility had risen recently in a few cases, including the United States. In 22 cases, the TFR had fallen to 1.5 or lower by 1995. Many of the countries where fertility had dropped especially sharply had been undergoing very rapid socio-economic change.

Age-specific fertility rates had declined throughout the reproductive range in Asia and Eastern Europe. Adolescent birth rates had generally gone down although they remained relatively high in Eastern Europe, the United States of America and some Caribbean countries. Compared to Asia, childbearing among women aged 35-39 was high in Northern, Southern and Western Europe and in the western hemisphere. Births to women over age 45 were now few.

The mean age at childbearing had risen in almost all of the countries considered. It was now in the upper twenties except in Eastern Europe. The lengthening of the intergenerational interval had important implications for future population growth. At the same time, the proportions of all births that were of third or higher birth order, particularly those of fourth or higher order, had declined.

Comments by the discussant. John Bongaarts (Netherlands) pointed out that the quality of the information for those countries was generally high, and he commended the Population Division for a clear presentation of a large and complex set of data. The central point of his remarks concerned the

shortcomings of the period TFR as a measure of the extent to which the current generation was replacing itself. When replacement fertility was defined in terms of a TFR of 2.1, the TFR was being used to estimate cohort fertility. But, as a period measure, the TFR gave a distorted view of cohort fertility at times when the tempo of childbearing was changing. Because the mean age at childbearing was now rising in many countries where fertility was very low, the TFR was an underestimate of replacement at the population level.

The distorting effect on the TFR of changes in the timing of childbearing had been recognized for a long time, but reliable ways of eliminating it had not been found. Extending the earlier work of others, Mr. Bongaarts described a new procedure he had developed for calculating an adjusted TFR that was free of the effect of tempo changes. He described some preliminary results for a few countries. In the case of the United States, the adjusted TFR gave less prominence than the TFR to the baby boom and revealed that fertility had been close to replacement since the early 1970s. Likewise, the adjusted TFR for the Netherlands indicated that fertility had not been nearly as low as the TFR for recent years would suggest. In the case of France, the adjusted TFR showed that fertility was now somewhat above, rather than below, replacement level.

General discussion. There was much discussion of the validity of the new procedure proposed by Mr. Bongaarts. The latest data for France were reported to indicate that cohort fertility was currently below replacement level; it had been below replacement level, in fact, since the Napoleonic era.

Mr. Bongaarts responded that he was finding the adjusted TFR to be an accurate predictor of cohort fertility. The significance of his findings for current purposes lay largely in the implication that, when the mean age of childbearing stopped rising, the present downward distortion would disappear, and the TFR could be expected to rise. In the United States, for example, the upward trend in the mean age at childbearing ceased in the 1990s, and that accounted for the recent rise in the TFR.

It was agreed that the period TFR itself did have important uses. Because it reflected the actual number of births, for instance, it showed how the age distribution was changing and thus determined ageing and population momentum. Nevertheless, the timing effect had a crucial impact on projections and assessment of the growth potential of a population.

Mr. Bongaarts suggested that true cohort fertility in Europe was probably now around 1.8 rather than 1.5 births per woman. Hence, it was likely that the populations would decline eventually. Ideal family size might decline somewhat from its present level of about two children, and achieved fertility might continue to fall short of stated preferences. If childbearing was delayed too long, it might not be possible for couples to reach their goals. On the other hand, the chances of unwanted pregnancy became high over the course of a woman's reproductive life, and there was still a significant amount of unwanted childbearing in certain countries. It was urged that not only the average but also the distribution of family size desires be considered, especially with respect to the potential for increasing third births. When the process of overall population decline did set in, it was likely to be slow enough to permit social and economic institutions to adjust.

Apart from the level of fertility, volatility in fertility rates could present serious difficulties. Very rapid change, like that which had occurred recently in Sweden, Ireland and Italy, led to pressures for social services and other systems that were tied to the number of births, e.g., education and specific health services. Since remedies typically required considerable lead time, all too often they took effect just as the fertility trend reversed. More flexible structures must be sought, and the meaning of the annual measures must be better understood.

Jürgen Dorbritz (Germany), who chaired the session, posed three questions by way of summary: Aside from the issue of replacement level fertility, how low could fertility actually fall? Births had been discussed at some length, but what about childlessness? Was late fertility automatically linked to low fertility?

II. DETERMINANTS OF BELOW-REPLACEMENT FERTILITY

Jean-Claude Chesnais (France) presented the background paper for this session. He separated the possible factors that could account for recent fertility decline into three categories. The first group stemmed from demographic transition theory, the second represented forces that came into play after the Second World War, and the third referred to new influences that were only now emerging.

Demographic transition theory brought together the classical ingredients of demographic modernization. Declining mortality preceded and precipitated fertility decline. Vastly reduced risks of premature death meant that few births were needed to assure parents of surviving offspring. During the post-war period, the development of new and more effective methods of contraception facilitated control over reproduction. Moreover, the public mood had changed, and people began to fear the possibility of overpopulation and food shortages. Individuals perceived changes in their personal circumstances, such as the loss of open space. The decline and virtual disappearance of illiteracy altered lives and aspirations, especially for girls. The occupational structure shifted from a base in agriculture, which favoured tradition, to employment in a new and constantly changing array of jobs, so that instability took on positive value. For these and related reasons, fertility had been declining in the more developed parts of the world since at least the beginning of the present century and for several decades in many developing countries.

Mr. Chesnais said that, more recently, different factors had combined to drive fertility down further. He contended that individualization had reached the point of social atomization. Women were now independent and controlled their own destiny. The implementation of collectivized pension systems provided comprehensive security, separating procreation from support in old age and, to some extent, pitting the two against one another. Increasing travel and mobility discouraged childbearing. Shrinking numbers of children led to increased competition with other social groups and less public support for families. He argued that when people constantly feared losing their jobs to automation and technological change, they were unwilling to undertake long-term commitments, including raising children.

According to Mr. Chesnais, another category of fertility determinants included factors that were, in principle, reversible. The gap between the number of children people wanted (ideal family size remained close to 2) and the number they actually had (achieved fertility was currently around 1.6 children per woman) might be closed by effective family policy, especially measures designed to improve the lives of mothers. While the ageing of society implied less demand and lower prices for housing and other consumer durables, it at the same time created an attractive opportunity for young people to satisfy their basic needs more readily, thus putting themselves in a better position to consider having children. Mr. Chesnais said that the Welfare State had carried the concept of social support too far, and the current movement toward reform could reduce financial pressures on young working couples, freeing their resources for investment in children. Taking everything into account, Mr. Chesnais thought that it was quite plausible that fertility would remain permanently below replacement level.

Comments by the discussant. Britta Hoem (Sweden) began by noting that the stage during which the first group of determinants constituted the principal factors affecting fertility was now history in Sweden. Modern contraceptive technology had shifted the emphasis from avoidance of pregnancy to the positive decision to have a child. At the same time, awareness of the responsibilities involved in childbearing had grown. Since the choice to have a child involved sacrifice, the prevailing mood of society was important.

With respect to the second set of factors, most young Swedes still did not obtain a university-level education. The drop in fertility in the 1990s had been concentrated among less educated women. Cohabitation, which was a common form of first union in Sweden, was a relatively unstable type of partnership that had the effect of postponing fertility. Sweden might be an unusual case, however, in that childbearing did not have negative economic consequences for women who were well established in the labour market. Fear of job loss certainly could have the effect of reducing fertility. The impact of some of other factors brought up by Mr. Chesnais was very difficult to measure. In closing, Mrs. Hoem asserted that, to understand fertility, it was now necessary to examine the impact of women's labour force participation, the nature of gender roles and how they were changing, the level of unemployment among youth and the implementation of family policy.

General discussion. It was pointed out that there were many exceptions to the sequences posited in classical transition theory. In France, for instance, fertility decline preceded mortality decline, and fertility began to move down at a time when France was still a largely illiterate peasant society, well before the advent of modern contraception. The factors that fell into this category were actually variable and unpredictable. The transition remained a fuzzy concept.

A question was raised as to what level of low fertility was at issue; the determinants of TFRs as low as 1.1 or 1.2 were not necessarily the same as those that operated when the TFR was around 1.7-1.9. The former situation could be described as one of "excess" low fertility. The difference might come down to the position of women. In Southern Europe, women now had considerable opportunity outside the home, but that created conflict with family life. In a

previous paper, Chesnais had observed that fertility was lowest where gender roles remained unchanged. Italy and Spain might be exceptional, however, because the decline occurred very late and even cohort fertility dropped rapidly. Eastern Europe was also different because recent declines had occurred in the context of profound political and economic transformation. "Excess" low fertility could also be caused by conflict between changes in the social and economic environment on the one hand and norms and traditional forms of behaviour on the other. In Sweden, the direction of long-accepted relationships between women's education and employment and their fertility might be reversing; the rise in childbearing in the latter half of the 1980s consisted largely of first births to better educated women with secure employment, while the recent decline had been concentrated among poorly educated women and higher order births and appeared to be linked to unemployment.

Several participants mentioned that there appeared to be some positive motivation for having children, although maybe no more than one or two. People seemed to be predisposed to love and care for their offspring, and motherhood was viewed as a positive experience. Children were a source of pleasure as well as a fulfilment of norms. Moreover, when children were rare, they became more valuable; this was likely to emerge clearly at the point when deaths actually began to outnumber births.

In Asian countries, the role of Government as a determinant of fertility was particularly important. There, policy decisions at the national level had been a major factor in bringing about fertility decline, in contrast to Europe where individual couples acted primarily in their own interest. The concept that individuals should take into account the needs of society at large in their decision-making was deeply embedded in Chinese culture, and population pressure was universally recognized as a social problem.

The need was raised to understand the determinants of low fertility for purposes of population projections. A number of the experts felt, however, that fertility was now essentially unpredictable. In the present situation, changes tended to be small and uncertain. Projection of current trends far into the future often led to unsustainable results. Time would be required to learn about determinants in low fertility settings. Moreover, it was not easy to incorporate non-demographic determinants into projections. It was agreed, nevertheless, that the track record of past projections had been good as far as 20 years into the future. Beyond 20 years, projections were much less certain.

III. FUTURE EXPECTATIONS FOR FERTILITY

The background paper on future expectations for fertility was prepared by the United Nations Population Division and presented by Serguey Ivanov, Population Affairs Officer in the Division's Population Estimates and Projections Section. The main focus was the question of how to develop appropriate fertility assumptions regarding the future course of fertility in countries where the demographic transition had been completed, and fertility was now low. There was no compelling theory of reproductive behaviour for the large and growing group of countries that were currently in this situation.

In the *1996 Revision* and its predecessors, the medium variant of the projections for all low fertility countries assumed that the TFR would sooner or later move up to replacement level (2.1 children per woman). The path toward this target was set according to recent fertility trends, and the length of time required to reach it thus differed from country to country, and sometimes was not reached until after the projection horizon (2050). The assumption that fertility would eventually move back toward replacement level might no longer be tenable, however.

The assumptions made concerning future trends in fertility had important consequences in terms of population growth or decline. They also determined the numbers of births and hence future age structure. Although the youngest ages were affected most directly, all variants in the *1996 Revision* showed considerable ageing of those populations.

New fertility assumptions were proposed for the upcoming *1998 Revision* that recognized the growing heterogeneity of levels and trends among low fertility countries and took into account the reality of long periods during which fertility might remain below replacement. The medium variant projections would allow for lower and higher target levels (1.7 and 1.9 children per woman, respectively), but would not assume that countries would necessarily move back toward replacement level. In addition, the latter would be adjusted for individual countries according to the level of completed fertility level for the youngest cohort for which it could safely be estimated. Similarly, the high and low variants would be calculated in such a way as to become country-specific and diversified. Because the new assumptions would result in lower projected fertility than the old ones, they would lead to slower growth and more rapid ageing of national populations.

Comments by the discussant. Eduardo Arriaga (United States of America) observed that the new set of assumptions appeared to be coherent and well thought out. Given the current lack of understanding of the forces shaping fertility in low fertility settings, they were quite reasonable. The main question was how many assumptions there should be.

Mr. Arriaga noted that, in addition to fertility assumptions, future population size and age structure could be greatly affected by migration, although that was not the subject of the Meeting. He suggested that, at some point, it might be worthwhile to isolate the effects of natural increase or decrease from projections that incorporated migration. That would be a way of focusing attention on migration policy. He believed that population decline should not be feared except with respect to its effect on age structure.

General discussion. A suggestion was made for an even simpler approach to projections. The target fertility level could be set equal to recent completed cohort fertility in the country in question and the number of years required to get there specified. That would only be appropriate in countries where fertility had been low for 20 years or more. The possibility appeared worth considering, even though cohort fertility inevitably reflected experience that was well in the past.

The issue of the time horizon of the projections was raised. Demographic systems were inherently quite stable given their considerable built-in momentum. Hence, projections for 20 or 25 years could be expected to be fairly accurate. As time went on, however, the unknown component became increasingly dominant, and, over time, less confidence could be placed in the results. The United Nations was nevertheless expected to produce projections that extended 50 or more years into the future. Consideration might be given to ways of differentiating in the presentation of the projections between the shorter term of more certain figures and the longer term figures in which there was less confidence.

Sergei Zakharov (Russian Federation), the chair for the session, remarked in closing that the Population Division had dealt with the problem raised by projections as well as was possible at this point. It would be important to keep close track of future experience, however, and to be prepared to re-evaluate the assumptions in the course of time.

IV. SUSTAINED BELOW-REPLACEMENT FERTILITY: REALITIES AND RESPONSES

Michael Teitelbaum (United States of America) summarized his paper on the consequences of below-replacement fertility. Discussion of this topic had been in progress for at least a century but had been largely characterized by misunderstanding, confusion and exaggeration. Low fertility was often associated with national decline, sometimes as a cause and sometimes as an effect.

Typically, low fertility was closely tied to political ideology and national values. There was no overall shortage of people in the world, and attention was apt to focus not so much on the lack of births *per se* as on which population or subgroup might decline in size relative to others. The issue had been used historically for strategic purposes by politicians on both the right and the left.

Demographers understood that long-term projections were not predictions of what would happen, although the public at large often did not appreciate that fact. The current situation was unprecedented with respect to both the low levels of fertility observed and the widespread nature of the phenomenon, making the future that much more unpredictable.

At least two statements could be made with some certainty, however. First, populations would age. Mechanisms to smooth the transition could be developed, but the speed with which change took place was critical to the success of that effort. Second, errors of demographic interpretation had aggravated negative reactions to present trends. Low TFRs had received undue emphasis owing to failure to acknowledge the distorting effect of shifts in the tempo of childbearing. In addition, the definitions of the boundaries of dependent age groups (ages 65 or older, ages 15 or under) were out of date and needed to be revised. Given the increase in life expectancy, 65 years was no longer an appropriate point at which to separate the working and aged-dependent categories; likewise, very few young people were now self-sufficient at age 15.

In terms of policy options, the alternatives were either to increase population growth or to adapt to change. Efforts to raise fertility were likely to produce unwanted births if they were coercive, while pronatalist policies based on

positive and negative incentives were inevitably expensive. Immigration in sufficient numbers to compensate for declining birth rates typically aroused fears of loss of national identity similar to those inspired by low fertility in the first place. Adaptation involved primarily the shifting of assets from younger to older age segments of the population. That would be much more difficult in Asia, where the ageing process had been particularly rapid. The threatening bankruptcy of pension schemes was already receiving attention in virtually all countries where fertility was low.

Comments of the discussant. Ryuichi Kaneko (Japan) agreed that alarmist views of the consequences of low fertility should be avoided. He believed, however, that national decline was not always a question of nationalistic ideology but that the self-sufficiency of the socio-economic system was actually at stake. People were needed to keep the present system going, and they must be those whose training and culture suited them to function within that system. Immigration did not meet that requirement.

He went on to raise a fundamental question as to whether the present low fertility was a normal condition inherent to the process of socio-economic development or whether it was a social illness. If the former was true, then population decline was inevitable, and efforts to reverse it could not succeed. If the latter was correct, however, then the problem must be diagnosed and the cure found.

Mr. Kaneko concurred with Mr. Teitelbaum that the emergence of the phenomenon of low fertility provided an opportunity to expand and refine demographic measurement tools. Although the future was unpredictable, demographers must use the scientific tools at their disposal to narrow the range of uncertainty in projections. One approach would be to distinguish three groups of parameters: those that remained constant, those that changed in a linear fashion and those that fluctuated over time. The unpredictable component was confined to the last category.

In conclusion, he stated his belief that present below-replacement fertility was a pathological rather than a normal condition and represented a rational response to a situation that placed an unfair burden on women. The remedy was to create a fair society.

General discussion. The participants generally agreed on the inevitability of ageing populations. The problem was how to ease the transition towards significantly older age distributions. Many countries were still paying for high fertility in the recent past while they must already take on the expense of large numbers of older citizens. Pension schemes were facing trouble everywhere. It also seemed certain that western countries would ultimately comprise a smaller share of total world population.

Most felt, in addition, that very low fertility (in the range of 1.0-1.5 children per woman) was not only undesirable but was unlikely to continue indefinitely. Although there had been no relationship between pronatalist policies and the level of fertility in the past, it stood to reason that extremely low fertility would eventually bring forth a political response. Research showing that, in the

United States, children had substantial positive externalities was mentioned; other things being equal, this would promote childbearing.

Fortunately, demographers dealt with a system that had a great deal of built-in inertia. In his closing remarks from the chair, Zhenghua Jiang (China) observed that policy makers liked stability. In reality there were too many people already. A sustainable population should be seen as one that supported successful social and economic life.

V. Policy interventions in response to below-replacement fertility

In presenting his background paper, Paul Demeny (United States of America) pointed out that demographers had never believed that the demographic transition would ultimately lead, as the classical version of the theory postulates, to a situation where births just matched deaths, and populations as a whole neither grew nor shrank. It was foreseen early on that fertility might continue to decline past replacement level and negative growth rates could ensue. It was believed that the post–Second World War baby boom was a temporary aberration, and that low fertility would become a major public issue.

In fact, although it was correct that the baby boom was temporary, low fertility was not yet a major issue of public debate. Governments in most countries where fertility was now very low had disclaimed any interest in the birth rate. A number of reasons could be found to explain this lack of concern. For one thing, rapid population growth around the world had emerged as the preeminent population issue during the post-war years. Along with that came the perception that, for environmental and other reasons, some reduction in population size was not necessarily bad, assuming that institutional remedies could cope with any resulting problems. In addition, the baby boom, a phenomenon experienced to varying degrees by most Western countries, distracted attention from long term trends. Pronatalist efforts were also seen as inevitably involving considerable expense at a time when other newly launched public programmes were competing for limited resources.

Meanwhile, under the influence of Myrdal and other writers, a shift in the ideology underlying public policy was occurring, moving its focus away from outcomes *per se* and toward the determinants of behaviour. Explicit pronatalism thus had given way to preoccupation with social welfare in general. That development could be traced through the documents that emerged from successive major international population conferences. In the end, the Programme of Action adopted at the International Conference on Population and Development, held in Cairo in 1994, made no reference at all to the possibility that fertility could be too low.

Whether under the guise of social welfare measures or not, attempts to raise fertility had typically involved complex packages of provisions that varied widely from country to country and had been subject to frequent adjustment. Governments had sought in myriad ways to minimize costs in relation to benefits. Assessment of the impact of such programmes was difficult at best, however, partly because period fertility might fluctuate without any change in completed family size.

Efforts of that kind ultimately led to the socialization of every aspect of life and intolerable financial burdens. The redistributive process resulted in the "churning" of resources in response to political pressures, without necessarily achieving any benefit to society as a whole. There was limited potential for tinkering with family support in order to raise fertility, and the Welfare State was a misleading model for countries in the process of development.

Comments of the discussant. Antonio Golini (Italy) noted, to begin with, that positive or negative growth rates of around 0.2-0.5 per cent per year could perhaps be sustained for a long time. The sustainability of lower rates needed to be evaluated, however, with particular consideration given to the consequent speed of change. The extremely low levels of fertility observed, not only in Italy but also in Spain and Germany, caused such rapid change at the extremes of the age distribution that institutions could not adjust fast enough. The ratio of persons aged 80 and over to those aged less than five could become as high as five to one, and the ratio of adults to children within the family could reach eight or nine to one. The population of working age would be so small as to be overwhelmed by the burgeoning numbers in developing countries.

Mr. Golini proposed that the problem be approached in terms of macro-management. That should not be thought of as pronatalist policy, as usually understood, but only of returning to total fertility rates in the neighbourhood of 1.8-1.9. To begin with, obstacles to the fulfilment of reproductive desires should be removed; the aim, in this case, would simply be to permit the expression of existing demand for children. A second step would be to reduce the length of time it took to reach a position in life when parenthood could be considered. In Italy, young people did not leave the parental home because life on their own was too expensive. The mean age at childbearing needed to be lowered by shortening the path from adolescence to adulthood. A third possibility would be to change cultural attitudes so that a child was seen as a public good. At present, Italians thought of children as being of value only to their parents.

General discussion. Mr. Golini was asked to clarify what he meant by sustainability. Fertility had been extremely low in Italy for just a short time, and the present level might therefore not be important. He responded that he was referring to sustainability in both social and economic terms over periods up to 50 or more years.

The suggestion was made that low birth rates could be countered by means of policies favouring immigration, and it was not necessary to concentrate exclusively on ways of influencing fertility. Immigration provided relatively quick relief for many of the problems associated with low fertility. It had ameliorated the process of ageing in the United States, for instance. Many of the countries where fertility was low were highly desirable migrant destinations, making it possible to tailor immigration policies to specific needs, such as for certain kinds of workers. Mr. Golini responded that, in Italy, immigration in sufficient numbers to balance the excess of deaths over births in the native population would be socially disruptive. Italy already had positive net immigration of about 50,000 persons per year, but a much larger flow would be required. Although economic integration was now achieved quickly, it took two generations to work out the accompanying social problems; in addition, time

was required to make adjustments in the infrastructure, including building schools etc. Where there was high unemployment, that also presented an obstacle to immigration. Some countries, such as Germany, had high rates of unreported immigration, including asylum seekers and persons returning to their ethnic homelands.

Attempting to influence the demand for children was yet another policy alternative. Advertising was successful in increasing the demand for many goods. Political leadership could have an impact. Education and propaganda had played a substantial role in bringing about fertility decline in developing countries. In Sweden, the educational campaign encouraging fathers to stay at home with their children was also effective. There did appear to be room for increasing demand, although Governments were not necessarily able to guide change of that kind.

However, the experts noted that politicians operated within a short time horizon, while the effects of low fertility were felt in the longer run. The implementation of pronatalist policies was very expensive; nevertheless, in some countries, obstacles to childbearing could be removed at little or no cost, and certain measures, such as income transfers, did not involve interference in people's lives. In Eastern Europe, people were preoccupied now with problems other than too few children, but children were not a consumer good, and fertility was likely to rise somewhat eventually without any action on the part of the Government.

Owing to population momentum and, in some cases, immigration, few of the countries where fertility was below the level required for replacement were yet experiencing actual population decline. As that time neared, more attention would no doubt be paid to that issue. The most promising areas for intervention would appear to include the removal of existing obstacles to childbearing, such as extra tax burdens for families with children, and reducing the conflict experienced by women between employment and raising a family.

VI. PANEL SESSION

For its final session, the meeting moved to the United Nations Headquarters building. Members of United Nations missions, representatives of non-governmental organizations and members of the press were invited to attend. Mr. Chamie explained to this wider audience that the experts had been brought together to consider how fertility might evolve in countries where it was now below the level required to replace the population in the long run, as well as the determinants and consequences of low fertility and possible policy responses. He pointed out that, according to the most recent United Nations projections, the populations of most of the countries where fertility was very low would continue to increase for some time, although declines could be expected in some cases; meanwhile, the population of the world as a whole was expected to grow considerably. He then introduced the members of the expert group.

A. PRESENTATIONS BY THE PANEL

A panel composed of five of the experts started off the discussion. Each panel member represented a different country and was asked to consider whether low fertility was a matter of concern there, whether any consequences had been observed and how fertility was likely to develop in the future.

Mr. Golini reviewed the situation in Italy. He distinguished between the extremely low fertility observed in Italy (TFR of 1.17 in 1995, the lowest ever recorded in a large population) and the levels found in many other low fertility countries where the TFRs were 1.8-1.9. The former implied sharp population decline. Although there had been little concern up to the present, the crisis in the social security system that was revealed recently drew attention to the problem. Organized groups within the country were expressing differing points of view. Eventual population size was less important than the effects of very rapid change in the age distribution. The population under age 20 would decline by 2 per cent per year, and the numbers of very old people would increase similarly.

Mrs. Hoem pointed out that recent fertility trends in Sweden differed from those of most European countries. As happened elsewhere, there was a steady fertility decline from the mid-1960s to the mid-1980s, but then fertility in Sweden moved onto an upward path. The TFR reached 2.14 in 1990, a time at which the female labour force participation was also unusually high. However, after 1990, there was a sharp decline, and Sweden now had one of the lowest fertility levels in Europe. Those major fluctuations were difficult to cope with in themselves, but they were not the real problem. Fertility probably would not continue to decline. The recent drop occurred simultaneously with a sharp downward turn in economic conditions. The decreases were concentrated among women with less education, who were experiencing high unemployment, while there was no change among women who had secure employment. Fertility was likely to rise again when the economy improved.

Mr. Jiang noted that, in China, fertility was moderately low (the TFR was around 1.8-2.0). There was no concern yet, partly owing to the prospect of considerable further population growth due to the momentum created by the high fertility that had prevailed in the 1950s and 1960s. Without the decline that had been achieved, the population of China would now number about 6 billion persons, rather than the currently estimated 1.4 billion. Growth was not projected to cease until the middle of the next century. There was already a serious problem of unemployment and no labour shortages were anticipated. The Government would like fertility to remain low but not fall too far; a TFR in the range of 1.8-1.9 would be best. The quality of family planning services needed to be improved and the rights of women protected. Family planning was expected to play a major role in efforts to alleviate poverty. Enhancing women's status could help to prevent fertility from dropping excessively.

Mr. Zakharov stressed that Russia was a society in the process of fundamental change. It was in the midst of a transition from a totalitarian political regime and a centrally planned economy to a democratic system and a free market system. It was not clear what the concurrent demographic developments really meant. Some saw the present very low level of fertility as a shock response to

the upheaval. Fertility had been low since the 1960s, however; the TFR had been 1.7 or 1.8 at the end of the 1970s and was currently around 1.2 to 1.3. If delayed childbearing was part of the normal process of adaptation to rapid change, the question arose as to how long it could continue. On the other hand, the present low fertility might represent the beginning of a long-term process of westernization involving a shift toward later and less universal marriage accompanied by postponement of childbearing. Meanwhile, Russia was experiencing the same problems as other societies where fertility was below replacement level, particularly population ageing and the attendant difficulties with the pension system.

Elise Jones indicated that low fertility was not currently receiving much attention in the United States. The actual level of fertility was not far below that required to maintain present numbers, and the population was expected to continue to grow, owing both to residual momentum from the baby boom and to immigration. The population was ageing nevertheless, albeit more slowly than in many other countries, and that implied that difficult adjustments lay ahead. The ageing process would accelerate when the baby boom reached retirement age in approximately 2010; the need for changes in the social security system was already under discussion. Progress toward solving the social problems of unwanted births and high teenage birthrates would tend to depress fertility further. On the other hand, fertility could rise as higher fertility subgroups came to represent larger proportions of the total population or if steps were taken to resolve the conflict for women between working and raising a family.

B. Questions and answers

Question: What are the factors driving fertility down, and will they change?

Response: The status of women was one of the main themes of the Expert Group Meeting. Empirical findings have almost always shown a negative relationship between women's employment and childbearing, but, in Sweden, where the conflict in women's roles has been largely resolved, there is evidence that a positive association between the two is emerging. In China, women's education shows a nonlinear relationship with fertility; the women with the least education and those with the most education have lower fertility than those with intermediate levels of education.

Question: What personal problems are associated with the move to a predominance of families with only one child?

Response: Because there would be 8 to 12 adults ready to satisfy the desires of just one child, children could receive too much attention and would be unprepared for the realities of adult life. However, studies comparing families with one child to those with more have concluded that singletons grow up very much like everyone else and are, if anything, better off than those with siblings. But if one-child families became dominant, things would be different because the entire kinship structure would be radically changed. China has now had considerable experience with one-child families. Research there indicates that, because the change happened abruptly in the 1980s and 1990s, all parental love

was concentrated on the one child, and they did receive too much attention. Only children do not necessarily have to be spoiled, however.

Question: What is China's one-child policy, and how important has it been?

Response: The label "one-child" policy is misleading. There was never a universal requirement that every couple have only one child. Differing family size preferences were taken into account, and various groups were allowed more. The evidence is in the results: if every couple were having only one child, the TFR would be 1.68, whereas it is actually around 1.8-1.9. The Government encourages couples to have one child, but it is not compulsory. Urban couples now want only one child, if any, but rural couples still want more. Family planning is an important part of the current poverty alleviation project, which includes special benefits incentives for those who limit their families.

Question: What accounts for the upswing in fertility in Sweden in the late 1980s, and what was the impact of pronatalist policy?

Response: Economic conditions were difficult in the early 1980s but improved in the latter part of the decade. There was a shift toward earlier childbearing and much optimism about having children. Parental benefits also became more generous, including rewards for relatively short intervals between births. These changes were not made for demographic purposes, however, but rather on general principles of social welfare.

Question: We know that changes in the timing of childbearing distorts period measures of fertility like the total fertility rate; what is the true level of fertility in countries like Russia and Italy?

Response: This is an important question. Cohort fertility is a reliable measure, but it is not known until after a given cohort of women has passed through their fertile years, that is, long after most of their births took place. The TFR is a hypothetical measure that is up-to-date, but it is subject to period effects. When age at first birth is rising, the TFR underestimates the true level of fertility. In France, the difference is as much as 0.4 births per woman, and for other countries it is in the range of 0.2-0.4 births per woman. These differences represent a substantial proportion of fertility. Women say they want families of about two children, and timing changes are one of the reasons why observed fertility is lower than that. When age at childbearing stops rising, the TFR can be expected to rise. However, the TFR is an accurate reflection of the number of births, which is what matters for the ageing process, for example. Policy is concerned with both the number and spacing of births. In China, parity progression ratios are sometimes used in projections. Both period and cohort fertility are needed for projections. In Italy, even cohort fertility is as low as 1.6 children per woman. This information needs to be used in combination with age at childbearing. We need to understand what will happen in the next few years. The total fertility rate is more useful for projections when adjusted for timing effects.

Question: Very low fertility is an extraordinary phenomenon that places the notion of homeostasis toward families of two children in question. Given that the downward spiral may continue, and as many as 30 per cent of couples might remain childless, how would societies deal with such an

outcome? Would they react by tinkering with family benefits? Would there be a devolution of the Welfare State? Would motherhood become a full-time profession for a few women who would specialize in childbearing?

Response: Devolution has universal appeal though there are few signs yet of such a development. The idea of professional motherhood is not likely to be well received.

Question: How historic a moment is this?

Response: In one sense it is not historic, because even in these countries growth will continue for a couple of decades, and the global population will keep on rising for much longer. We now appear to be about half way through the transition. Since 1700, five billion people have been added to the population of the world, and maybe as many as another five billion are yet to come. The extraordinary thing is actually the growth that has occurred over the last two centuries. The shift to fertility levels below that required to replace the present population is nevertheless momentous. Its importance may be better recognized when deaths do begin to outnumber births. The present moment is historic because we have passed the peak in the growth rate of the world population, and we have passed the peak in the annual numbers of births; birth rates are now coming down in developing countries.

VII. CONCLUSION

Elise Jones, the Rapporteur for the Expert Group Meeting, presented an overview of the discussions at the Meeting, as well as concluding remarks.

Mrs. Jones said that the present situation was unprecedented. Fertility was now below replacement level (TFR of 2.1 births per woman) in countries containing 44 per cent of the world's population. Current levels in those countries ranged from close to replacement down to 1.2, and trends over recent years varied widely. In any given country, there was no relationship between the length of time since reaching replacement level and the current level of fertility.

Other features of this new demographic situation were pointed out. Mortality was low, leaving little room to balance declines in births with further declines in deaths. The mean age at childbearing was rising in the great majority of cases. In some countries, a significant proportion of births were unwanted even now, implying the possibility of further fertility decline. At the same time, ideal family size typically remained around two children; the gap between preferences and achieved fertility could be interpreted as latent demand for more children. Within the class of low fertility countries, both determinants and consequences might be different in those where the total fertility rate was below 1.5 from those where it was above this level. There was often substantial variation within countries, including areas where the total fertility rate was below 1.0.

As a period measure, the TFR accurately captured the quantum dimension of current fertility, which determined age structure and population momentum, and it had the further advantage of being intuitively understandable. But, because it was subject to the effects of changes in the timing of births, it was a poor indicator of the potential for eventual population growth or decline. When

the mean age of childbearing was rising, as was generally the case, it underestimated the true level of fertility.

It seemed possible that the factors associated with classical demographic transition no longer applied in the new circumstances that prevail. It was clear, however, that the State can play a critical role in bringing fertility down; Eastern Asia provided a number of examples, for example, China and the Republic of Korea. The experts expressed some conviction that people did have an underlying predisposition to reproduce; although one or two children might be enough to satisfy this desire, it appeared unlikely that fertility would fall close to zero. Women's status was unanimously believed to be an absolutely central issue. The effects of certain factors might reverse themselves under modern conditions. Both economic well-being and education had traditionally been negatively associated with fertility but, in Sweden in particular, recent trends suggested just the opposite.

Turning to expectations for the future, Ms. Jones said that certain developments were very clear. Soon a majority of the world population would live in countries where fertility was low. There was a possibility of extremely low fertility in some countries, including those where the TFR was in the neighbourhood of 1.0-1.5 children per woman. Nevertheless, as a whole, the population of the countries where fertility was low would continue to grow for the coming one or two decades.

The principal consequences of low fertility could be identified. On the one hand, assuming there was insufficient immigration to compensate for the excess of deaths over births, population would begin to decline in size. The population age structure would shift, requiring difficult adjustments. Pay-as-you-go pension systems were in serious trouble. Similar problems affected many other major public programmes that were age-dependent, such as education and health services. The steepness of the fertility decline determined the speed of the ageing process; it would occur fastest in Eastern Asia and Southern and Eastern Europe. The pace of change was also critical to the development of appropriate responses.

There were only two ways in which the situation could be ameliorated; policy interventions must aim either to increase the population growth rate or to ease adaptation to the new circumstances. So far, Governments had taken remarkably little action, and there appeared to be many reasons for this. Perhaps the response would be more visible when actual population decline set in.

With respect to the first option, history suggested that attempts to increase fertility were likely to have only temporary effects, mainly on the timing of births. Efforts tended to fall short, partly because of the enormous costs involved. Nevertheless, the removal of existing obstacles to childbearing would certainly be feasible, and there was considerable potential for that in some countries. Some optimism was also expressed concerning the prospects for public education campaigns to increase the demand for children. Immigration offered an alternative approach to raising growth rates. Although immigration had advantages, the possibility of economic and, especially, social disruption was noted.

Adaptation, the second option, was much easier if change did not occur too quickly. There was much scope for policy development in this area. There was justification for raising both the age of eligibility for retirement support and the age at which young people were considered to reach independence, which could be done in such a way as to lower the dependency ratio. In general, more flexible institutions were needed to cope with the high probability of future fluctuations in fertility.

In conclusion, the experts speculated that there could now be two, if not three, different fertility transitions taking place simultaneously. First, there was the classical transition, which could be seen as a modernization process in response to profound socio-economic change. That had been completed in Western and Northern Europe and in European overseas populations but was still in progress in many parts of the world. Meanwhile, a second transition began in the 1960s in Europe and Northern America and quickly spread elsewhere. That change was probably precipitated by the advent of modern methods of contraception, which made it possible to separate sex from reproduction. Individual autonomy was emphasized; while women had the opportunity to work, employment was incompatible with raising a family, and fertility was very low.

The possibility of a third transition was intriguing. If the conflict in women's roles could be resolved, couples might feel free to have the children they would like to have, with a consequent rise in fertility. A positive association between fertility and such factors as education and economic success could emerge. Adjustment in men's roles was implied as well. Moreover, the necessary social conditions would have to be created through public policy, and the expense would be considerable. Prosperous times might be a further requirement, especially with respect to job opportunities for women. Sweden appeared to be the only example so far where that might be happening on a national scale. It was intriguing, however, that Ireland was basing one of two sets of population projections on that kind of development, and the phenomenon appeared to characterize population subgroups in many western countries.

APPENDIX

Summary of country papers

The fertility transition and prospects in China and other Eastern Asian countries

Zhenghua Jiang

The paper focuses on China in the context of other Eastern Asian countries where fertility has declined rapidly, particularly the Republic of Korea, Singapore and Thailand. In 1996, the total fertility rate (TFR) was 2.0 children per woman in China and Thailand and 1.8 children per woman in the Republic of Korea and Singapore. Family planning programmes, sponsored either by Government or by non-governmental organizations, and antinatalist policies are seen as the main factors responsible for the fertility decline in these

countries. Demand for family planning was driven, in turn, by socio-economic development, which led to rising levels of education, better health services and changing ways of life.

China has benefited enormously from fertility decline. Having a society with fewer children has resulted in large savings that can be invested in economic development. The twin problems of unemployment and underemployment will be alleviated. Pressures on the food supply and all types of social services are also relieved. With higher status and opportunities for employment, women desire smaller families. Finally, significant reductions in poverty have been possible.

The outlook is favourable for continued low fertility in China. Although the population will continue to grow for several decades as a result of the age structure inherited from the high fertility of the past, it should be possible to achieve zero population growth before the middle of the next century. Continued socio-economic development will help to solidify new ways of thinking and behaving.

China's experience shows that development and demographic policies should be viewed as interdependent. The traditional Confucian philosophy teaches that the interests of individual families are best served when their decisions reflect the needs of society at large.

In oral comments during the meeting, Mr. Jiang reiterated that fertility was likely to remain low in China. The population was already above the optimal size for development and would continue to grow for some time. He stressed that governmental policy and the views of the people jointly determined the level of fertility. Although some subgroups might still favour families of two or three children, changing circumstances had led to widespread acceptance of the low fertility norm.

The future of French fertility: back to the past or a new implosion?

Jean-Claude Chesnais

Following the momentary aberration of the "baby boom" after the Second World War, the long-term decline in fertility that had been in progress for some time throughout western society resumed and accelerated, reaching levels below replacement. Fertility decline also spread to other parts of the world, especially urban areas. France is no exception to this changed mentality.

The future now is unpredictable. Money has become the centre of life. People are losing their sense of national and cultural identity. The negative implications of population decline are discounted. Social policy gives little attention to children. These problems are exacerbated in France by persistent economic difficulties relating especially to employment.

Under these circumstances, an upturn in fertility is very unlikely. The TFR in France will probably remain in the range of 1.5-1.8, and could decline further if a concerted effort is not made to remove currently existing obstacles to childbearing.

The future of the family and future fertility trends in Germany

Jürgen Dorbritz and Charlotte Hoehn

In Germany, fertility may stabilize at its present low level or fall further. There are no grounds for believing that it will increase. While marriage and the family remain closely linked, the institution of marriage is changing rapidly. Three interpretations are possible. First, living arrangements are becoming more varied and less stable leading to the break-up of the family model, which implies continued fertility decline. Secondly, the rules of marriage are becoming weaker without necessarily abandoning the institution of the family, suggesting stabilization at low levels of fertility. Thirdly, the meaning of marriage and the family is changing while their central importance remains, in which case there is room for a rise in fertility.

The main fertility decline in Germany occurred around the turn of the twentieth century. The baby boom after the Second World War represented a temporary rise, although the decline later resumed, bringing the TFR close to 1.5 in 1973. In East Germany, pronatalist policies succeeded in reversing the drop; the TFR hovered between 1.70 and 1.95 from the late 1970s to the late 1980s, a possible indicator of the maximum scope for policy manipulation. After the reunification of the country, however, the TFR in the East plunged well below 1.0.

The post-war fertility decline was characterized initially by decreasing proportions of women with three or more children. More recently, its most prominent feature has become rising childlessness, which is now largely voluntary and is related to the change in living arrangements. Both first marriage and the birth of the first child are being postponed, which works against an upswing in fertility. As a result of these changes, the population is becoming polarized toward a family sector on one side and a non-family sector on the other. The latter is growing at the expense of the former although the family sector continues to predominate.

Two scenarios can be envisaged for the future. To the extent that the family sector does not lose further ground, fertility may stabilize near its current level. If childlessness continues to increase, however, fertility will inevitably reach even lower levels. Not only demographic but also broader social trends make such a development seem likely.

Since 1990, eastern Germany has experienced a "demographic shock" associated with profound social and economic change. Although fertility was extremely low for several years, it is now rising, and convergence with patterns in the west may be under way.

Recent fertility changes in Ireland and the future of Irish fertility

James McCarthy and Jo Murphy-Lawless

Until recently, Ireland was viewed as a demographic outlier in Western Europe. The TFR remained above 3.0 through the 1970s. A process of rapid change set in at the beginning of the 1980s, however, and by 1995 the TFR had

dropped below 1.9. Ireland has clearly joined the mainstream of demographic development in the West.

The fertility decline was concentrated among those in their twenties and, to a lesser extent, those in their thirties. Although the overall downward trend slowed somewhat after 1990, fertility rates continued to fall at ages 20-24 and, especially, at ages 25-29. Changing marriage patterns were an important factor. First marriage rates dropped dramatically at younger ages, probably representing a movement away from formal marriage rather than an increase in age at marriage. Nevertheless, marital fertility also fell, particularly among younger women. Births of parities five and higher became quite rare. At the same time, non-marital fertility rates have risen, and more than one out of five births now occurs outside of marriage.

These changes reflect major shifts in Irish society, politics and economic life. Contraception has become widely available, and even the right to abortion under certain circumstances is recognized. Divorce is now legal, and there is State support for unmarried mothers. The level of education has risen, incomes have increased for many people and the influence of the Catholic church has declined.

Some analysts foresee a continuing downward trend in Irish fertility until the TFR reaches a level around 1.5; such a pattern would be similar to that of Southern European nations where there have recently been steep declines. If, on the other hand, public policy moves to improve the status of women, and the conflict between childbearing and economic activity is reduced, it is possible that the fall could be stopped or even reversed, as has occurred in several countries in Northern Europe. A number of steps in this direction have already been taken, and the State continues to be committed to considerable support of women and children. The women's movement has emerged as a powerful political force in Ireland and is likely to be a major determinant of change in the years to come.

Levels and trends of fertility in Italy: are they desirable or sustainable?

Antonio Golini

Fertility has been below replacement level in Italy since 1977, and the TFR dipped as low as 1.17 in 1995. Although cohort fertility has fallen less sharply, it is currently estimated to have reached a level of about 1.59 children per woman. Fourth- and higher-order births no longer represent more than a very small proportion of all births, and first births are the only order that is increasing. There is substantial geographical variation within Italy; fertility may be close to an absolute minimum in the province of Ferrara, where the TFR was just 0.79 in 1994.

Many factors have contributed to the fall in fertility. An exceptionally high proportion of women use contraception. The average age at marriage has risen, while non-marital fertility remains low compared to other European countries. At the same time, young people are staying longer in school, and there is considerable unemployment among youth. Thus, the path from

adolescence to adulthood and independence is a long one, and childbearing starts later and later.

More remote determinants include the rising status of women. Female labour force participation has risen while that of males has fallen, but there has been little adjustment in work regulations to make it easier for women to combine employment with raising a family. In addition, any suggestion of pronatalist policies arouses memories of fascism, and, until recently, it was excess fertility that was believed to be a problem. The public has become aware of global demographic and environmental issues. Affluence and the desire for personal fulfilment may also be turning people away from the family.

Future childbearing depends on the positive choices of individual couples. Among women of reproductive age, average expected family size is still around 2.1, but as family formation proceeds, the costs associated with childbearing are increasingly recognized. Although the media have recently shown interest in the fertility decline and its implications, people reject the notion that the needs of the community should influence their personal decisions. Measures to safeguard individual rights have been enacted with little regard for their possible negative demographic effects. Politicians are now becoming engaged in these issues, but strong support for the family appears unlikely in view of budgetary constraints.

In the long term, fertility that is so far below replacement will lead to serious decline in the size of the population and an age structure weighted very heavily toward older people. In 50 years, the population over age 60 would outnumber people of working age, and there would be five persons over age 80 for every child under age five. Negative momentum would develop, with persistent effects.

This prospect is undesirable and unsustainable with respect to both the speed of change and the growing lack of equilibrium between generations. While unemployment would be relieved, the ageing of the labour force would reduce its flexibility. As only children, most young people would be brought up in a distorted emotional climate. Immigration on the scale necessary to replace lost births would be socially disruptive.

Far-reaching policy changes would be necessary to bring the TFR up to 1.7 or 1.8 children per woman. In the short run this is not possible. The possibilities for reconciling the conflicting interests of individual women and society at large must be examined and appropriate steps taken. The disincentives to childbearing that are part of the present welfare system must be removed.

Below-replacement fertility in Japan: trends, determinants and prospects

Ryuichi Kaneko

Owing to recent fertility decline, the population of Japan is ageing rapidly and will begin to decrease in size as early as 2007. Starting from a level of around 4.4 births per woman in 1947-1949, the TFR had dropped by 53 per cent in 1957. Most of the reduction was in marital fertility. A period of relative stability followed until the mid-1970s. Decline then set in again, and by 1996 the TFR was only 1.42.

In contrast to most European countries, few births in Japan occur outside of marriage. The downward trend in the TFR since 1975 can be entirely accounted for by reductions in the proportion of women of childbearing age who are married and would have been considerably steeper had there not been a compensating rise in marital fertility. Changing nuptiality has mainly taken the form of increasing proportions never married. Very recently, some signs of declining marital fertility have also been observed.

Age at marriage has risen because the interval between the time when the partners first meet and the actual wedding has lengthened. At first, prolonged education was the primary factor working to delay marriage. A shift toward white collar occupations may now be becoming important as well. Although women have continued to view marriage very positively, implying that almost all would eventually marry, attitudes may be shifting. In addition, there no longer seem to be effective social mechanisms through which appropriate mates can meet.

Women's educational and employment opportunities have risen, but there has been little change in gender roles in the home. Men's lives continue to be regulated by the needs of the businesses for which they work. Women who have achieved economic independence are likely to value marriage and family less highly.

In its latest population projections, the Government of Japan has altered a number of key assumptions. The medium variant calls for a rise in the cohort mean age at first marriage and an increase in the proportion of women who never marry, along with downward movement of the TFR from 1.42 to 1.38 in the year 2000 followed by recovery to 1.61 by 2030 due to the cessation of postponement of marriage. The proportion of the population over age 60 is expected to increase rapidly while that of working age will decline. Overall population ageing is expected to be associated with ageing within the labour force, a decline in consumption, an increase in the cost of social security and a reduction in savings and investment. The Government expects to counter these negative trends by means of measures to support women and families and the establishment of new long-term care services for the elderly.

Fertility trends in Russia and the European newly independent States: crisis or turning point?

Sergei V. Zakharov

The demographic histories of the countries formed from the European part of the former Soviet Union have much in common. In all of them, the balance of births and deaths shifted to become negative in the early 1990s. The media and the public have given much attention to this development, which is typically viewed in alarmist terms and referred to as a "population crisis" resulting from the introduction of social and economic reforms. But it is necessary to analyse recent demographic trends in the context of long-term change.

In reality, natural increase has been diminishing for at least three decades. Fertility first fell below replacement level among the native populations of

Estonia and Latvia in the 1970s. The same process was clearly under way in other parts of the region. Thus, the emergence of negative growth rates should have come as no surprise.

In line with the pronatalist stance of the Communist Party, the Government of the Soviet Union introduced a number of measures designed to raise fertility in the early 1980s. It is now clear that the ensuing upturn in the TFRs resulted from change in the timing of births rather than any real increase in family size. It could have been foreseen that, when the trend toward younger childbearing came to an end, TFRs would decline more rapidly than would have been the case without the policy changes of the 1980s.

Historically, the timing of the demographic transition differed widely within the Russian Empire. Fertility decline started in the north-west around the middle of the nineteenth century and spread to the south-east over several decades. This can largely be explained by long-standing differences in marriage patterns among the various regions. Marriage was late and far from universal in the Baltic countries, while women in Russia, Ukraine and parts of Belarus married early and few never married. Despite the fact that these countries had dissimilar political and economic systems before the Second World War, the force of the demographic transition was such that their fertility patterns gradually converged.

By the beginning of the 1980s, the TFRs in these republics fell within a narrow range from 1.85 to 2.05. Subsequent trends include both features shared with Western Europe, where the "2nd demographic transition" was under way, and features that are unique to this area. Modern contraceptive methods were not widely available, and abortion was the most common method of family planning. Policy focused on privileges for mothers of small children and families with three or more children, which tended to reinforce the pattern of early childbearing.

Now, all of these countries appear to have entered a process of deep structural transformation in fertility behaviour. The resulting extremely low total fertility rates do not necessarily mean that cohort fertility will fall to the same levels. The transition toward the modern Western fertility pattern, characterized by late marriage, postponement of childbearing and long birth intervals has begun everywhere. This is made possible partly by the spread of modern contraceptive practice. Society tends to be divided between a group that clings to traditional forms of behaviour and one that has adopted new ways.

Thus, the interpretation of the present situation as symptomatic of a crisis is not well thought out. Demographic trends in Eastern Europe and the European part of the former Soviet Union are probably headed toward convergence with the West. The profound socio-economic changes that are taking place simultaneously have merely hastened this process. Population projections incorporating such a strategy that have been produced in the last few years have provided forecasts of fertility that have proved to be accurate so far.

Fertility trends in Sweden up to 1996

Britta Hoem and Jan M. Hoem

Important changes have taken place in Europe since the 1960s: couples have achieved a new level of control over reproduction, women have become better educated, they have taken up employment in unprecedented numbers and there has been a new push toward gender equality. Sweden has been one of the forerunners in the emancipation of women, but its fertility has never fallen to the levels observed in many other countries, and recently fertility has appeared to be positively rather than negatively associated with women's labour force participation.

From the 1960s through the early 1980s, Swedish fertility declined similarly to other European countries. After that, however, it departed from the general trend, rising quite steeply up to 1990, when the TFR reached 2.14, only to drop sharply in the early 1990s.

Swedish family policies include a variety of provisions aimed at enabling women to work without having to curtail their childbearing. Although these measures were not explicitly intended to influence the level of fertility, it is likely that they have had this effect. In the context of a strong emphasis on labour force participation, women's rights are framed in terms of the working woman's right to have children rather than the right of mothers to take paid employment.

These policies developed over a period of time as the result of mutually reinforcing developments. In the mid-1960s, large numbers of women came into the labour force, responding to the availability of jobs, many of which were in new, service occupations. Childbearing tended to be postponed, and fewer and fewer women had more than two children. This situation drew public attention to the lack of real equality for men and women in the family as well as the labour market. Public policy became simultaneously more generous and more concerned with gender equality and the dual-earner family. Relatively early on, the almost universally observed negative association between childbearing and women's labour force participation was effectively broken in Sweden.

The upswing in fertility in the late 1980s, which affected all birth orders, appears to have resulted principally from three factors. Overall economic trends were highly favourable. The "eligibility interval" for obtaining benefits following a subsequent birth equal to those received after the initial birth was extended to 30 months; thus, family policy in Sweden, although strongly tied to earned income, is unique in encouraging close spacing of children. Lastly, a pervasive mood of optimism pervaded the country.

The driving force behind the subsequent fertility decline is no doubt the general economic recession and, in particular, the great difficulty faced by young people in finding jobs. Third and fourth birth rates have moved down sharply, and first birth rates even more. The latter have dropped among women with little education but have remained stable among women with more education and a secure position in the labour market. Shrinking national budgets have

led to both cuts in family benefits and loss of job opportunities for many women in the public sector.

The current situation may be partly a shock reaction to the recent economic reversal. It seems likely that recent fluctuations in the TFR reflect mainly changes in the tempo of childbearing rather than the numbers of births women will eventually have. Cohort fertility has remained close to two children per woman for many decades and will probably continue at that level.

Fertility in the United States: current features and future trends

S. Philip Morgan

With a TFR of 2.01 in 1995, the United States has one of the highest levels of fertility in the developed world. The TFR has fluctuated widely since at least the 1930s as a result of major period factors. Contemporary American fertility has a number of notable features. First and second births now predominate, while fourth and higher order births are quite rare. The proportion of women remaining childless is substantial and variable. The age at which women enter childbearing ranges widely from the teens up to the late thirties. Substantial proportions of births occur to unmarried women. Childbearing patterns vary considerably among racial and ethnic groups. Socio-economic level affects the timing and to a lesser extent the number of births. Access to contraception and abortion is a crucial determinant of reproductive behaviour.

Regarding the future, one theory looks to a continuation of the long-term secular decline associated with the fertility transition. Trends over the last two decades have been quite stable, however. A competing view emphasizes cyclical effects, but the predictive power of the cyclical factors identified by Easterlin, for example, has not been borne out in recent experience.

It may be more accurate and useful to view future trends as shaped by flexible and manipulable features of the social context. Fertility change must be understood in the setting of family change, which is, in turn, a product of social change. Social change theory should stress the contested and indeterminate nature of such change. The future course of fertility in the United States is likely to be influenced by many specific factors, such as the availability of abortion, the level and nature of public support for children, the economic prospects of young men vis-à-vis young women etc. Different segments of society have different stakes in these issues and different resources to bring to bear. The outcomes are sure to be contested and are unpredictable.

The characteristics of American fertility outlined above have been present for more than two decades and could continue to prevail for some time. On the other hand, they might be altered either by major events or by shifts in the social context as different issues are worked out.

ANNEXES

ANNEX I

Agenda

1. Opening of the Meeting
2. Fertility trends among low fertility countries
3. Determinants of below-replacement fertility
4. Future expectations for fertility
5. Consequences of sustained below-replacement fertility
6. Policy interventions
7. Panel discussion: consequences of and policy responses to below-replacement fertility
8. Conclusions and closing of the formal sessions

ANNEX II

List of participants

Experts

Eduardo E. Arriaga, International Programs Center, U.S. Bureau of the Census, Washington, D.C., United States of America

John Bongaarts, Policy Research Division, The Population Council, New York, NewYork, United States of America

Jean-Claude Chesnais, Institut national d'études démographiques, Paris, France

Paul Demeny, The Population Council, New York, New York, United States of America

Jürgen Dorbritz, Bundesinstitut für Bevölkerungsforschung, Wiesbaden, Germany

Antonio Golini, Department of Demographic Sciences, University "La Sapienza", Rome, Italy

Britta Hoem, Statistics Sweden, Stockholm, Sweden

Zhenghua Jiang, State Family Planning Commission of China, Beijing, China

Elise Jones, Newtown, Pennsylvania, United States of America

Ryuichi Kaneko, Department of Research and Planning and Coordination, National Institute of Population and Social Security Research, Tokyo, Japan

James McCarthy, Center for Population and Family Health, Columbia University, New York, New York, United States of America

S. Philip Morgan, Population Studies Center, The University of Pennsylvania, Philadelphia, Pennsylvania, United States of America

Michael S. Teitelbaum, Alfred P. Sloan Foundation, New York, New York, United States of America

Sergei V. Zakharov, Laboratory of Population Dynamics, Centre of Demography and Human Ecology, Institute for Economic Forecasting, Moscow, Russian Federation

United Nations Population Division

Joseph Chamie, Director

Larry Heligman, Assistant Director

Birgitta Bucht, Assistant Director

Joseph Alfred Grinblat, Chief, Population Estimates and Projections Section

United Nations Population Division (continued)
Aminur Khan, Chief, Fertility and Family Planning Section
Bhakta Gubhaju, Population Affairs Officer
Serguey Ivanov, Population Affairs Officer
Imelda Sta. Maria, Administrative Assistant

United Nations Population Fund
Michael Vlassoff, Senior Technical Officer, Technical and Evaluation Division

ANNEX III

List of documents

Symbol	*Agenda item*	*Title/author*
UN/POP/BRF/1997.1	-	Provisional agenda
	Background papers	
UN/POP/BRF/BP/1997/1	2	Fertility trends among low fertility countries Population Division
UN/POP/BRF/BP/1997/2	3	Determinants of below-replacement fertility Jean-Claude Chesnais
UN/POP/BRF/BP/1997/3	4	Future expectations for below-replacement fertility Population Division
UN/POP/BRF/BP/1997/4	5	Sustained below-replacement fertility: realities and responses Michael Teitelbaum
UN/POP/BRF/BP/1997/5	6	Policy interventions in response to below-replacement fertility Paul Demeny
	Country papers	
UN/POP/BRF/CP/1997/1		The fertility transition and prospects in China and other Eastern Asian countries Zhenghua Jiang
UN/POP/BRF/CP/1997/2		The future of French fertility: back to the past, or a new implosion? Jean-Claude Chesnais
UN/POP/BRF/CP/1997/3		The future of the family and future fertility trends in Germany Jürgen Dorbritz and Charlotte Höehn

Symbol	Agenda item	Title/author
UN/POP/BRF/CP/1997/4		Recent fertility change in Ireland and the future of Irish fertility James McCarthy and Jo Murphy-Lawless
UN/POP/BRF/CP/1997/5		Level and trends of fertility in Italy: are they desirable or sustainable? Antonio Golini
UN/POP/BRF/CP/1997/6		Below-replacement fertility in Japan: trends, determinants, and prospects Ryuichi Kaneko
UN/POP/BRF/CP/1997/7		Fertility trends in Russia and the European newly Independent States: crisis or turning point? Sergei Zakharov
UN/POP/BRF/CP/1997/8		Fertility trends in Sweden up to 1996 Britta Hoem and Jan M. Hoem
UN/POP/BRF/CP/1997/9		Fertility in the United States: current features and future trends S. Philip Morgan

Information papers

UN/POP/BRF/1997.1	Provisional agenda
UN/POP/BRF/1997/INF.1	Provisional organization of work
UN/POP/BRF/1997/INF.2/Rev.1	Provisional list of participants
UN/POP/BRF/1997/INF.3/Rev.1	Provisional list of documents

Part Two

BACKGROUND PAPERS

Population Bulletin of the United Nations, Nos. 40/41—1999

FERTILITY TRENDS AMONG LOW FERTILITY COUNTRIES

Population Division

Monitoring of levels and trends of fertility covering all countries around the world with reasonably good data has been a subject of interest of the United Nations. Besides, the United Nations study has also focused on analysis of fertility levels and trends for those countries that have achieved low levels of fertility. The earliest United Nations study dealing with the fertility behaviour of low fertility countries covered the period from about the 1880s to 1953 (United Nations, 1958). A series of such studies has been carried out since then to monitor the levels and trends of fertility prevailing in low fertility countries (United Nations, 1965; 1975; 1977; 1990). The most recent and comprehensive study on levels and trends of fertility in low fertility countries was undertaken by the United Nations in the early 1990s, covering the period from 1965 to 1989, culminating in a publication entitled *Patterns of Fertility in Low-Fertility Settings* (United Nations, 1992).

The primary objective of the present report is to update the latest study with the most recent data on levels and trends of fertility and other indicators, such as the mean age of women at child-bearing and the percentages of births by birth order. Also incorporated in this report are countries that have recently achieved low fertility. For the purpose of this study, low fertility countries are defined as those countries or areas where the total fertility rate (TFR)[1] is below replacement level fertility, that is, 2.1 in 1996, or the most recent year for which data were available. This study comprises: (*a*) Armenia, China, Cyprus, Georgia, Hong Kong, Japan, Macau, Republic of Korea and Singapore in Asia; (*b*) most of the countries in Europe; (*c*) Bahamas, Barbados, Cuba, Martinique and Trinidad and Tobago in the Caribbean; (*d*) Canada and the United States of America in Northern America; and (*e*) Australia and New Zealand in Oceania. Countries with fewer than 150,000 population have been omitted from the study. The period covered in this study is from 1975 to 1996 or the most recent year. It is, however, to be noted that fertility began to decline long before 1975 in a number of countries. The purpose of this study is to examine fertility levels and trends over the past 21-year period.

LEVELS AND TRENDS IN TOTAL FERTILITY

Table 1 and figure I present levels and trends in the total fertility rate. It is revealed that with the exception of some countries in Eastern Asia, the Caribbean and Ireland in Europe, all the low fertility countries examined in this study had a total fertility rate of less than 3 children per woman in 1975. Interestingly, in Western Europe and Northern America, the total fertility rate was already

TABLE 1. LEVELS AND TRENDS IN TOTAL FERTILITY RATES, 1975-1996

Country or area	*1975*	*1980*	*1985*	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*
Asia										
Eastern Asia										
China	3.57	2.31	2.20	2.31	2.20	2.00	2.00	1.86	..	..
Hong Kong	2.75	2.06	1.47	1.19	1.22	1.26	1.23	1.22	..	..
Japan	1.93	1.74	1.74	1.51	1.51	1.47	1.43	1.47	..	..
Macau	..	1.87[a]	..	..	1.64	..	1.41	1.43	1.36	..
Republic of Korea	3.23	2.70	1.67	1.58	1.70	1.77	1.73	1.72	..	..
South-eastern Asia										
Singapore	2.11	1.74	1.62	1.72	1.82	1.82	1.83	1.80	1.77	..
Western Asia										
Armenia	2.79	2.34	2.55	2.63	2.58	2.35	1.97	1.70	1.63	..
Cyprus	2.01	2.46	2.38	2.42	2.33	2.49	2.27	2.23	2.13	2.08
Georgia	2.52	2.21	2.26	2.20	2.15	1.79	..	..	..	..
Europe										
Eastern Europe										
Belarus	2.20	2.00	2.07	1.91	1.80	1.75	1.61	1.57	1.39	..
Bulgaria	2.24	2.05	1.95	1.81	1.65	1.54	1.46	1.37	1.24	1.24
Czech Republic	2.43	2.07	1.95	1.89	1.86	1.72	1.67	1.44	1.28	1.18
Hungary	2.38	1.92	1.83	1.84	1.86	1.77	1.69	1.64	1.57	1.46
Poland	2.27	2.28	2.33	2.04	2.05	1.93	1.85	1.80	1.61	1.60
Republic of Moldova	2.55[b]	2.36[c]	2.66[d]	2.39	2.26	2.21	2.10	1.95	1.76	..

Country or area	1975	1980	1985	1990	1991	1992	1993	1994	1995	1996
Romania	2.62	2.45	2.26	1.83	1.56	1.51	1.44	1.41	1.34	1.30
Russian Federation	1.99[b]	1.89[c]	2.06[d]	1.89	1.73	1.55	1.39	1.40	1.34	..
Slovakia	2.55	2.32	2.25	2.09	2.05	1.98	1.92	1.66	1.52	1.45
Ukraine	2.02	1.95	2.02	1.89	1.81	1.72	1.55	1.50	1.40	..
Northern Europe										
Denmark	1.92	1.55	1.45	1.67	1.68	1.76	1.75	1.81	1.81	..
Estonia	2.04	2.02	2.12	2.05	1.79	1.69	1.45	1.37	1.32	1.30
Finland	1.69	1.63	1.64	1.78	1.80	1.85	1.81	1.85	1.81	1.76
Iceland	2.65	2.48	1.93	2.31	2.19	2.21	2.22	2.14	2.08	2.12
Ireland	3.40	3.23	2.50	2.12	2.08	1.99	1.93	1.86	1.87	1.91
Latvia	1.96	1.90	2.09	2.02	1.86	1.73	1.51	1.39	1.25	1.16
Lithuania	2.20	2.00	2.10	2.00	1.97	1.89	1.67	1.54	1.49	1.43
Norway	1.98	1.72	1.68	1.93	1.92	1.88	1.86	1.87	1.87	1.89
Sweden	1.78	1.68	1.73	2.14	2.12	2.09	2.00	1.89	1.74	1.61
United Kingdom	1.81	1.89	1.80	1.83	1.82	1.79	1.76	1.74	1.71	1.71
Southern Europe										
Bosnia and Herzegovina	2.35	1.88	1.89	1.70	..	..	..	..	..	..
Croatia	1.91	1.92	1.82	1.63	1.53	1.48	1.52	1.47	1.48	..
Greece	2.28	2.23	1.68	1.43	1.38	1.39	1.34	1.36	1.32	1.31
Italy	2.21	1.68	1.45	1.36	1.33	1.33	1.26	1.22	..	..
Malta	2.17	1.98	1.99	2.05	2.04	2.12	2.01	1.89	1.83	2.01
Portugal	2.52	2.19	1.73	1.57	1.57	1.54	1.52	1.44	1.41	1.44
Slovenia	2.16	2.11	1.72	1.48	1.46	1.34	1.34	1.32	1.29	1.28
Spain	2.80	2.21	1.64	1.36	1.33	1.32	1.27	1.21	1.17	1.15
Yugoslavia	2.31	2.26	2.21	2.08	2.08	1.92	1.91	1.85	1.88	..

TABLE 1. *(continued)*

Country or area	*1975*	*1980*	*1985*	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*
Western Europe										
Austria	1.83	1.65	1.47	1.45	1.50	1.49	1.48	1.44	1.40	1.42
Belgium	1.74	1.69	1.51	1.62	1.66	1.65	1.60	1.55	1.55	..
France	1.93	1.95	1.82	1.78	1.77	1.73	1.66	1.65	1.70	1.72
German Dem. Rep.	1.54	1.94	1.73	1.52	0.98	0.83	0.78	0.77	0.84	0.93
Germany, Fed. Rep. of.	1.45	1.45	1.28	1.45	1.42	1.40	1.39	1.35	1.34	1.39
Germany	..	..	..	..	..	1.29	1.28	1.24	1.25	1.29
Luxembourg	1.52	1.50	1.38	1.62	1.60	1.67	1.69	1.72	1.67	1.76
Netherlands	1.66	1.60	1.51	1.62	1.61	1.59	1.57	1.57	1.53	1.53
Switzerland	1.61	1.55	1.52	1.59	1.58	1.58	1.51	1.49	1.48	1.50
Latin America and the Caribbean										
Caribbean										
Bahamas	2.54	2.87	2.48	2.03	..	1.95	..	..	..	
Barbados	2.23[e]	1.88	..	1.57[f]	..	..	..	..	..	
Cuba	..	1.64	1.90	1.83	1.69	..	..	..	..	
Martinique	3.69[g]	..	2.14	2.02	1.93	1.93	..	..	..	
Trinidad and Tobago	3.12	3.20	3.21	2.40	..	..	2.03			
Northern America										
Canada	1.82	1.71	1.63	1.71	1.70	1.69	1.66	..	..	
United States of America	1.77	1.83	1.84	2.08	2.07	2.07	2.05	2.07	..	

Country or area	1975	1980	1985	1990	1991	1992	1993	1994	1995	1996
Oceania										
Australia	2.22	1.92	1.89	1.91	1.85	1.89	1.87	1.85	..	
New Zealand	2.33	2.05	1.93	2.18	2.16	2.12	2.10	2.04	2.03	

NOTE: Two dots (..) indicate that data are not available.

[a]Refers to 1981.

[b]Refers to 1974/75.

[c]Refers to 1979/80.

[d]Refers to 1984/85.

[e]Refers to 1976.

[f]Refers to 1988.

[g]Refers to 1974.

Sources: Australian Bureau of Statistics. *Yearbook of Australia 1996.* Canberra, 1996; China Population Information and Research Centre. *China Population Today: Special Issue for the World Summit for Social Development*, Vol. 12, No. 1, 1995; Coale, Ansley J. and Chen Sheng Li. Basic data on fertility in the provinces of China, 1940-82. *Papers of the East-West Population Institute*, No. 104, 1987; Council of Europe. *Recent Demographic Developments in Europe 1997.* Council of Europe Publishing, Strasbourg, 1997; Statistics Canada. *Report on the Demographic Situation in Canada 1995.* Ottawa, 1995; Statistics New Zealand. *Demographic Trends 1995*, Wellington, 1995; US Bureau of the Census. *Statistical Abstract of the United States 1995.* Washington DC, 1995; United Nations. *Demographic Yearbook 1981.* New York, 1983; United Nations. *Demographic Yearbook 1986.* New York, 1988; United Nations. *Demographic Yearbook 1995.* New York, 1997.

Figure I. Trends in total fertility rates: 1975-1996

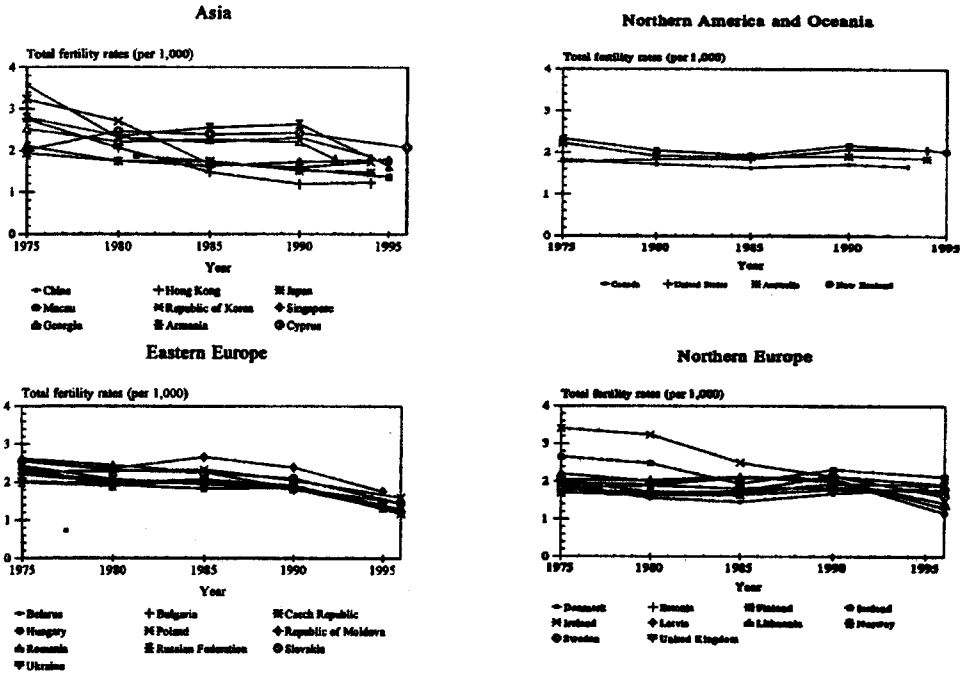
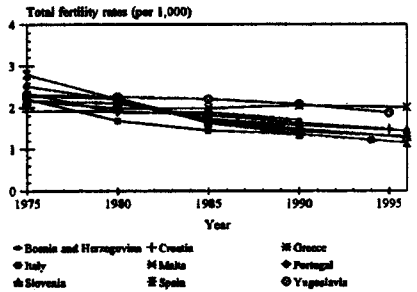
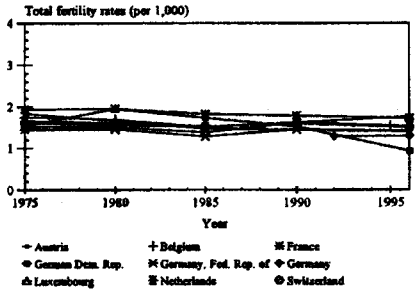


Figure I *(continued)*

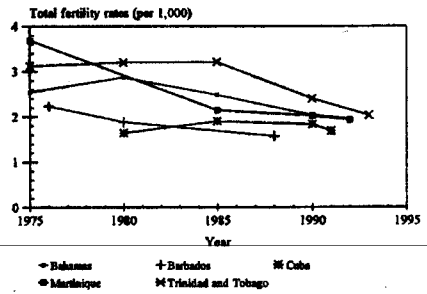
Southern Europe



Western Europe



Latin America and the Caribbean



Source: Table 1.

below replacement level in that year. Few other countries had also achieved this fertility level in that year. Among the Asian countries, Cyprus and Japan had the total fertility rate that was already below replacement level in 1975, while Singapore had just reached this level in that year. In 1980, Hong Kong and Macau had lowered their fertility to below replacement level. The Republic of Korea joined them to achieve below-replacement fertility in 1985, and China and Georgia reached this level in 1992 and Armenia in 1993. These low fertility countries in Asia continued to experience a sustained decline in fertility in the 1980s. In many of these countries or areas, such as Hong Kong, Japan, the Republic of Korea and Singapore, fertility appears to have reached a plateau since 1990, while in China, Macau, Armenia and Georgia fertility continued to decline in the 1990s. However, in Cyprus fertility had fluctuated between 2.5 and 2.3 during the period 1980-1992 and had since resumed its declining trend. It is also to be noted that the total fertility rate of Hong Kong (1.2) in 1994 is one of the lowest in the world.

In the European countries in 1975, fertility was relatively very low: there were, however, notable deviations across the countries. The highest total fertility rate of 3.4 was recorded in Ireland. With the exception of Ireland, all the European countries had their fertility reduced to below 3 children per woman in 1975. It is also notable that the Russian Federation and Ukraine in Eastern Europe, Denmark, Finland, Latvia, Norway, Sweden and the United Kingdom of Great Britain and Northern Ireland in Northern Europe, Croatia in Southern Europe and all the countries in Western Europe had the total fertility rate already below replacement level in 1975. The lowest fertility of around 1.5 was reported in the former German Democratic Republic, the former Federal Republic of Germany[2] and Luxembourg in 1975. Despite the low level of fertility in 1975 in all the countries of Europe, the total fertility rate registered a decline over the next decade to 1985, while, with the few exception of some countries in Northern and Western Europe where fertility had temporarily gone up slightly between 1985 and 1990, most of the countries in Europe had sustained heir fertility decline through 1996. Finland and Luxembourg are the only two countries where fertility had gone up between 1975 and 1996. In a majority of the countries in Northern, Southern and Western Europe, the total fertility rate appears to have levelled off, while in Eastern Europe fertility has continued to decline during the recent period.

In the Caribbean, Martinique and Trinidad and Tobago had the TFR exceeding 3 children per woman in 1975, while the TFR was 2.5 in the Bahamas and 2.2 in Barbados in that year, and Cuba had a TFR of 1.6, much below-replacement-level fertility in 1980. In the Bahamas, fertility had gone up slightly in 1980 and then declined thereafter. Cuba also witnessed an increase in fertility to 1.9 in 1985 and later declined to 1.7 in 1991. However, Barbados, Martinique and Trinidad and Tobago experienced a continuous decline in fertility.

In Northern America, Canada and the United States of America both had the TFRs that were below the replacement level in 1975. While Canada had sustained the decline, with some fluctuation, through the year 1993, the United States of America exhibited an increase in fertility up to the year 1990 and it remained almost constant through the year 1994. In Oceania, Australia and New

Zealand, which had total fertility rates of a little over 2.1 in 1975, experienced a continuous decline in fertility. However, there was a temporary rise in fertility in New Zealand between 1985 and 1990.

Table 2 and figure II show a comparative picture of countries by their level of fertility in 1975 and 1996 or the most recent year the data were available. Table 3 gives the trend in total fertility rates between 1975 and the most recent year, in terms of both the total fertility rate index (1975=100) and percentage decline. A summary indicator of the percentage change during the period is given in the last column of table 3. Countries are classified by percentage total decline in table 4. It is apparent that in an overwhelming majority of countries, the total fertility rate declined between 1975 and the most recent year. It is notable that a spectacular decline in fertility was exhibited in the Czech Republic, Hong Kong, Romania and Spain. Hong Kong and Spain registered a drop in TFR by 56 and 59 per cent respectively, while in the Czech Republic and Romania the TFR fell by a little over 50 per cent. Several countries experienced a decline in TFR between 30 and 49 per cent. Among them over two fifths drop in TFR was recorded in Armenia, China, the Republic of Korea, in Asia; Bulgaria, Greece, Ireland, Italy, Latvia, Portugal, Slovakia and Slovenia in Europe; and Martinique in the Caribbean.

TABLE 2. CLASSIFICATION OF COUNTRIES OR AREAS BY LEVEL OF TOTAL FERTILITY RATE: 1975-1996

Total fertility rate in 1975	*Total fertility rate in 1996*		
	2.00 to 2.49	*1.50 to 1.99*	*Less than 1.50*
3.00 or more	Trinidad and Tobago[e]	China[f] Ireland Martinique[d,h] Rep. of Korea[f]	
2.50 to 2.99	Iceland	Armenia[g] Bahamas[d] Georgia[d] Rep. of Moldova[g,i]	Hong Kong[f] Portugal Romania Slovakia Spain
2.00 to 2.49	Cyprus Malta New Zealand[g]	Australia[f] Barbados[a,j] Bosnia and Herzegovina[b] Poland Singapore[g] Yugoslavia[g]	Belarus[g] Bulgaria Czech Republic Estonia Greece Hungary Italy[f] Lithuania Slovenia Ukraine[g]

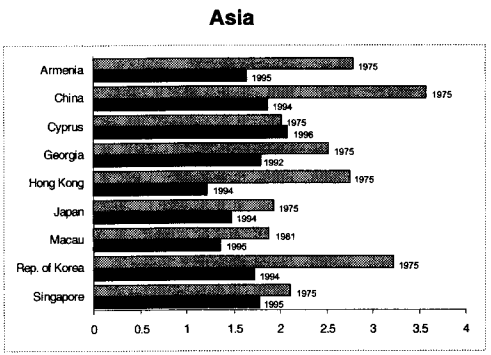
Total fertility rate in 1975	*Total fertility rate in 1996*		
	2.00 to 2.49	*1.50 to 1.99*	*Less than 1.50*
Less than 2.00	United States of America[f]	Belgium[g] Canada[e] Cuba[c,l] Denmark[g] Finland France Luxembourg Netherlands Norway Sweden Switzerland United Kingdom	Austria Croatia[g] German Dem. Rep. Germany, Fed. Rep. of Japan[f] Latvia Macau[g,k] Russian Federation[g,i]

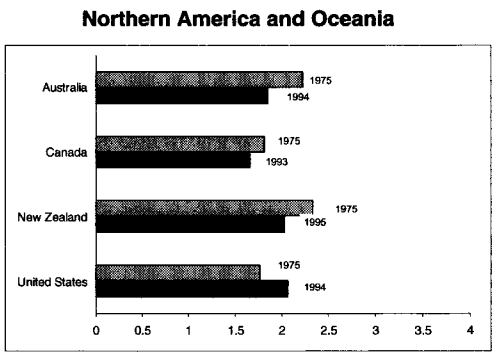
[a]Refers to 1988.
[b]Refers to 1990.
[c]Refers to 1991.
[d]Refers to 1992.
[e]Refers to 1993.
[f]Refers to 1994.
[g]Refers to 1995.
[h]Early rate refers to 1974.
[i]Early rate refers to 1974/75.
[j]Early rate refers to 1976.
[k]Early rate refers to 1981.
[l]Early rate refers to 1980.
Source: Table 1.

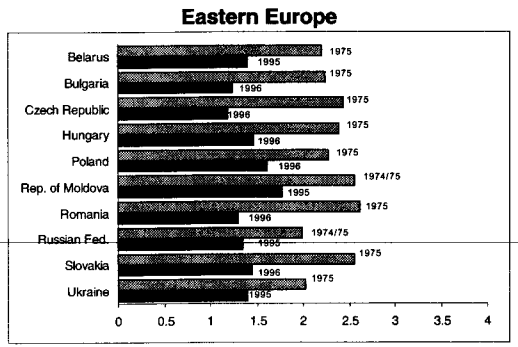
On the other hand, there are five countries, namely Cuba, Cyprus, Finland, Luxembourg and the United States of America, that witnessed an increase in fertility between 1975 and 1996 or the most recent year. The largest increase of 17 per cent was observed in the United States of America, followed by Luxembourg (16 per cent).

Table 5 presents an overall pattern of fertility change for the five-year periods beginning in 1975 and up to the most recent period, with a summary measure of average annual percentage change during this period. In table 6 countries are classified by average annual percentage decline. During the period 1975-1980, the largest decline in fertility took place in China, exhibiting a dramatic decline by 35 per cent. Bosnia and Herzegovina, Hong Kong, Italy and Spain also experienced a drop in fertility by at least 20 per cent during this period. On the other hand, there was over one fourth increase in fertility in the former German Democratic Republic, followed by 22 and 13 per cent increase in fertility in Cyprus and the Bahamas respectively. A small rise in fertility was also observed in the United Kingdom (4.4 per cent), the United States of America (3.5 per cent), Trinidad and Tobago (2.6 per cent), France (1 per cent) and Poland (0.4 per cent).

Figure II. Comparative levels of total fertility rates: 1975 and 1996







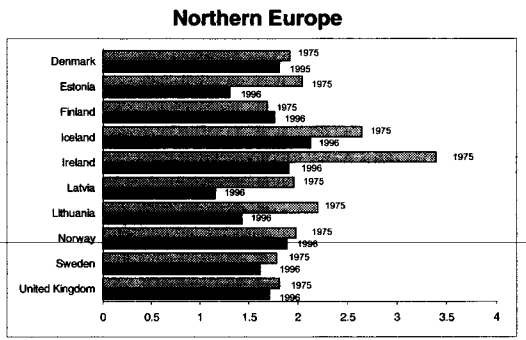
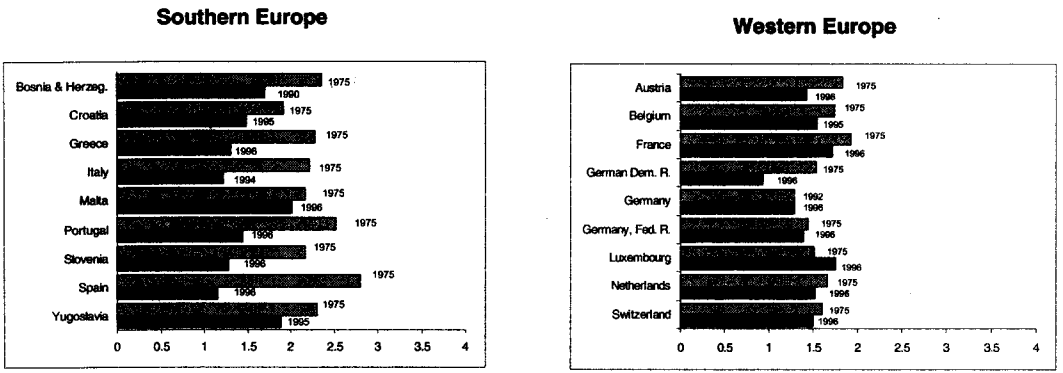
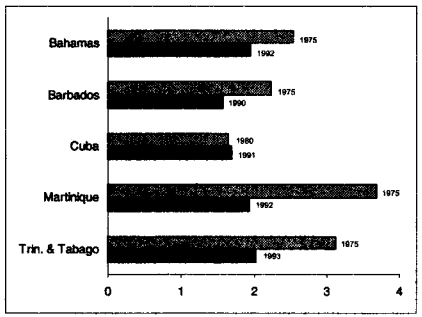


Figure II *(continued)*





Source: Table 1.

TABLE 3. TRENDS IN THE INDEX OF TOTAL FERTILITY RATE AND PERCENTAGE CHANGE: 1975-1996 OR MORE RECENT YEAR
(*1975 = 100*)

Country or area	*1975*	*1980*	*1985*	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*Percentage change*
Asia											
Eastern Asia											
China	100	65	62	65	62	56	56	52	..	..	-47.9
Hong Kong	100	75	53	43	44	46	45	44	..	..	-55.6
Japan	100	90	90	78	78	76	74	76	..	..	-23.8
Macau	..	100[a]	..	..	88	..	75	75	73	..	-27.3
Republic of Korea	100	84	52	71	53	55	54	53	..	..	-46.7
South-eastern Asia											
Singapore	100	82	77	82	86	86	87	85	84	..	-16.1
Western Asia											
Armenia	100	84	91	94	92	84	71	61	58	..	-41.6
Cyprus	100	122	118	120	116	124	113	111	106	103	+3.5
Georgia	100	88	90	87	85	71	..	..	..	..	-29.0
Europe											
Eastern Europe											
Belarus	100	91	94	87	82	80	73	71	63	..	-36.8
Bulgaria	100	92	87	81	74	69	65	61	55	55	-44.6

TABLE 3. *(continued)*

Country or area	*1975*	*1980*	*1985*	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*Percentage change*
Czech Republic .	100	85	80	78	77	71	69	59	53	49	-51.4
Hungary	100	81	77	77	78	74	71	69	66	61	-38.7
Poland	100	100	103	90	90	85	81	79	71	70	-29.5
Republic of Moldova . . .	100[b]	93[c]	104[d]	67	89	87	82	76	69	..	-31.0
Romania	100	94	86	70	60	58	55	54	51	50	-50.4
Russian Federation . . .	100[b]	95[c]	104[d]	95	87	78	70	70	67	..	-32.7
Slovakia	100	91	88	82	80	78	75	65	60	57	-43.1
Ukraine	100	97	100	94	90	85	77	74	69	..	-30.7
Northern Europe											
Denmark.	100	81	76	87	87	92	91	94	94	..	-5.7
Estonia	100	99	104	100	88	83	71	67	65	64	-36.3
Finland	100	96	97	105	107	109	107	109	107	104	+ 4.1
Iceland.	100	94	73	87	83	83	84	81	78	80	-20.0
Ireland.	100	95	74	62	61	59	57	55	55	56	-43.8
Latvia	100	97	107	103	95	88	77	71	64	59	-40.8
Lithuania	100	91	95	91	90	86	76	70	68	65	-35.0
Norway	100	87	85	97	97	95	94	94	94	95	-4.6
Sweden	100	94	97	120	119	117	112	106	98	90	-9.6
United Kingdom.	100	104	99	101	101	99	97	96	94	94	-5.5

Country or area	1975	1980	1985	1990	1991	1992	1993	1994	1995	1996	Percentage change
Southern Europe											
Bosnia and Herzegovina	100	80	80	72	..	..	..	..	..	..	-27.7
Croatia	100	101	75	85	80	77	80	77	77	..	-22.5
Greece	100	98	74	63	61	61	59	60	58	57	-42.5
Italy	100	76	66	62	60	60	57	55	..	..	-44.8
Malta	100	91	92	94	94	98	93	87	84	93	-7.4
Portugal	100	87	69	62	62	61	60	57	56	57	-42.9
Slovenia	100	98	80	69	68	62	62	61	60	59	-40.7
Spain	100	79	59	49	47	47	45	43	42	41	-58.9
Yugoslavia	100	98	96	90	90	83	83	80	81	..	-18.6
Western Europe											
Austria	100	90	80	79	82	81	81	79	76	78	-22.4
Belgium	100	97	87	93	95	95	92	89	89	..	-10.9
France	100	101	94	92	92	90	86	85	88	89	-10.9
German Dem. Rep.	100	126	112	99	64	54	51	50	55	60	-39.6
Germany, Fed. Rep. of	100	100	88	100	98	97	96	93	92	96	-4.1
Germany	..	..	..	..	..	100	99	96	97	100	-0.0
Luxembourg	100	99	91	107	105	110	111	113	110	116	+15.8
Netherlands	100	96	91	98	97	96	95	95	92	92	-7.8
Switzerland	100	96	94	99	98	98	94	93	92	93	-6.8

TABLE 3 *(continued)*

Country or area	*1975*	*1980*	*1985*	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*Percentage change*
Latin America and the Caribbean											
Caribbean											
Bahamas	100	113	98	83	..	77	..	..	..	..	-23.2
Barbados	100[c]	84	..	70[f]	..	..	..	..	..	..	-29.6
Cuba	..	100	116	112	103	..	..	..	..	..	+3.0
Martinique	100[g]	..	58	55	52	52	..	..	..	..	-47.7
Trinidad and Tobago	100	103	103	77	..	..	65	..	..	..	-34.9
Northern America											
Canada	100	94	90	94	93	93	91	..	..	..	-8.8
United States of America	100	103	104	118	117	117	116	117	..	..	+16.9
Oceania											
Australia	100	86	85	86	83	85	84	83	..	..	-16.7
New Zealand	100	88	83	94	93	91	90	88	87	..	-12.9

NOTE: Two dots (..) indicate that data are not available.
[a]Refers to 1981.
[b]Refers to 1974/75.
[c]Refers to 1979/80.
[d]Refers to 1984/85.
[e]Refers to 1976.
[f]Refers to 1988.
[g]Refers to 1974.
Source: Table 1.

TABLE 4. CLASSIFICATION OF COUNTRIES OR AREAS ACCORDING TO PERCENTAGE TOTAL DECLINE IN TOTAL FERTILITY RATE: 1975-1996

Countries with an increase	*Countries or areas with percentage total decline*			
	Less than 10	*10-29*	*30-49*	*50 or over*
Cuba[i]	Canada[e]	Australia[f]	Armenia[g]	Czech Republic
Cyprus	Denmark[g]	Austria	Belarus[g]	Hong Kong[f]
Finland	Germany, Fed. Rep. of	Bahamas[d]	Bulgaria	Romania
Luxembourg	Malta	Barbados[h]	China[f]	Spain
United States of America[f]	Netherlands	Belgium[g]	Estonia	
	Norway	Bosnia and Herzegovina[c]	German Dem. Rep.	
	Sweden	Croatia[g]	Greece	
	Switzerland	France	Hungary	
	United Kingdom	Georgia[d]	Ireland	
		Iceland	Italy[f]	
		Japan[f]	Latvia	
		Macau[j]	Lithuania	
		New Zealand[g]	Martinique[a]	
		Poland	Portugal	
		Singapore[g]	Rep. of Korea[f]	
		Yugoslavia[g]	Rep. of Moldova[b]	
			Russian Federation[b]	
			Slovakia	
			Slovenia	
			Trinidad and Tobago[e]	
			Ukraine[g]	

[a]Refers to the period 1974-1992.
[b]Refers to the period 1974/75-1995.
[c]Refers to the period 1975-1990.
[d]Refers to the period 1975-1992.
[e]Refers to the period 1975-1993.
[f]Refers to the period 1975-1994.
[g]Refers to the period 1975-1995.
[h]Refers to the period 1976-1988.
[i]Refers to the period 1980-1991.
[j]Refers to the period 1981-1995.
Source: Table 3.

TABLE 5. CHANGE IN TOTAL FERTILITY RATES AND AVERAGE ANNUAL PERCENTAGE CHANGE: 1975-1980 TO 1990-1996
(*Percentage*)

Country or area	*1975-1980*	*1980-1985*	*1985-1990*	*1990-1996*	*Average annual percentage change*
Asia					
Eastern Asia					
China	-35.3	-4.8	+5.0	-19.5[a]	-2.5
Hong Kong	-25.1	-28.6	-19.0	-2.5[a]	-2.9
Japan	-9.8	0.0	-13.2	-2.6[a]	-1.3
Macau	..	-12.3[b]	..	-17.1[c]	-1.9
Rep. of Korea	-16.4	-38.1	-5.4	+8.9[a]	-2.5
South-eastern Asia					
Singapore	-17.5	-6.9	+6.2	+2.9[d]	-0.8
Western Asia					
Armenia	-16.1	+9.0	-3.1	-38.0[d]	-2.2
Cyprus	+22.4	-3.3	+1.7	-14.0	+0.2
Georgia	-12.3	+2.3	-2.7	-18.6[e]	-1.7
Europe					
Eastern Europe					
Belarus	-9.1	+3.5	-7.7	-27.2[d]	-1.8
Bulgaria	-8.5	-4.9	-7.2	-31.5	-2.1
Czech Republic	-14.8	-5.8	-3.1	-37.6	-2.4
Hungary	19.3	-4.7	+0.5	-20.7	-1.8
Poland	+0.4	+2.2	-12.4	-21.6	-1.4
Rep. of Moldova	-7.5[f]	+12.7[g]	-10.2[h]	-26.4[d]	-1.5
Romania	-6.5	-7.8	-19.0	-29.0	-2.4
Russian Federation	-5.0[f]	+9.0[g]	-8.3[h]	-29.1[d]	-1.6
Slovakia	-9.0	-3.0	-7.1	-30.6	-2.1
Ukraine	-3.5	+3.6	-6.4	-25.9[d]	-1.5
Northern Europe					
Denmark	-19.3	-6.5	+15.2	+8.4[d]	-0.3
Estonia	1.0	+5.0	-3.3	-36.6	-1.7
Finland	-3.6	+0.6	+8.5	-1.1	+0.2
Iceland	-6.4	-22.2	+19.7	-8.2	-1.0
Ireland	-5.0	-22.6	-15.2	-9.9	-2.1
Latvia	-3.1	+10.0	-3.3	-42.6	-1.9
Lithuania	-9.1	+5.0	-4.8	-28.5	-1.7
Norway	-13.1	-2.3	+14.9	-2.1	-0.2
Sweden	-5.6	+3.0	+23.7	-24.8	-0.5
United Kingdom	+4.4	-4.8	-1.7	-6.6	-0.3

Country or area	1975-1980	1980-1985	1985-1990	1990-1996	Average annual percentage change
Southern Europe					
Bosnia and Herzegovina	-20.0	+0.5	-10.0	..	-1.8
Croatia	+0.5	-5.2	-10.4	-9.2[d]	-1.1
Greece	-2.2	-24.7	-14.9	-8.4	-2.0
Italy	-24.0	-13.7	-6.2	-10.3[i]	-2.4
Malta	-8.8	+0.5	+3.0	-2.0	-0.4
Portugal	-13.1	-21.0	-9.2	-8.3	-2.0
Slovenia	-2.3	-18.5	-14.0	-13.5	-1.9
Spain	-21.1	-25.8	-17.1	-15.4	-2.8
Yugoslavia	-2.2	-2.2	-5.9	-9.6[d]	-0.9
Western Europe					
Austria	-9.8	-10.9	-1.4	-2.1	-1.1
Belgium	-2.9	-10.7	+7.3	-4.3[d]	-0.5
France	+1.0	-6.7	-2.2	-3.4	-0.5
German Dem. Rep	+26.0	-10.8	-12.1	-38.8	-1.9
Germany, Fed. Rep. of	0.0	-11.7	-13.3	-4.1	-0.2
Germany	..	..	..	0.0[j]	0.0
Luxembourg	-1.3	-8.0	+17.4	+8.6	+0.8
Netherlands	-3.6	-5.6	+7.3	-5.6	-0.4
Switzerland	-3.7	-1.9	-4.6	-5.7	-0.3
Latin America and the Caribbean					
Caribbean					
Bahamas	+13.0	-13.6	-18.1	-3.9[e]	-1.4
Barbados	-15.7[k]	-16.5[l]	..	..	-2.5
Cuba	..	+15.9	-3.7	-7.7[m]	+0.3
Martinique	-42.0[n]	..	-5.6	-4.5[e]	-2.6
Trinidad and Tobago	+2.6	+0.3	-25.0	-15.4[o]	-1.9
Northern America					
Canada	-6.0	-4.7	+4.9	-2.9[o]	-0.5
United States of America	+3.5	+0.5	+13.0	+0.5[a]	+0.9

Country or area	1975-1980	1980-1985	1985-1990	1990-1996	Average annual percentage change
Oceania					
Australia	-13.5	-1.6	+1.1	-3.1[a]	-0.9
New Zealand	-12.0	-5.9	+13.0	-6.9[d]	-0.6

NOTE: Two dots (..) indicate that data are not available.
[a]Refers to the period 1990-1994.
[b]Refers to the period 1981-1991.
[c]Refers to the period 1991-1995.
[d]Refers to the period 1990-1995.
[e]Refers to the period 1990-1992.
[f]Refers to the period 1974/75-1979/80.
[g]Refers to the period 1979/80-1984/85.
[h]Refers to the period 1984/85-1990.
[i]Refers to the period 1990-1994.
[j]Refers to the period 1992-1996.
[k]Refers to the period 1976-1980.
[l]Refers to the period 1980-1988.
[m]Refers to the period 1990-1991.
[n]Refers to the period 1974-1985.
[o]Refers to the period 1990-1993.
Source: Table 1.

The pace of decline in fertility was slowed down in China during 1980-1985 and even reversed in 1985-1990 and gained momentum of decline again during the 1990s. Hong Kong, Italy and Spain were able to sustain their fertility decline through the 1990s. Additionally, a remarkable decline in fertility was observed in a few more countries during the period 1980-1985: in the Republic of Korea the TFR dropped by 38 per cent, Greece (25 per cent), Ireland (23 per cent), Iceland (22 per cent) and Portugal (21 per cent). On the other hand, a rise in fertility of 5 per cent or more during the 1980-1985 period was observed in Cuba (16 per cent), the Republic of Moldova (13 per cent), Latvia (10 per cent), Armenia and the Russian Federation (9 per cent), Estonia and Lithuania (5 per cent).

During the period 1985-1990, the only additional country that had observed a remarkable decline in fertility was Trinidad and Tobago, with 25 per cent decline. It is also to be noted that with a slow pace of decline in fertility during the earlier period, Romania recorded a sizeable drop in fertility (19 per cent) during this period. It is interesting to note that most of the countries reporting a rise in fertility during the period 1980-1985 had in turn experienced a reversal in trend, thereby showing a decline in fertility during the period 1985-1990. Notable among these countries are Bosnia and Herzegovina, Belarus, Poland, the Republic of Moldova, the Russian Federation and Ukraine. On the other hand, a marked rise in fertility during 1985-1990 was observed in several other countries, such as Belgium, Denmark, Finland, Iceland, Luxembourg, the Netherlands, New Zealand, Norway, Singapore, Sweden and the United States of America.

TABLE 6. CLASSIFICATION OF COUNTRIES OR AREAS ACCORDING TO AVERAGE PERCENTAGE DECLINE IN TOTAL FERTILITY RATE: 1975-1996

Countries with an increase	*Average annual percentage decline*		
	Less than 1.0	*1.0-1.9*	*2.0-2.9*
Cuba[i]	Australia[f]	Austria	Armenia[g]
Cyprus	Belgium[g]	Bahamas[d]	Barbados[h]
Finland	Canada[e]	Belarus[g]	Bulgaria
Luxembourg	Denmark[g]	Bosnia and Herzegovina[c]	China[f]
United States of America[f]	France	Croatia[g]	Czech Republic
	Germany, Fed. Rep. of	Estonia	Greece
	Malta	Georgia[d]	Hong Kong[f]
	Netherlands	German Dem. Rep.	Ireland
	New Zealand[g]	Hungary	Italy[f]
	Norway	Iceland	Martinique[a]
	Singapore[g]	Japan[f]	Portugal
	Sweden	Latvia	Rep. of Korea[f]
	Switzerland	Lithuania	Romania
	United Kingdom	Macau[j]	Slovakia
		Poland	Spain
		Rep. of Moldova[b]	
		Russian Federation[b]	
		Slovenia	
		Trinidad and Tobago[e]	
		Ukraine[g]	
		Yugoslavia[g]	

[a]Refers to the period 1974-1992.
[b]Refers to the period 1974/75-1995.
[c]Refers to the period 1975-1990.
[d]Refers to the period 1975-1992.
[e]Refers to the period 1975-1993.
[f]Refers to the period 1975-1994.
[g]Refers to the period 1975-1995.
[h]Refers to the period 1976-1988.
[i]Refers to the period 1980-1991.
[j]Refers to the period 1981-1995.
Source: Table 5.

However, the period between 1990 and 1996 or the most recent year the data were available is marked by a significant decline in fertility in most of the countries. Except for Denmark and Luxembourg, all the European countries recorded a decline in fertility. It is notable that except Hungary and Poland, all the countries in Eastern Europe experienced at least 25 per cent decline in fertility. Among the Asian countries or areas, Armenia, China, Cyprus, Georgia and Macau also observed a significant decline in fertility during this period. On the other hand, the Republic of Korea and Singapore exhibited some rise in fertility during this period.

Overall, it is evident from tables 5 and 6 that during the period between 1975 and 1996 (among countries for which data were available), the average

annual percentage decline in fertility was highest in Hong Kong (2.9 per cent) followed by Spain (2.8 per cent), Martinique (2.6 per cent), China (2.5 per cent) and the Republic of Korea (2.5 per cent).

The fertility trends in low fertility countries have been examined using the indicator, the total fertility rate, that is readily available and most widely used. This indicator, however, is a period measure based on the reproductive performance of a hypothetical cohort of women who experienced over their lifetime the age-specific fertility rates observed in a particular population at a particular time. The total fertility rate is undoubtedly a very useful measure to examine recent fertility, but it does not represent the actual experience of any cohort. Since this measure is influenced by conditions, such as age at marriage and age at childbearing, that change during the period of observation, it may not represent the actual fertility experience of a given population. Hence, the total fertility rate based on a given birth cohort of women is a more practical measure of fertility. At the same time, the data required for cohort fertility are not commonly available. In the following section, the fertility trend is examined using the cohort measure for selected European countries where such data were available.

COHORT FERTILITY

Table 7 presents the completed fertility of cohorts of women in selected European countries born between 1945 and 1960. The cohort fertility is obtained by cumulating age-specific fertility rates in a given cohort from age 15 to exact age 50 years. Since these fertility data were collected as of end of June 1997, the birth cohorts of women that provide a complete fertility experience are those born in 1945. The cohort total fertility rate based on women born in 1950, 1955 and 1960 gives only truncated estimates. For example, the women of birth cohort 1950 would be about 47 years, while women in the birth cohort of 1955 and 1960 would be about 42 and 37 years respectively. In view of the fact that fertility is very low among women past 40 years of age, the TFR estimates based on birth cohorts of 1950 and 1955 can be considered more or less complete.

TABLE 7. COMPLETED FERTILITY, TOTAL AND AVERAGE ANNUAL PERCENTAGE DECLINE, SELECTED EUROPEAN COUNTRIES: 1945-1960 COHORTS

Country or area	Year of birth cohorts				Total percentage decline
	1945	1950	1955	1960	
Eastern Europe					
Bulgaria	2.11	2.10	2.05	1.99	-5.7
Czech Republic	2.00	1.84	2.06	2.00	0.0
Hungary	1.88	1.93	1.90	1.81	-3.7
Poland	2.27	2.21	2.19	2.18	-4.0
Romania	2.47	2.40	2.26	2.15	-13.0
Northern Europe					
Denmark	2.06	1.90	1.84	1.89	-8.3

Country or area	Year of birth cohorts				Total percentage decline
	1945	1950	1955	1960	
Estonia	1.85	1.93	2.03	2.00	+8.1
Finland	1.99	1.84	1.86	1.76	-11.6
Iceland	2.87	2.71	2.57	2.49	-13.2
Norway	2.21	2.09	2.05	2.08	-5.9
Sweden	1.93	1.96	1.90	1.90	-1.6
United Kingdom	2.19	2.07	2.02	1.97	-10.0
Southern Europe					
Bosnia and Herzegovina	2.39	2.15[a]	1.96	1.86	-22.2
Croatia	1.86	1.86	1.86	1.68	-9.7
Greece	1.98	1.96	1.83	1.46	-26.3
Italy	2.08	1.91	1.83	1.69	-18.7
Malta	1.95	1.87	1.86	1.84	-5.6
Slovenia	1.89	1.89	1.97	1.87	-1.1
Spain	2.35[b]	2.15	1.92	1.75	-25.5
Yugoslavia	2.47	2.29	2.27	2.26	-8.5
Western Europe					
Austria	1.94	1.86	1.77	1.67	-13.9
Belgium	1.95	1.85	1.82	1.81	-7.2
France	2.22	2.11	2.13	2.07	-6.8
German Dem. Rep.	1.86	1.79	1.82	1.77	-4.8
Germany, Fed. Rep. of	1.77	1.70	1.62	1.57	-11.3
Germany	1.78	1.70	1.62	1.57	-11.8
Luxembourg	1.79	1.69	1.69	1.73	-3.4
Netherlands	2.00	1.90	1.87	1.87	-6.5
Switzerland	1.86	1.80	1.75	1.75	-5.9

[a]Refers to 1951 cohort.
[b]Refers to 1946 cohort.
Source: Council of Europe. *Cohort Fertility in Member States of the Council of Europe.* Population Studies, No. 21. Strasbourg, 1990; Council of Europe. *Recent Demographic Developments in Europe 1997.* Council of Europe Publishing, Strasbourg, 1997.

It can be seen from table 7 that in a majority of the countries in Europe, the total fertility rate of the 1945 birth cohort was already at or below replacement level. It is particularly noteworthy that in almost all the countries of Western Europe, the TFR for the 1945 cohort was below replacement level. It was only in France that the 1945 cohort TFR was slightly above the replacement level. The highest TFR of the 1945 birth cohort was observed in Iceland, with 2.87 births per woman, and the lowest in the former Federal Republic of Germany, with 1.77 births.

Unlike the period total fertility rates shown in table 1, there is not much fluctuation in the cohort total fertility rates of women born between 1945 and 1960; rather, in general, there is a tendency towards a smooth decline in fertility from 1945 to 1960. Two countries, Greece and Spain, exhibited a relatively faster decline in fertility between the 1945 and 1960 cohorts. In both these countries, fertility experience of the 1960 cohort was over one fourth lower than that of the 1945 cohort. A sharp reduction in fertility was also observed in Bosnia and Herzegovina, with 22 per cent decline in fertility between these cohorts. Yet in several other countries, such as Bulgaria, the Czech Republic, Luxembourg, Malta, Norway, Slovenia, Sweden and Switzerland, the total fertility rate remained relatively stable between the 1945 and 1960 cohorts. Only one country, Estonia, however, experienced a rise in fertility, from 1.85 births per woman in the 1945 cohort to 2.0 births per woman in the 1960 cohort. It is also to be noted that except for Iceland, Poland, Romania and Yugoslavia, in all other countries the 1955 cohort fertility was already at or below replacement level.

AGE PATTERNS OF FERTILITY

Table 8 and figure III present age-specific fertility rates between 1975 and 1996 or the most recent year the data were available, and table 9 shows the percentage change in age-specific fertility rates during the same period. It is apparent that the age pattern of fertility is invariably distinct in all the countries of Eastern and South-eastern Asia and Cyprus in Western Asia, in that women in these countries had the highest fertility in the age group 25-29 in 1975. Although fertility has declined in all the age groups between 1975 and 1996, with few exceptions in Japan and Singapore, women aged 25-29 still have the highest fertility in most of these countries. China is the only country that experienced a shift in the age pattern of fertility, with women aged 20-24 having the highest fertility in 1994. Although Japan and Singapore, with already low fertility in 1975, experienced a decline in the total fertility rate, women in some age groups actually observed a rise in fertility. For example, fertility went up among women aged 30-44 in Japan and those aged 30-39 in Singapore during this period. On the other hand, older women (35 years and above) in these countries, except Japan and Singapore, have substantially reduced their fertility. It is also worth noting that while Japan already had a very low fertility among women aged 15-19, China, Hong Kong, the Republic of Korea and Singapore also recorded a sharp decline in fertility among women in this age group.

TABLE 8. AGE-SPECIFIC FERTILITY RATES: 1975 AND 1996 OR MOST RECENT YEAR
(Per 1,000)

Country or area	*Year*	*Age groups (years)*						
		15-19	*20-24*	*25-29*	*30-34*	*35-39*	*40-44*	*45-49*
Asia								
Eastern Asia								
China	1975	20.0	188.0	235.0	139.0	86.0	41.0	6.0
	1994	5.2	161.3	143.8	47.0	9.5	3.8	1.4
Hong Kong	1975	17.8	122.1	206.7	123.1	59.5	18.6	2.7
	1994	6.8	40.8	83.2	79.0	29.9	4.3	0.2
Japan	1975	4.1	106.3	189.0	69.3	14.9	2.1	0.1
	1994	4.0	41.9	123.0	96.6	25.6	2.6	0.1
Macau	1981	10.2	79.8	140.9	90.3	39.2	12.1	1.2
	1995	8.2	55.6	97.5	75.1	28.4	6.1	0.3
Rep. of Korea	1975	13.2	170.5	250.4	137.2	52.9	18.1	4.6
	1994	3.6	66.1	189.4	68.7	13.7	1.9	0.2
South-eastern Asia								
Singapore	1975	17.2	104.3	157.3	95.7	35.8	10.0	1.2
	1995	6.8	48.5	132.7	114.6	44.3	6.9	0.2
Western Asia								
Armenia	1975	39.6	216.6	160.2	80.6	43.8	14.9	2.1
	1995	56.2	141.7	73.6	35.2	15.4	3.3	0.3
Cyprus	1975	20.2	133.3	143.5	72.3	26.8	6.1	0.7
	1996	15.6	112.5	149.1	95.1	36.5	6.8	0.6
Georgia	1975	36.3	179.4	156.3	82.5	35.9	11.0	1.8
	1992	53.3	158.7	78.8	44.9	17.7	4.2	0.2
Europe								
Eastern Europe								
Belarus	1975	25.5	168.1	131.5	71.1	34.4	8.3	0.6
	1995	39.0	122.8	71.7	29.5	10.6	2.3	0.1
Bulgaria	1975	75.4	198.2	115.2	42.4	12.8	2.9	0.2
	1996	51.2	98.3	64.6	23.6	7.7	1.6	0.1
Czech Republic	1975	61.2	213.1	135.0	57.2	17.0	2.7	0.1
	1996	20.1	91.8	79.2	35.1	11.0	1.8	0.1
Hungary	1975	72.1	183.5	133.8	62.0	20.2	4.2	0.2
	1996	29.5	92.6	100.0	48.9	16.9	3.4	0.1
Poland	1975	31.4	170.1	136.5	71.4	33.9	10.0	0.7
	1996	21.1	107.6	103.5	54.6	23.2	5.5	0.3
Rep. of Moldova	1974/75	34.3	178.4	147.6	86.5	48.6	15.9	1.4
	1995	61.8	141.8	90.4	39.8	14.4	2.9	0.2
Romania	1975	69.2	197.8	138.5	71.4	36.7	10.0	0.7
	1996	40.0	102.2	72.4	30.1	10.9	2.9	0.2

Country or area	Year	Age groups (years) 15-19	20-24	25-29	30-34	35-39	40-44	45-49
Russian Federation	1974/75	33.9	158.8	110.5	58.6	28.9	7.3	0.6
	1995	45.6	113.5	67.2	29.7	10.7	2.2	0.1
Slovakia	1975	46.3	208.5	152.5	68.6	27.1	6.2	0.4
	1996	30.5	112.9	91.1	40.3	14.9	2.6	0.1
Ukraine	1975	40.3	162.4	111.2	58.7	25.0	6.6	0.4
	1995	54.3	116.9	65.8	27.5	9.8	2.0	0.2
Northern Europe								
Denmark	1975	26.8	136.6	137.0	61.8	18.1	3.3	0.2
	1995	8.3	61.6	139.1	108.5	38.5	5.3	0.2
Estonia	1975	36.0	163.4	116.5	59.7	25.9	6.1	0.4
	1996	33.4	95.1	76.2	37.1	15.1	3.2	0.1
Finland	1975	27.5	105.5	113.9	59.6	24.7	5.9	0.4
	1996	9.8	63.7	125.3	102.1	42.9	8.1	0.4
Iceland	1975	64.1	163.7	145.4	93.7	48.7	13.5	0.7
	1996	22.1	93.0	135.0	109.5	55.5	8.5	0.4
Ireland	1975	22.8	138.6	216.1	162.1	100.1	36.8	2.6
	1996	16.1	52.0	107.8	129.5	64.7	12.0	0.6
Latvia	1975	28.8	150.3	113.4	63.5	29.5	6.7	0.4
	1996	25.5	89.4	66.4	32.5	14.4	3.3	0.2
Lithuania	1975	22.2	155.5	133.2	76.8	39.8	11.5	0.8
	1996	36.7	107.5	82.2	39.6	15.7	3.6	0.2
Norway	1975	40.3	134.6	129.2	63.9	24.2	5.3	0.3
	1996	13.5	75.3	135.9	106.7	41.4	6.5	0.2
Sweden	1975	28.8	115.0	123.3	64.1	20.7	3.7	0.2
	1996	7.7	58.4	115.3	93.3	38.8	7.3	0.3
United Kingdom	1975	36.7	116.1	123.7	59.4	20.9	5.1	0.4
	1996	30.0	72.6	105.3	89.7	38.1	6.8	0.3
Southern Europe								
Bosnia and Herzegovina	1975	45.4	159.7	132.9	77.6	39.8	13.5	1.4
	1990	38.0	129.4	101.6	50.6	18.2	4.1	0.5
Croatia	1975	51.5	145.7	105.8	51.2	21.0	5.2	0.4
	1995	19.6	101.1	108.3	60.5	22.0	4.4	0.3
Greece	1975	39.7	135.2	155.6	79.6	36.6	8.0	0.7
	1996	13.1	62.6	96.7	61.8	23.7	4.3	0.5
Italy	1975	32.5	129.6	140.1	84.0	40.7	12.6	0.9
	1994	7.3	40.5	84.7	74.7	31.2	5.8	0.3
Malta	1975	16.9	118.8	150.1	91.3	41.9	13.9	0.8
	1996	14.2	73.9	152.8	112.0	40.5	8.5	0.5
Portugal	1975	37.0	141.7	144.1	94.5	58.9	24.8	2.4
	1996	20.9	61.9	97.7	74.3	27.1	5.3	0.3

Country or area	Year	Age groups (years) 15-19	20-24	25-29	30-34	35-39	40-44	45-49
Slovenia	1975	59.6	165.9	115.2	58.3	28.1	7.9	0.5
	1996	9.3	77.7	98.6	50.9	15.0	2.7	0.1
Spain	1975	21.9	135.7	189.2	123.3	64.2	23.0	2.2
	1995	8.2	31.0	82.7	78.8	29.0	5.0	0.3
Yugoslavia	1975	60.6	166.5	127.1	69.2	30.3	9.5	1.3
	1995	32.1	125.2	120.2	68.4	23.8	4.7	0.4
Western Europe								
Austria	1975	47.1	129.3	99.3	51.7	28.5	8.3	0.5
	1996	15.6	75.9	100.6	65.1	23.7	4.3	0.2
Belgium	1975	21.2	112.9	124.3	59.1	22.9	6.4	0.6
	1995	9.1	62.0	131.4	81.0	23.7	3.7	0.2
France	1975	25.3	128.0	127.0	68.0	29.1	8.2	0.7
	1994	7.2	58.0	128.0	93.0	37.4	7.8	0.4
German Dem. Rep.	1975	33.2	144.2	88.4	30.4	30.4	3.1	0.2
	1995	7.5	54.6	66.3	28.2	9.0	1.7	0.1
Germany, Fed. Rep. of	1975	21.1	87.8	99.2	52.2	21.9	6.6	0.5
	1995	10.0	53.5	90.4	80.6	30.6	5.2	0.3
Germany	1992	12.6	59.1	91.3	68.5	24.6	1.2	0.2
	1995	9.4	53.7	86.5	71.1	26.5	4.4	0.2
Luxembourg	1975	21.6	94.3	107.0	54.7	22.2	3.8	0.2
	1996	9.9	65.4	128.7	103.2	40.3	6.9	0.0
Netherlands	1975	9.4	86.3	141.6	67.0	22.4	5.7	0.5
	1996	4.1	33.1	97.0	119.8	46.4	6.5	0.2
Switzerland	1975	10.9	85.7	123.9	69.5	25.6	6.7	0.5
	1996	4.0	42.4	105.4	102.8	39.2	6.4	0.3
Latin America and the Caribbean								
Caribbean								
Bahamas	1975	63.5	152.2	133.4	79.7	54.4	21.3	2.7
	1992	51.8	101.8	100.5	81.2	43.2	10.5	1.8
Barbados	1976	73.4	132.2	116.0	66.1	44.3	12.0	1.6
	1988	43.8	86.5	88.5	64.7	28.3	2.6	0.0
Cuba	1980	84.0	114.5	70.9	36.9	16.2	4.4	1.8
	1991	70.9	105.7	89.8	50.4	17.6	2.9	0.4
Martinique	1974	56.8	198.4	207.6	146.5	87.8	36.3	5.4
	1992	28.0	88.5	113.9	93.0	49.5	12.3	0.8
Trinidad and Tobago	1975	77.2	181.1	163.6	113.3	63.2	21.6	4.0
	1993	51.6	117.6	103.2	80.9	40.3	10.8	1.4

Country or area	Year	Age groups (years) 15-19	20-24	25-29	30-34	35-39	40-44	45-49
Northern America								
Canada	1975	33.8	109.7	130.5	65.0	20.9	4.6	0.3
	1993	24.7	73.0	114.7	84.9	29.5	4.4	0.1
United States of America	1975	55.6	113.0	108.2	52.3	19.5	4.6	0.3
	1994	60.0	118.0	118.8	80.1	31.6	5.4	0.3
Oceania								
Australia	1975	40.9	138.2	155.7	76.3	27.1	6.2	0.4
	1994	20.7	69.2	126.0	105.1	41.2	6.7	0.3
New Zealand	1975	53.7	157.0	154.9	68.3	24.6	6.9	0.6
	1995	34.0	83.6	126.9	111.3	43.0	7.5	0.4

Sources: Australian Bureau of Statistics. *Yearbook of Australia 1996.* Canberra, 1996; China Population Information and Research Centre. *China Population Today: Special Issue for the World Summit for Social Development*, vol. 12, No. 1, 1995; Coale, Ansley J., and Chen Sheng Li. Basic data on fertility in the provinces of China, 1940-82. *Papers of the East-West Population Institute*, No. 104, 1987; Council of Europe. *Recent Demographic Developments in Europe 1997.* Council of Europe Publishing, Strasbourg, 1997; Statistics Canada. *Report on the Demographic Situation in Canada 1995.* Ottawa, 1995; Statistics New Zealand. *Demographic Trends 1995*, Wellington, 1995; United States Bureau of the Census. *Statistical Abstract of the United States 1995.* Washington, D. C., 1995; United Nations. *Demographic Yearbook 1981.* New York, 1983; United Nations. *Demographic Yearbook 1986.* New York 1988; United Nations. *Demographic Yearbook 1995.* New York, 1997.

TABLE 9. CHANGE IN AGE-SPECIFIC FERTILITY RATES: 1975-1996 OR MOST RECENT YEAR
(*Percentage*)

Country or area	Period	Age groups (years) 15-19	20-24	25-29	30-34	35-39	40-44	45-49
Asia								
Eastern Asia								
China	1975-1994	-74.0	-14.2	-38.8	-66.2	-89.0	-90.7	-76.7
Hong Kong	1975-1994	-61.8	-66.6	-59.7	-35.8	-49.7	-76.9	-92.6
Japan	1975-1994	-2.4	-60.6	-34.9	+39.6	+71.8	+23.8	0.0
Macau	1981-1995	-19.6	-30.3	-30.8	-16.8	-27.6	-49.6	-75.0
Rep. of Korea	1975-1994	-72.7	-61.2	-24.4	-49.9	-74.1	-89.5	-95.7
South-eastern Asia								
Singapore	1975-1995	-60.5	-53.5	-15.6	+19.7	+23.7	-31.0	-83.3
Western Asia								
Armenia	1975-1995	+41.9	-34.6	-54.1	-56.3	-64.8	-77.9	-85.7
Cyprus	1975-1996	-22.8	-15.6	+3.9	+31.5	+36.2	+11.5	-14.3
Georgia	1975-1992	+46.8	-11.5	-49.6	-46.5	-50.7	-61.8	-88.9

Country or area	Period	Age groups (years) 15-19	20-24	25-29	30-34	35-39	40-44	45-49
Europe								
Eastern Europe								
Belarus	1975-1995	+52.9	-26.9	-45.5	-58.5	-69.2	-72.3	-83.3
Bulgaria	1975-1996	-32.1	-50.4	-43.9	-44.3	-39.8	-44.8	-50.0
Czech Republic	1975-1996	-67.2	-57.3	-41.3	-38.6	-35.3	-37.0	0.0
Hungary	1975-1996	-59.1	-49.5	-25.3	-21.1	-16.3	-19.0	-50.0
Poland	1975-1996	-32.8	-36.7	-23.9	-23.5	-31.6	-45.0	-57.1
Rep. of Moldova	1974/75-1995	+80.2	-20.5	-38.8	-54.0	-70.4	-81.8	-85.7
Romania	1975-1996	-42.2	-48.3	-47.7	-57.8	-70.3	-71.0	-71.4
Russian Federation	1974/75-1995	+34.5	-28.5	-39.2	-49.3	-63.3	-69.9	-83.3
Slovakia	1975-1996	-34.1	-45.9	-40.3	-41.3	-45.0	-58.1	-75.0
Ukraine	1975-1995	+34.7	-28.0	-40.8	-53.2	-60.8	-69.7	-50.0
Northern Europe								
Denmark	1975-1995	-69.0	-54.9	+1.5	+75.6	+112.7	+60.6	0.0
Estonia	1975-1996	-7.2	-41.8	-34.6	-37.9	-41.7	-47.5	-75.0
Finland	1975-1996	-64.4	-39.6	+10.0	+71.3	+73.7	+37.3	0.0
Iceland	1975-1996	-65.5	-43.2	-7.2	+16.9	+14.0	-37.0	-42.9
Ireland	1975-1996	-29.4	-62.5	-50.1	-20.1	-35.4	-67.4	-76.9
Latvia	1975-1996	-11.5	-40.5	-41.4	-48.8	-51.2	-50.7	-50.0
Lithuania	1975-1996	+65.3	-30.7	-38.3	-48.4	-60.6	-68.7	-75.0
Norway	1975-1996	-66.5	-44.1	+5.2	+67.0	+71.1	+22.6	-33.3
Sweden	1975-1996	-73.3	-49.2	-6.5	+45.6	+87.4	+97.3	+50.0
United Kingdom	1975-1996	-18.3	-37.5	-14.9	+51.0	+82.3	+33.3	-25.0
Southern Europe								
Bosnia and Herzegovina	1975-1990	-16.3	-19.0	-23.6	-34.8	-54.3	-69.6	-64.3
Croatia	1975-1995	-61.9	-30.6	+2.4	+18.2	+4.8	-15.4	-25.0
Greece	1975-1996	-67.0	-53.7	-37.9	-22.4	-35.2	-46.3	-28.6
Italy	1975-1994	-77.5	-68.8	-39.5	-11.1	-23.3	-54.0	-66.7
Malta	1975-1996	-16.0	-37.8	+1.8	+22.7	-3.3	-38.8	-37.5
Portugal	1975-1996	-43.5	-56.3	-32.2	-21.4	-54.0	-78.6	-87.5
Slovenia	1975-1996	-84.4	-53.2	-14.4	-12.7	-46.6	-65.8	-80.0
Spain	1975-1995	-62.6	-77.2	-56.3	-36.1	-54.8	-78.3	-86.4
Yugoslavia	1975-1995	-47.0	-24.8	-5.4	-1.2	-21.5	-50.5	-69.2
Western Europe								
Austria	1975-1996	-66.9	-41.3	+1.3	+25.9	-16.8	-48.2	-60.0
Belgium	1975-1995	-57.1	-45.1	+5.7	+37.1	+3.5	-42.2	-66.7

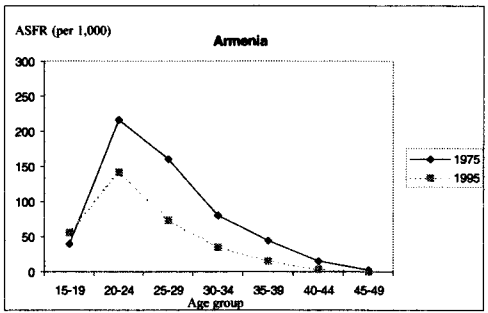
Country or area	Period	Age groups (years) 15-19	20-24	25-29	30-34	35-39	40-44	45-49
France.	1975-1994	-71.5	-54.7	+0.8	+36.8	+28.5	-4.9	-42.9
German Dem. Rep.	1975-1995	-77.4	-62.1	-25.0	-7.2	-70.4	-45.2	-50.0
Germany, Fed. Rep. of. . .	1975-1995	-52.6	-39.1	-8.9	+54.4	+39.7	-21.1	-40.0
Germany . . .	1992-1995	-25.4	-9.1	-5.3	+3.8	+7.7	+266.7	0.0
Luxembourg .	1975-1996	-54.2	-30.6	+20.3	+88.7	+81.5	+81.6	-100.0
Netherlands. .	1975-1996	-56.4	-61.6	-31.5	+78.8	+107.1	+14.0	-60.0
Switzerland. .	1975-1996	-63.3	-50.5	-14.9	+47.9	+53.1	-4.5	-40.0
Latin America and the Caribbean								
Caribbean								
Bahamas . . .	1975-1992	-18.4	-33.1	-24.7	+1.9	-20.6	-50.7	-33.3
Barbados . . .	1976-1988	-40.3	-34.6	-23.7	-2.1	-36.1	-78.3	-100.0
Cuba	1980-1991	-15.6	-7.7	+26.7	+36.6	+8.6	-34.1	-77.8
Martinique . .	1974-1992	-50.7	-55.4	-45.1	-36.5	-43.6	-66.1	-85.2
Trinidad and Tobago . .	1975-1993	-33.2	-35.1	-36.9	-28.6	-36.2	-50.0	-65.0
Northern America								
Canada	1975-1993	-26.9	-33.5	-12.1	+30.6	+41.1	-4.3	-66.7
United States of America.	1975-1994	+7.9	+4.4	+9.8	+53.2	+62.1	+17.4	0.0
Oceania								
Australia . . .	1975-1994	-49.4	-49.9	-19.1	+37.7	+52.0	+8.1	-25.0
New Zealand .	1975-1995	-36.7	-46.8	-18.1	+63.0	+74.8	+8.7	-33.3

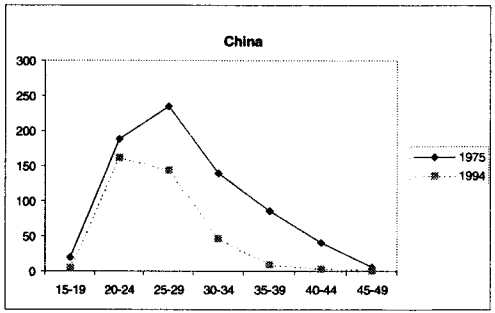
Source: Table 8.

It can be seen from table 10 and figure IV, which present the percentage contribution of different age groups to the total fertility rate, that the women in the age group 25-29 contributed the most (at least one third) to the total fertility rate in both the periods. It is only in China that the largest contributor to the total fertility rate shifted from women aged 25-29 to women aged 20-24, contributing over two fifths births to the total fertility rate. However, women aged 25-29 still contribute close to two fifths births to the total fertility rate of China in 1994. It is also to be noted that in these Asian countries, in general, there has been a decline in the contribution to the total fertility by women in the younger and older age groups, reaching almost to a negligible level.

Figure III. Trends in age-specific fertility rates: 1975 and 1996

Asia





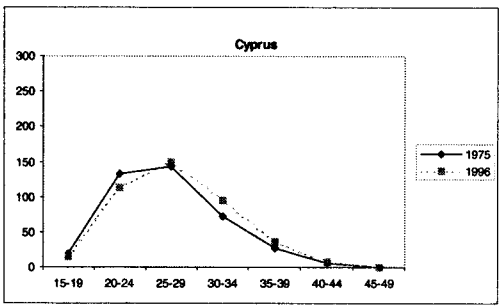
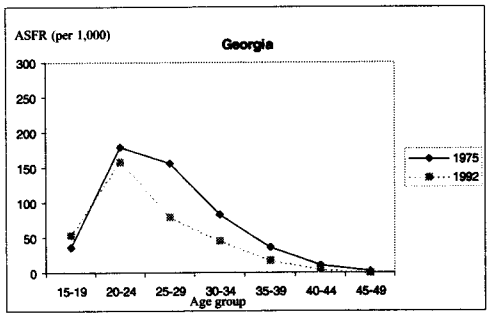
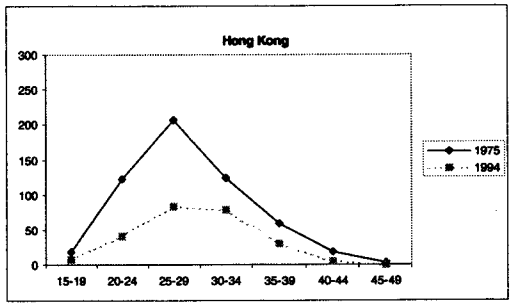


Figure III *(continued)*

Asia





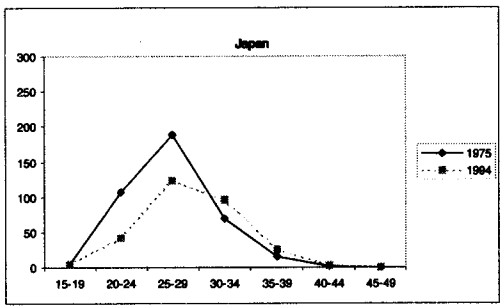
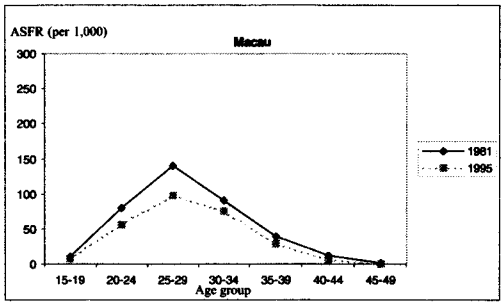
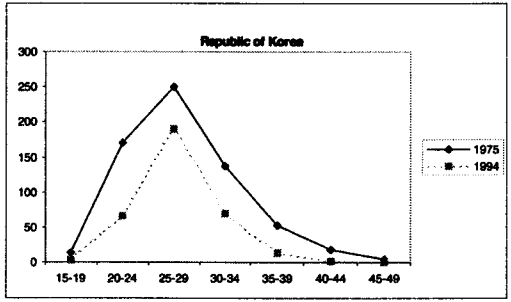


Figure III *(continued)*

Asia





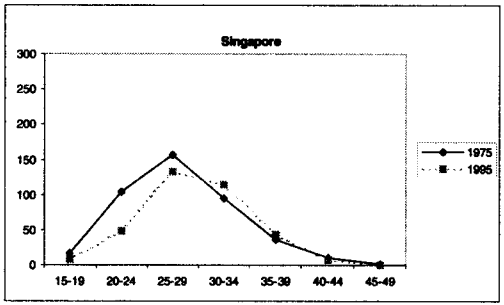
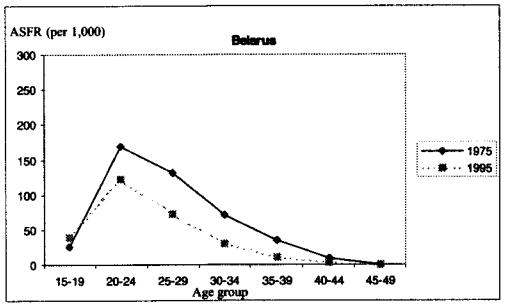
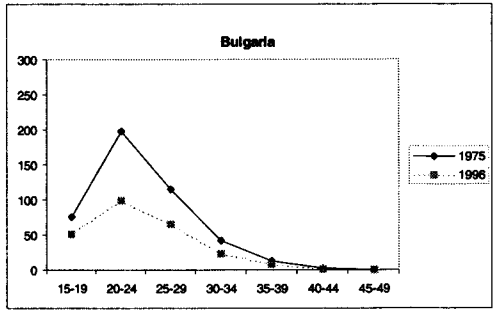


Figure III *(continued)*

Eastern Europe





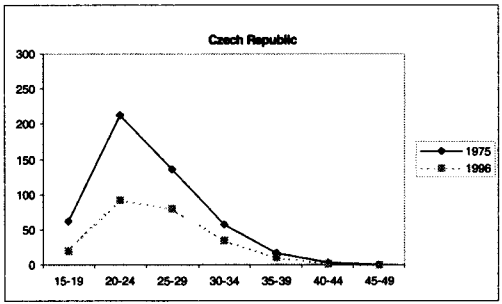
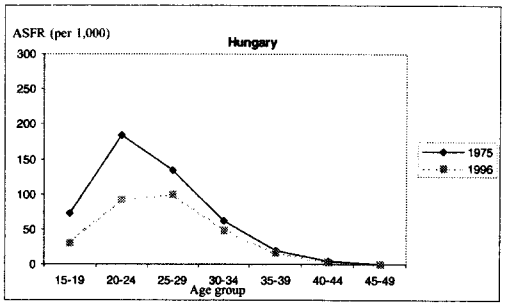
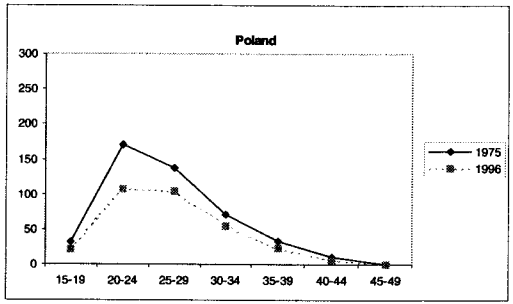


Figure III *(continued)*

Eastern Europe





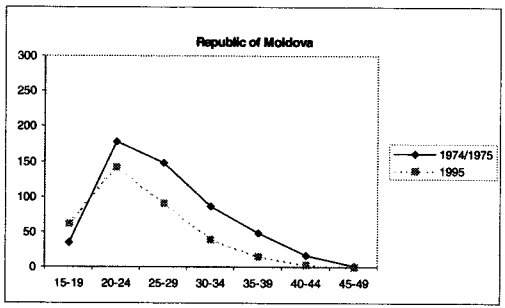
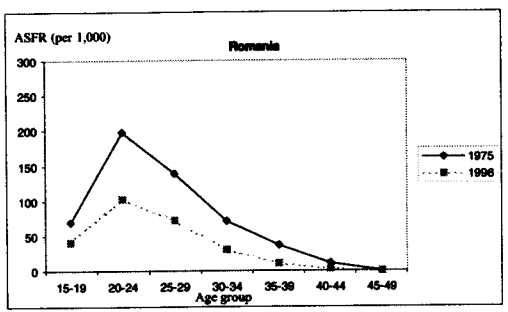
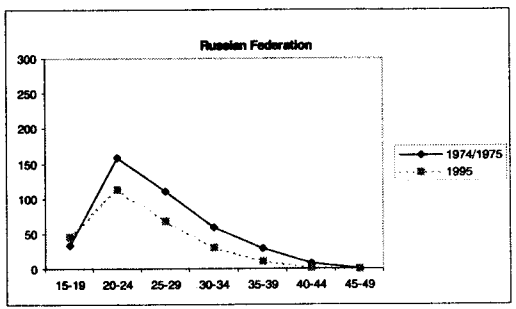
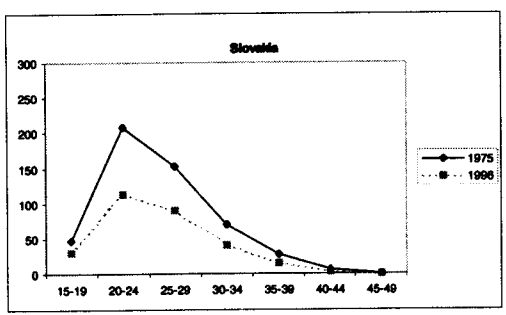


Figure III *(continued)*

Eastern Europe







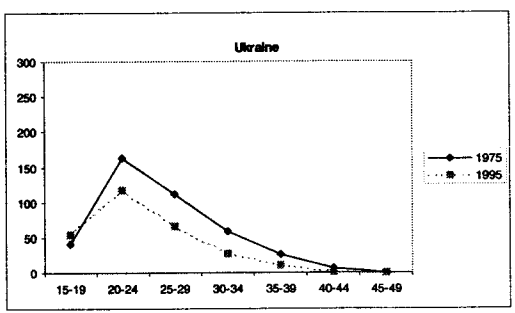
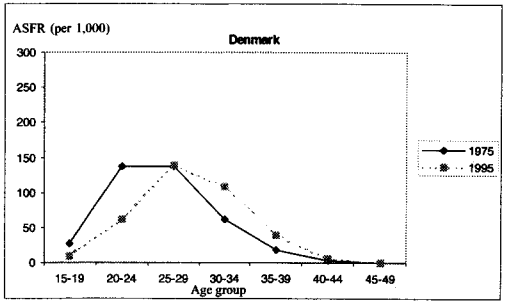
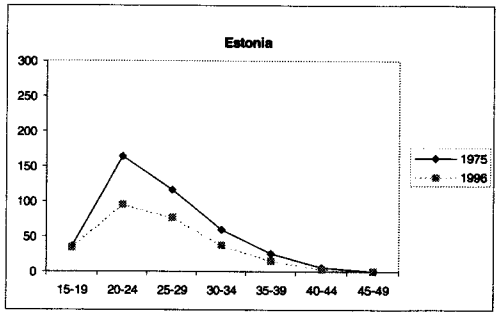


Figure III *(continued)*

Northern Europe





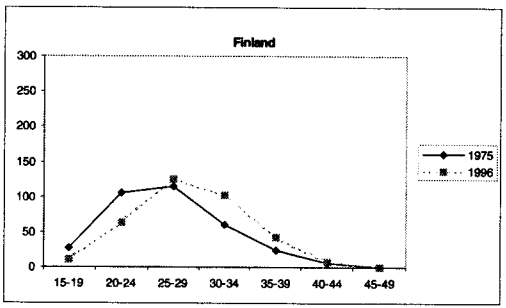
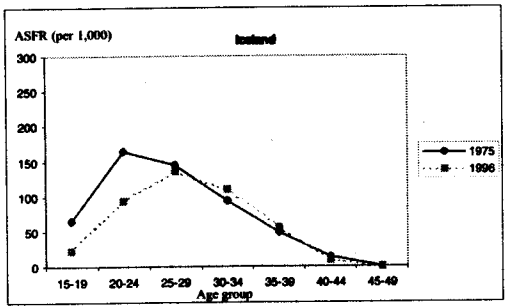
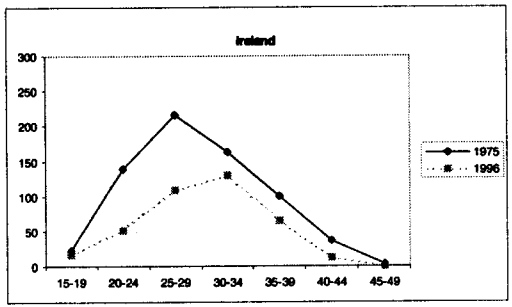


Figure III *(continued)*

Northern Europe





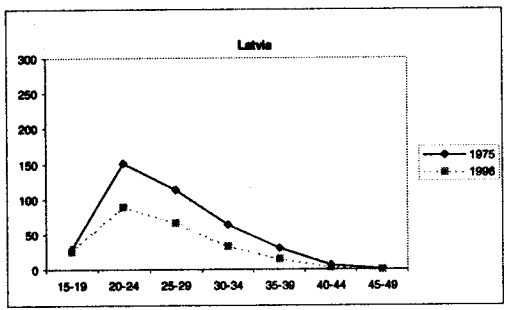
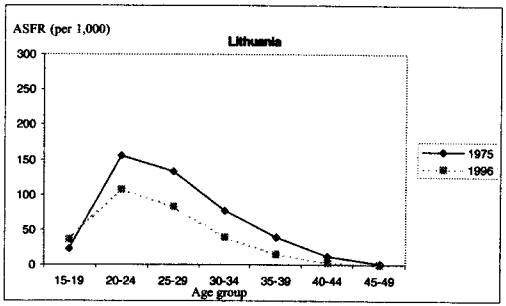


Figure III *(continued)*

Northern Europe



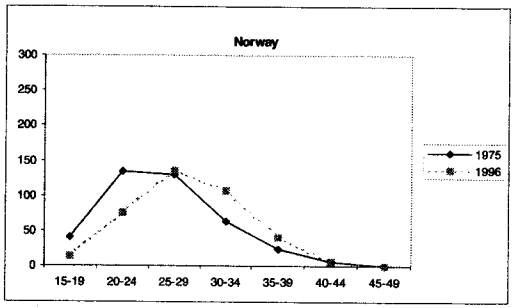
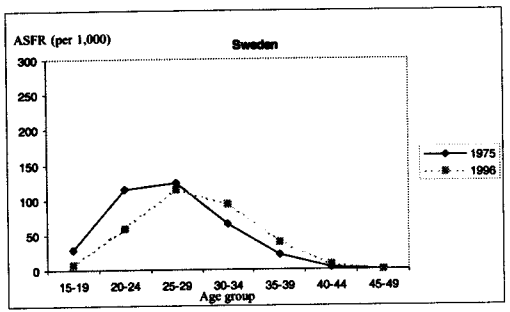


Figure III *(continued)*

Northern Europe



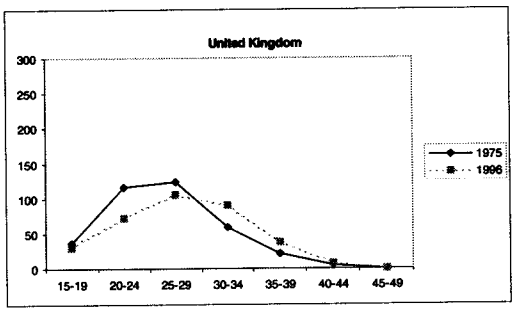
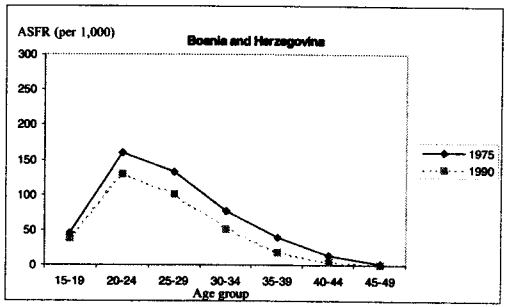
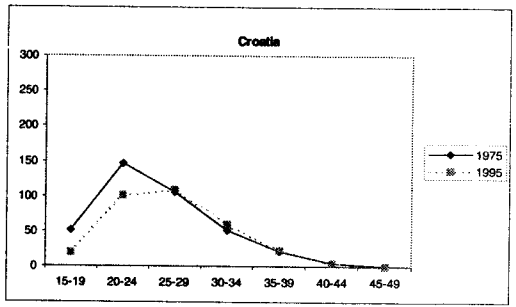


Figure III *(continued)*

Southern Europe





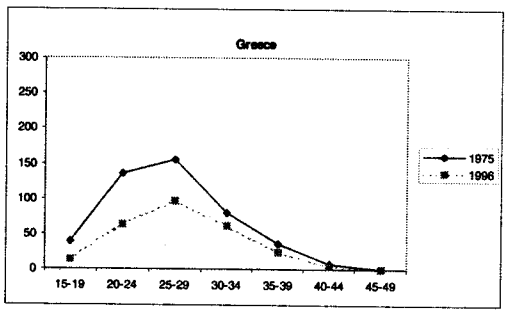
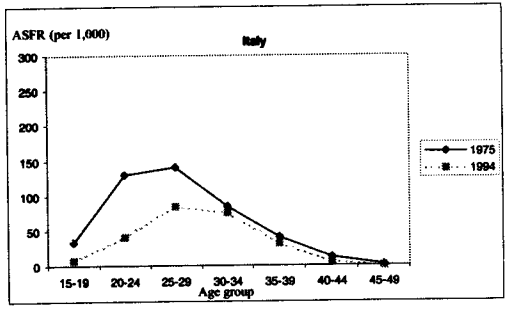
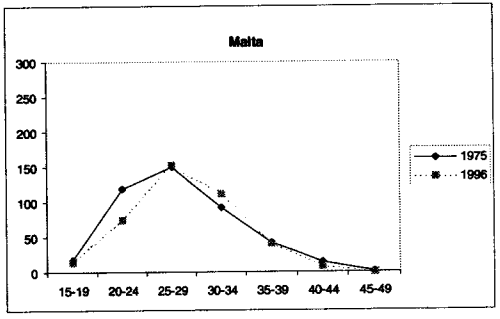


Figure III *(continued)*

Southern Europe





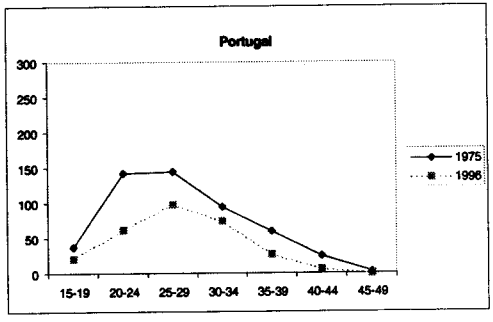
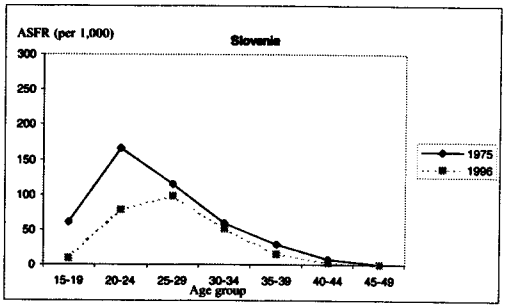
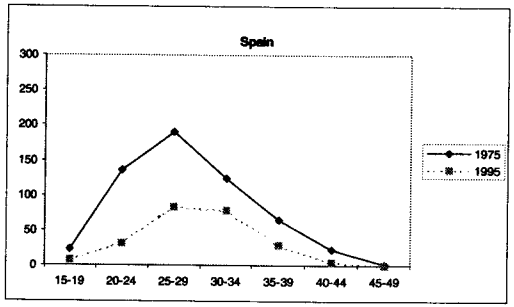


Figure III *(continued)*

Southern Europe





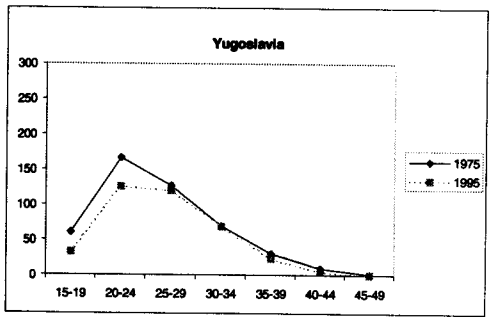
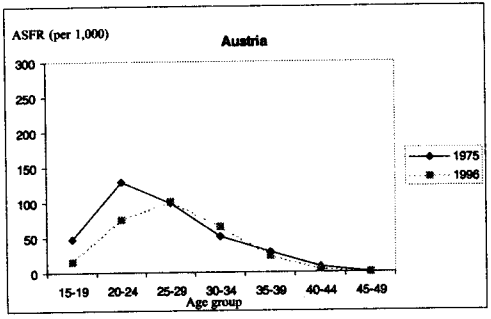
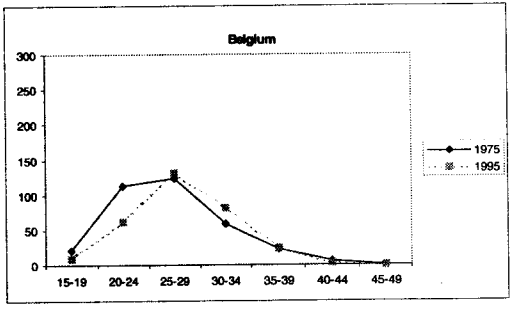


Figure III *(continued)*

Western Europe





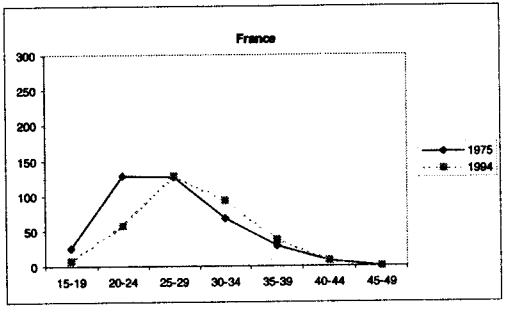
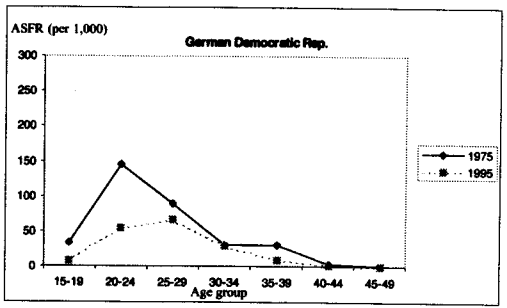
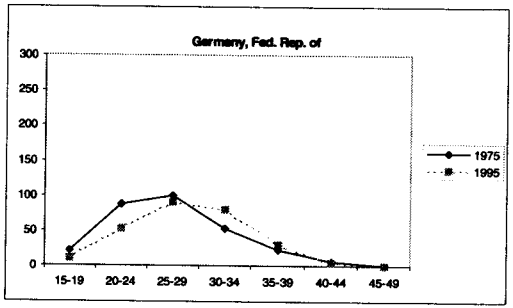


Figure III *(continued)*

Western Europe





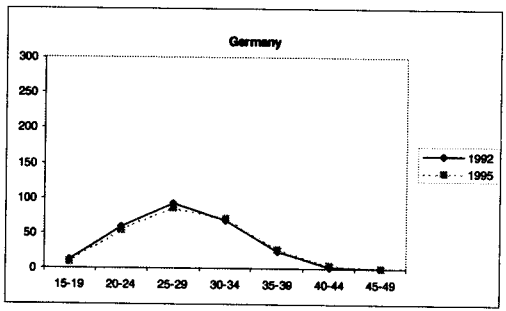
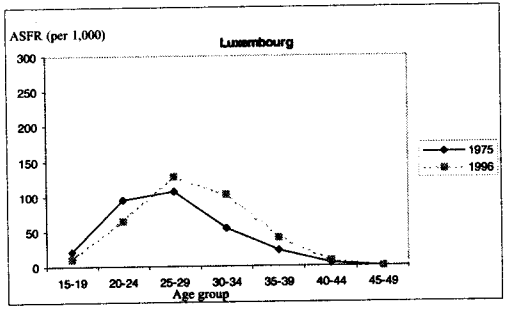
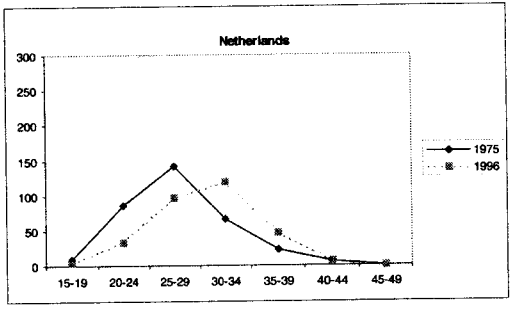


Figure III *(continued)*

Western Europe





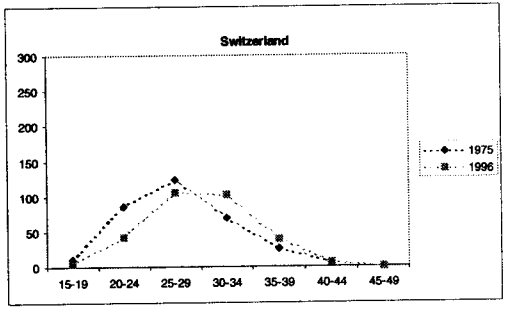
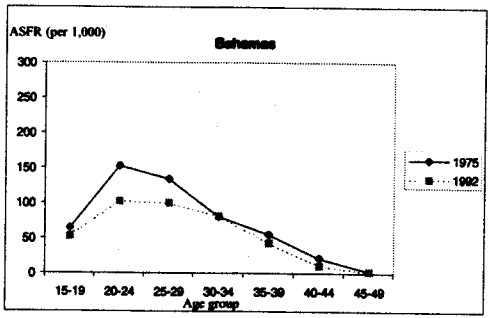
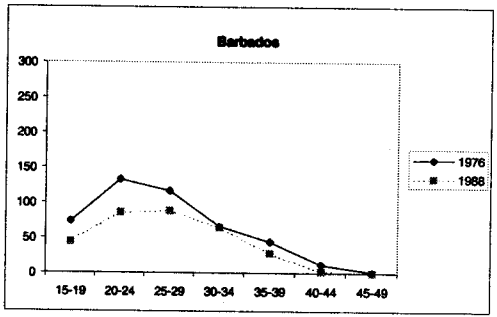


Figure III *(continued)*

Latin America and the Caribbean





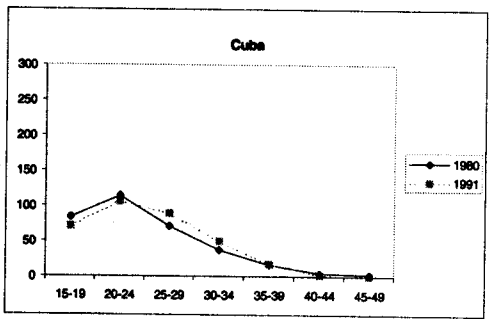
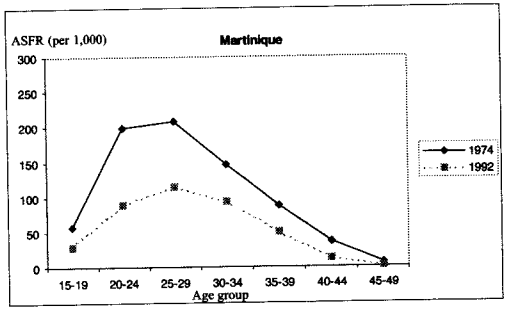


Figure III *(continued)*

Latin America and the Caribbean



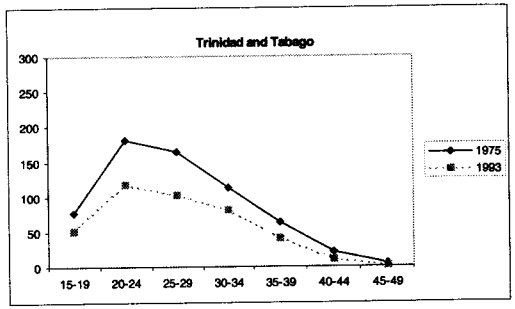
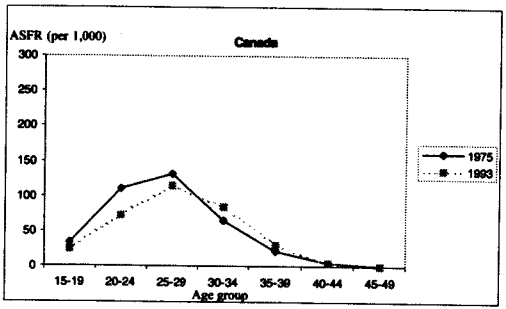
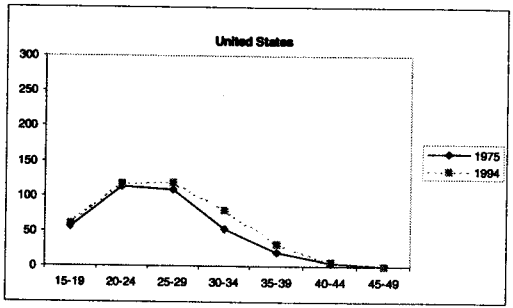
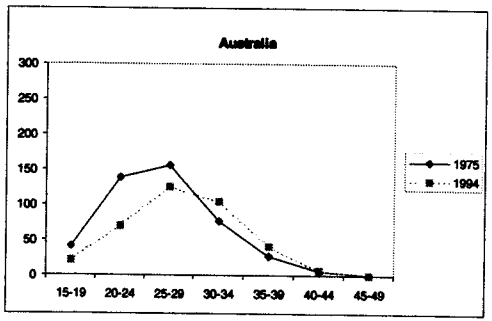


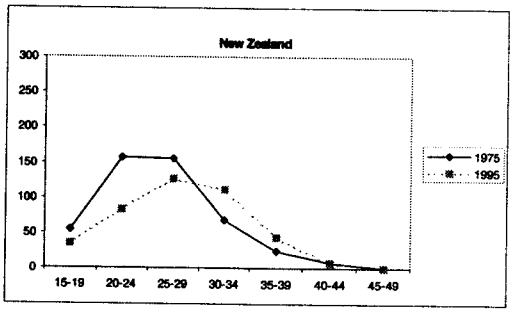
Figure III *(continued)*

North America and Oceania









Armenia and Georgia in Western Asia and Eastern European countries have maintained highly consistent age patterns of fertility between 1975 and 1996. In both the periods, women in these countries have the highest fertility occurring in the age group 20-24, followed consistently by the age group 25-29. In these countries, women in all the age groups, except women aged 15-19 in some countries, experienced declines in fertility. Particularly noteworthy are the declines that occurred among women aged 35 and over. A substantial decline in fertility was observed among women aged 15-19 in the Czech Republic and Hungary. However, in some countries, such as Armenia and Georgia in Western Asia and Belarus, the Republic of Moldova, the Russian Federation and Ukraine in Eastern Europe there has been a marked rise in fertility among women aged 15-19.

It is apparent from table 10 that women aged 20-24 contributed at least one third to the total fertility rate in Armenia and Georgia in Western Asia and in Eastern European countries. The contribution to fertility by younger women in these countries increased between 1975 and 1996, while contribution by women aged 35 and above declined sharply, reaching to a negligible proportion among women aged 40 and above.

The age pattern of fertility in Northern and Southern Europe is not consistent, with fertility peaking at the age group 25-29 in some countries and the age group 20-24 in others, while in Western Europe the peak fertility occurs invariably at the age group 25-29 both in 1975 and 1996. It is also important to note that there has been a precipitous decline in fertility among women in the younger age groups, 15-19 and 20-24 years of age, in most of the European countries. Only in Lithuania has there been a marked rise in fertility among women in the age group 15-19. Other countries, such as Austria, Belgium, Denmark, Finland, France, the former Federal Republic of Germany, Iceland, Luxembourg, Norway, the Netherlands and Switzerland, in general, experienced a rise in fertility among women in the middle age groups, 25-39.

It can also be observed from table 10 and figure IV that women aged 20-24 and those aged 25-29 contributed the most to the total fertility rate in Northern and Southern Europe, while in Western Europe, women aged 25-29 consistently contributed the most to the total fertility rate. Women in the age groups 40 and over have contributed the least, almost negligibly, to the total fertility rate in all the European countries.

It is evident from tables 8 and 9 that in the Caribbean, excepting Cuba, fertility has declined in all the age groups, with the largest decline occurring among women aged 40-44. The peak fertility is seen among women aged 20-24 in the Bahamas, Cuba, and Trinidad and Tobago, while in Martinique the peak fertility occurred among women aged 25-29. However, in Barbados the peak fertility is observed among women aged 20-24 in 1976, while in 1988 the peak fertility is about the same among women aged 20-24 and 25-29. It should also be noted that the Caribbean region, in general, is marked by a relatively high teenage fertility. Table 10 indicates that contributions to the total fertility rate are fairly spread out among women aged 20-24, 25-29 and 30-34, with, however, a larger share being accounted for among women aged 20-24 in most of the Caribbean countries. There is also a sizeable contribution to total fertility by

women aged 15-19, while the contribution by women aged 40 years and above has been reduced to a negligible proportion.

TABLE 10. CONTRIBUTION OF EACH AGE GROUP TO TOTAL FERTILITY RATE: 1975 AND 1996 OR MOST RECENT YEAR
(*Percentage*)

Country or area	*Year*	*Total*	*Age groups (years)*						
			15-19	*20-24*	*25-29*	*30-34*	*35-39*	*40-44*	*45-49*
Asia									
Eastern Asia									
China	1975	100	2.8	26.3	32.9	19.4	12.0	5.7	0.8
	1994	100	1.4	43.4	38.7	12.6	2.6	1.0	0.4
Hong Kong	1975	100	3.2	22.2	37.5	22.4	10.8	3.4	0.5
	1994	100	2.8	16.7	34.1	32.4	12.2	1.8	0.1
Japan	1975	100	1.1	27.6	49.0	18.0	3.9	0.5	0.0
	1994	100	1.4	14.3	41.9	32.9	8.7	0.9	0.0
Macau	1981	100	2.7	21.4	37.7	24.2	10.5	3.2	0.3
	1995	100	3.0	20.5	36.0	27.7	10.5	2.2	0.1
Rep. of Korea	1975	100	2.0	26.4	38.7	21.2	8.2	2.8	0.7
	1994	100	1.0	19.2	55.1	20.0	4.0	0.6	0.1
South-eastern Asia									
Singapore	1975	100	4.1	24.7	37.3	22.7	8.5	2.4	0.3
	1995	100	1.9	13.7	37.5	32.4	12.5	1.9	0.1
Western Asia									
Armenia	1975	100	7.1	38.8	28.7	14.4	7.9	2.7	0.4
	1975	100	17.3	43.5	22.6	10.8	4.7	1.0	0.1
Cyprus	1975	100	5.0	33.1	35.6	17.9	6.7	1.5	0.2
	1996	100	3.7	27.0	35.8	22.8	8.8	1.6	0.1
Georgia	1975	100	7.2	35.7	31.1	16.4	7.1	2.2	0.4
	1992	100	14.9	44.4	22.0	12.5	4.9	1.2	0.1
Europe									
Eastern Europe									
Belarus	1975	100	5.8	38.2	29.9	16.2	7.8	1.9	0.1
	1995	100	14.1	44.5	26.0	10.7	3.8	0.8	0.0
Bulgaria	1975	100	16.9	44.3	25.8	9.5	2.9	0.6	0.0
	1996	100	20.7	39.8	26.1	9.6	3.1	0.6	0.0
Czech Republic	1975	100	12.6	43.8	27.8	11.8	3.5	0.6	0.0
	1996	100	8.4	38.2	33.2	14.7	4.6	0.7	0.0
Hungary	1975	100	15.1	38.6	28.1	13.0	4.2	0.9	0.0
	1996	100	10.1	31.8	34.3	16.8	5.8	1.2	0.0
Poland	1975	100	6.9	37.5	30.1	15.7	7.5	2.2	0.2
	1996	100	6.7	34.0	32.9	17.3	7.3	1.7	0.1
Rep. of Moldova	1974/75	100	6.7	34.8	28.8	16.9	9.5	3.1	0.3
	1995	100	17.6	40.4	25.7	11.3	4.1	0.8	0.1

Country or area	Year	Total	Age groups (years) 15-19	20-24	25-29	30-34	35-39	40-44	45-49
Romania	1975	100	13.2	37.7	26.4	13.6	7.0	1.9	0.1
	1996	100	15.5	39.5	28.0	11.6	4.2	1.1	0.1
Russian Federation	1974/75	100	8.5	39.8	27.7	14.7	7.3	1.8	0.2
	1995	100	17.0	42.2	25.0	11.0	4.0	0.8	0.0
Slovakia	1975	100	9.1	40.9	29.9	13.5	5.3	1.2	0.1
	1996	100	10.4	38.6	31.2	13.8	4.1	0.9	0.0
Ukraine	1975	100	10.0	40.1	27.5	14.5	6.2	1.6	0.1
	1995	100	19.6	42.3	23.8	9.9	3.5	0.7	0.1
Northern Europe									
Denmark	1975	100	7.0	35.6	35.7	16.1	4.7	0.9	0.1
	1995	100	2.3	17.0	38.5	30.0	10.7	1.5	0.1
Estonia	1975	100	8.8	40.0	28.6	14.6	6.3	1.5	0.1
	1996	100	12.8	36.5	29.3	14.3	5.8	1.2	0.0
Finland	1975	100	8.1	31.3	33.7	17.7	7.3	1.7	0.1
	1996	100	2.8	18.1	35.6	29.0	12.2	2.3	0.1
Iceland	1975	100	12.1	30.9	27.4	17.7	9.2	2.5	0.1
	1996	100	5.2	21.9	31.8	25.8	13.1	2.0	0.1
Ireland	1975	100	3.4	20.4	31.8	23.9	14.7	5.4	0.4
	1996	100	4.2	13.6	28.2	33.8	16.9	3.1	0.2
Latvia	1975	100	7.3	38.3	28.9	16.2	7.5	1.7	0.1
	1996	100	11.0	38.6	28.7	14.0	6.2	1.4	0.1
Lithuania	1975	100	5.1	35.3	30.3	17.5	9.1	2.6	0.2
	1996	100	12.9	37.7	28.8	13.9	5.5	1.3	0.1
Norway	1975	100	10.1	33.8	32.5	16.1	6.1	1.3	0.1
	1996	100	3.6	19.8	35.8	28.1	10.9	1.7	0.1
Sweden	1975	100	8.1	32.3	34.7	18.0	5.8	1.0	0.1
	1996	100	2.4	18.2	35.9	29.1	12.1	2.3	0.1
United Kingdom	1975	100	10.1	32.0	34.1	16.4	5.8	1.4	0.1
	1996	100	8.8	21.2	30.7	26.2	11.1	2.0	0.1
Southern Europe									
Bosnia and Herzegovina	1975	100	9.7	34.0	28.3	16.5	8.5	2.9	0.3
	1990	100	11.1	37.8	29.7	14.8	5.3	1.2	0.1
Croatia	1975	100	13.5	38.3	27.8	13.4	5.5	1.4	0.1
	1995	100	6.2	32.0	34.3	19.1	7.0	1.4	0.1
Greece	1975	100	8.7	29.7	34.2	17.5	8.0	1.8	0.2
	1996	100	5.0	23.8	36.8	23.5	9.0	1.6	0.2
Italy	1975	100	7.4	29.4	31.8	19.1	9.2	2.9	0.2
	1994	100	3.0	16.6	34.6	30.6	12.8	2.4	0.1
Malta	1975	100	3.9	27.4	34.6	21.1	9.7	3.2	0.2
	1996	100	3.5	18.4	38.0	27.8	10.1	2.1	0.1
Portugal	1975	100	7.4	28.1	28.6	18.8	11.7	4.9	0.5
	1996	100	7.3	21.5	34.0	25.8	9.4	1.8	0.1
Slovenia	1975	100	13.7	38.1	26.5	13.4	6.5	1.8	0.1
	1996	100	3.7	30.6	38.8	20.0	5.9	1.1	0.0

Country or area	Year	Total	Age groups (years)						
			15-19	20-24	25-29	30-34	35-39	40-44	45-49
Spain	1975	100	3.9	24.3	33.8	22.0	11.5	4.1	0.4
	1995	100	3.5	13.2	35.2	33.5	12.3	2.1	0.1
Yugoslavia	1975	100	13.0	35.8	27.4	14.9	6.5	2.0	0.3
	1995	100	8.6	33.4	32.1	18.2	6.4	1.3	0.1
Western Europe									
Austria	1975	100	12.9	35.5	27.2	14.2	7.8	2.3	0.1
	1996	100	5.5	26.6	35.2	22.8	8.3	1.5	0.1
Belgium	1975	100	6.1	32.5	35.8	17.0	6.6	1.8	0.2
	1995	100	2.9	19.9	42.2	26.0	7.6	1.2	0.1
France	1975	100	6.5	33.1	32.9	17.6	7.5	2.1	0.2
	1994	100	2.2	17.5	38.6	28.0	11.3	2.4	0.1
German Dem. Rep.	1975	100	10.1	43.7	26.8	9.2	9.2	0.9	0.1
	1995	100	4.5	32.6	39.6	16.8	5.4	1.0	0.1
Germany, Fed. Rep. of	1975	100	7.3	30.3	34.3	18.0	7.6	2.3	0.2
	1995	100	3.7	19.8	33.4	29.8	11.3	1.9	0.1
Germany	1992	100	4.9	23.0	35.5	26.6	9.6	0.5	0.1
	1995	100	3.7	21.3	34.4	28.2	10.5	1.7	0.1
Luxembourg	1975	100	7.1	31.0	35.2	18.0	7.3	1.3	0.1
	1996	100	2.8	18.5	36.3	29.1	11.4	1.9	0.0
Netherlands	1975	100	2.8	25.9	42.5	20.1	6.7	1.7	0.2
	1996	100	1.3	10.8	31.6	39.0	15.1	2.1	0.1
Switzerland	1975	100	3.4	26.5	38.4	21.5	7.9	2.1	0.2
	1996	100	1.3	14.1	35.1	34.2	13.0	2.1	0.1
Latin America and the Caribbean									
Caribbean									
Bahamas	1975	100	12.5	30.0	26.3	15.7	10.7	4.2	0.5
	1992	100	13.3	26.0	25.7	20.8	11.1	2.7	0.5
Barbados	1976	100	16.5	29.7	26.0	14.8	9.9	2.7	0.4
	1988	100	13.9	27.5	28.1	20.6	9.0	0.8	0.0
Cuba	1980	100	25.6	34.8	21.6	11.2	4.9	1.3	0.5
	1991	100	21.0	31.3	26.6	14.9	5.2	0.9	0.1
Martinique	1974	100	7.7	26.9	28.1	19.8	11.9	4.9	0.7
	1992	100	7.3	22.9	29.5	24.1	12.8	3.2	0.2
Trinidad and Tobago	1975	100	12.4	29.0	26.2	18.2	10.1	3.5	0.6
	1993	100	12.7	29.0	25.4	19.9	9.9	2.7	0.3
Northern America									
Canada	1975	100	9.3	30.1	35.8	17.8	5.7	1.3	0.1
	1993	100	7.5	22.0	34.6	25.6	8.9	1.3	0.0
United States of America	1975	100	15.7	32.0	30.6	14.8	5.5	1.3	0.1
	1994	100	14.5	28.5	28.7	19.3	7.6	1.3	0.1

Country or area	Year	Total	Age groups (years)						
			15-19	20-24	25-29	30-34	35-39	40-44	45-49
Oceania									
Australia	1975	100	9.2	31.1	35.0	17.2	6.1	1.4	0.1
	1994	100	5.6	18.7	34.1	28.5	11.2	1.8	0.1
New Zealand	1975	100	11.5	33.7	33.2	14.7	5.3	1.5	0.1
	1995	100	8.4	20.6	31.2	27.4	10.6	1.8	0.1

Source: Table 8.

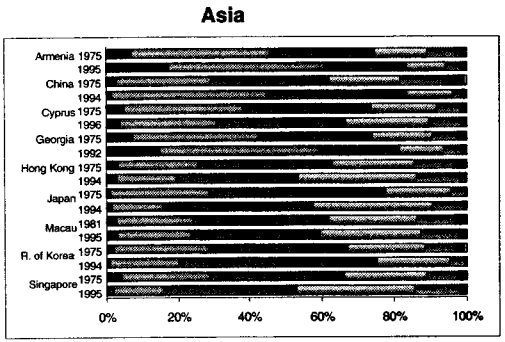
Canada and Australia are characterized by higher fertility among women aged 25-29, while the United States of America exhibited peak fertility among women aged 20-24 and 25-29 in both the periods. In New Zealand, however, the peak fertility occurred among women aged 20-24 and 25-29 in 1975 and later shifted to only women aged 25-29 in 1995. The United States of America showed an increase in fertility in all the age groups, with the highest increase (62 per cent) among women aged 35-39 between 1975 and 1994. There was also a more than 50 per cent increase in fertility among women aged 30-34 during this period. Although the total fertility rate has declined in Canada, Australia and New Zealand, there was a substantial rise in fertility among women aged 30-34 and 35-39 in these countries. However, the decline in fertility occurred to younger women aged 15-19 and 20-24.

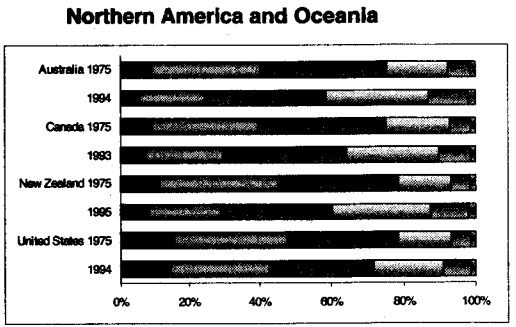
In Canada and Australia, women aged 25-29 contributed the most, at least one third, to the total fertility rate, while in the United States of America, women aged 20-24 and 25-29 contributed almost the same (around 30 per cent) to the total fertility rate in both the periods. There has been a shift in the age pattern of fertility in New Zealand in that women aged 20-24 and 25-29 both contributed almost the same (about one third) to the total fertility rate in 1975, but in 1995 women aged 25-29 contributed the most and the contribution of women aged 20-24 was reduced to 21 per cent. This is largely due to the reduction in fertility of women in this age group coupled with the rise in fertility among women aged 30-34 and 35-39.

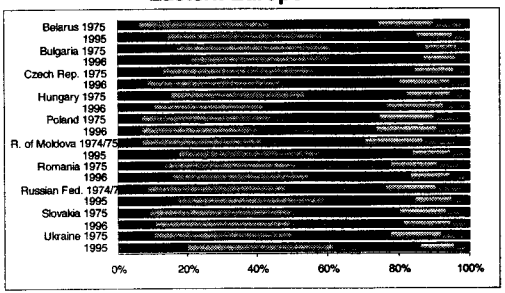
AGE AT CHILDBEARING

The mean age at childbearing is estimated from the age pattern of fertility and it provides a summary measure of average age at which women procreate. The mean age at childbearing for all children may be interpreted as approximating the length of a generation. The mean age at childbearing of first birth can also be estimated based on data for the first child only. Table 11 and figure V show the mean age at childbearing from 1975 to 1996 or the most recent year the data were available. As can be seen from this table, there is a little variation in the mean age at childbearing between countries, especially within regions. In Asia, the mean age in 1975 ranged from 26.8 years in Armenia to 29.1 years in China, and from 24.8 years in Armenia in 1995 to 29.8 years in Singapore in 1995. During this period, the mean age increased in Cyprus, Hong Kong, Japan

Figure IV. Fertility contribution of each age group to total fertility rate: 1975 and 1996
(Percentage)







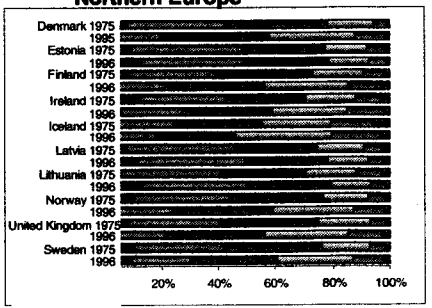
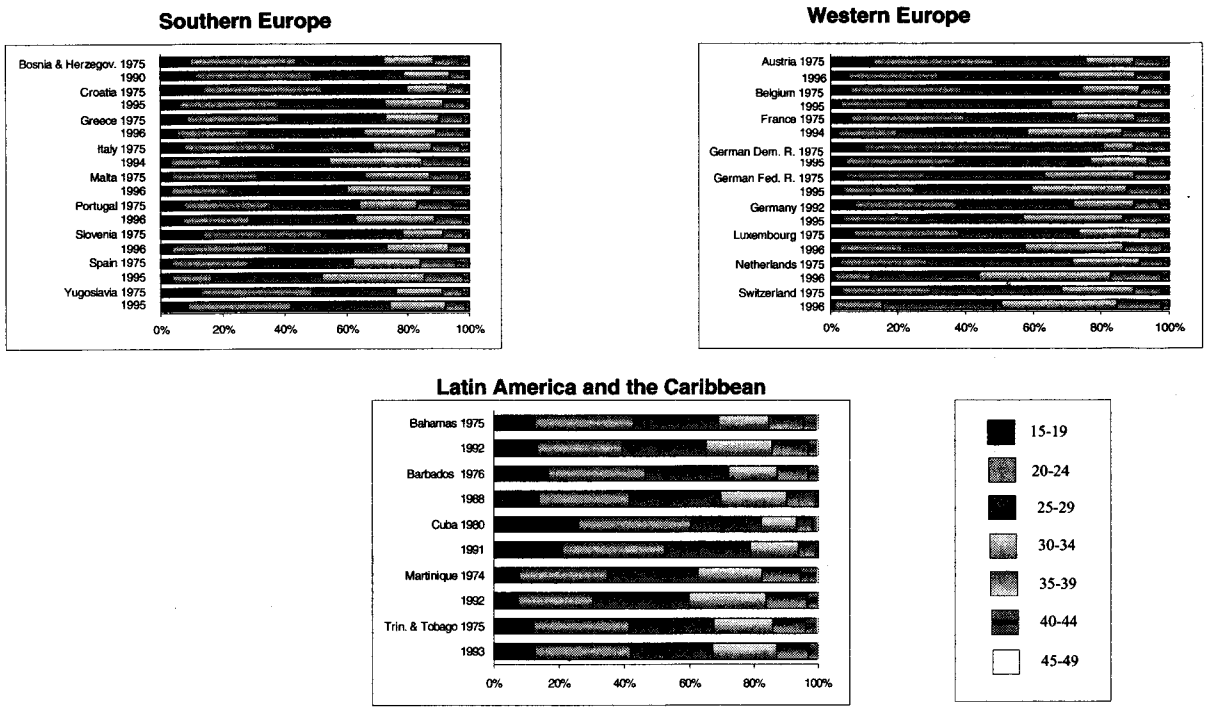


Figure IV *(continued)*



Source: Table 10.

and Singapore, while it declined in Armenia, China, Georgia and the Republic of Korea, and remained unchanged in Macau.

In Europe, the mean age at childbearing was found to be the lowest in Bulgaria both in 1975 (24.5 years) and in 1996 (24.3 years), while in Ireland it was the highest both in 1975 (29.7 years) and in 1996 (30.3 years). With regard to the direction of change, except in the Czech Republic, Hungary, Poland and Slovakia, the mean age decreased in all the Eastern European countries. On the other hand, except in Bosnia and Herzegovina, Estonia, Latvia and Lithuania and Portugal, all the Northern European and the Southern European countries exhibited a rise in the mean age at childbearing between 1975 and 1996. The mean age invariably increased in all the countries in Western Europe. Likewise, Trinidad and Tobago has shown a small decrease in the mean age at childbearing, while all other countries in the Caribbean, Northern America and Oceania exhibited a rise in the mean age.

TABLE 11. TREND IN MEAN AGE OF WOMEN AT CHILDBEARING AND DIRECTION OF CHANGE: 1975-1996 OR MOST RECENT YEAR

Country or area	*1975*	*1996*	*Direction of change 1975 to 1996 or most recent year*
Asia			
Eastern Asia			
China[a]	29.1	26.3	-
Hong Kong[a]	28.9	29.5	+
Japan[a]	27.4	29.3	+
Macau[b]	29.0	29.0	0
Rep. of Korea[a]	28.4	27.9	-
South-eastern Asia			
Singapore[c]	28.3	29.8	+
Western Asia			
Armenia[c]	26.8	24.8	-
Cyprus	27.2	28.1	+
Georgia[d]	26.9	25.1	-
Europe			
Eastern Europe			
Belarus[c]	26.9	24.9	-
Bulgaria	24.5	24.3	-
Czech Republic	25.1	26.1	+
Hungary	25.3	26.5	+
Poland	26.8	27.0	+
Rep. of Moldova[c]	27.4	24.8	-
Romania	26.0	25.2	-
Russian Federation[e]	26.4	24.8	-

Country or area	1975	1996	Direction of change 1975 to 1996 or most recent year
Slovakia	25.9	25.9	0
Ukraine[c]	26.1	24.4	-
Northern Europe			
Denmark[c]	26.4	29.2	+
Estonia	26.2	25.9	-
Finland	27.0	29.4	+
Iceland	27.0	28.8	+
Ireland	29.7	30.3	+
Latvia	26.7	26.0	-
Lithuania	27.4	25.8	-
Norway	26.4	28.9	+
Sweden	26.7	29.4	+
United Kingdom	26.5	28.3	+
Southern Europe			
Bosnia and Herzegovina[f]	27.0	26.0	-
Croatia[c]	25.7	27.2	+
Greece	27.1	28.2	+
Italy[a]	27.6	29.6	+
Malta	28.3	29.0	+
Portugal	28.3	28.2	-
Slovenia	25.8	27.4	+
Spain[c]	28.8	29.7	+
Yugoslavia[c]	26.2	26.7	+
Western Europe			
Austria	26.3	27.8	+
Belgium[c]	27.1	28.5	+
France[a]	27.2	29.3	+
German Dem. Rep.[c]	25.8	27.0	+
Germany, Fed. Rep. of[c]	27.3	29.1	+
Germany[g]	28.2	28.8	+
Luxembourg	27.1	29.2	+
Netherlands	27.9	30.6	+
Switzerland	28.0	30.0	+
Latin America and the Caribbean			
Caribbean			
Bahamas[d]	27.3	27.5	+
Barbados[h]	26.6	26.8	+
Cuba[i]	24.6	25.3	+
Martinique[j]	28.5	28.6	+

Country or area	1975	1996	Direction of change 1975 to 1996 or most recent year
Trinidad and Tobago[k]	27.4	27.2	-
Northern America			
Canada[k]	26.7	28.0	+
United States of America[a]	25.8	26.6	+
Oceania			
Australia[a]	26.7	28.8	+
New Zealand[c]	26.2	28.4	+

NOTE: A minus sign (-) indicates a decline; a plus sign (+) indicates an increase; zero (0) indicates no change.

[a]Refers to the period 1975-1994.
[b]Refers to the period 1981-1995.
[c]Refers to the period 1975-1995.
[d]Refers to the period 1975-1992.
[e]Refers to the period 1974/75-1995.
[f]Refers to the period 1975-1990.
[g]Refers to the period 1990-1995.
[h]Refers to the period 1976-1988.
[i]Refers to the period 1980-1991.
[j]Refers to the period 1974-1992.
[k]Refers to the period 1975-1993.
Source: Computed from table 8.

Data on the mean age of women at first birth are presented in table 12 for a number of European countries.[3] In a majority of countries the mean age of women at first birth has increased from 1975 to 1995. Only in Bulgaria and Estonia has there been a noticeable decline in the mean age of women at first birth during this period. In the Czech Republic, the former German Democratic Republic and Portugal the mean declined slightly from 1975 to 1985 and increased in 1995. It is worth noting that in Eastern Europe, the mean age of women at first birth is consistently low, while it is relatively high in Western Europe. In particular, the higher mean age of women at first birth is found in the Netherlands and Switzerland and the lower mean is observed in Bulgaria and Slovakia in both 1975 and 1995. Between 1975 and 1995 the increase in the mean age of women at first birth of three years or more was recorded in Denmark, France, Germany (both the former German Democratic Republic and the former Federal Republic of Germany), Iceland and the Netherlands.

TABLE 12. TREND IN MEAN AGE OF WOMEN AT BIRTH OF FIRST CHILD, SELECTED EUROPEAN COUNTRIES: 1975-1995 OR MOST RECENT YEAR

Country or area	*1975*	*1985*	*1995*	*Trend 1975-1985*	*Trend 1985-1995*
Eastern Europe					
Bulgaria	22.0	21.9	21.3[a]	-	-
Czech Republic	22.5	22.4	22.9[b]	-	+
Hungary	22.4[c]	22.6	22.7[b]	+	+
Poland	22.7	23.3	22.7[b]	+	-
Romania	22.2	22.4	22.7	+	+
Slovakia	22.0	22.3	22.1[b]	+	-
Northern Europe					
Denmark	24.0	25.5	27.3[b]	+	+
Estonia	23.6	23.2	22.9[d]	-	-
Finland	24.7	26.1	27.4[b]	+	+
Iceland	21.8	23.1	25.0	+	+
Ireland	24.8	25.6	27.0	+	+
Latvia	22.9[c]	23.0	23.0	+	0
Norway	24.2	26.1	26.3[b]	+	+
Sweden	24.5	26.1	27.2[b]	+	+
United Kingdom[e]	24.1	24.8	26.5[b]	+	+
Southern Europe					
Bosnia and Herzegovina	22.4	23.3	23.6[f]	+	+
Croatia	22.3	23.3	24.8[b]	+	+
Greece	23.6	23.7	26.2	+	+
Italy	24.7	25.9	27.5[b]	+	+
Portugal	24.0	23.8	25.6	-	+
Slovenia	22.8	23.2	24.8[b]	+	+
Spain	24.5	25.4	27.2[g]	+	+
Western Europe					
Austria	24.0	25.1	25.9[b]	+	+
Belgium	24.2	25.5	26.4[f]	+	+
France	24.2	25.9	27.6[a]	+	+
German Dem. Rep.	22.5	22.3	26.6[b]	-	+
Germany, Fed. Rep. of	24.8	26.2	27.9[b]	+	+
Germany	..	26.9[d]	27.8[b]	..	+

Country or area	1975	1985	1995	Trend 1975-1985	Trend 1985-1995
Netherlands	25.0	26.5	28.8	+	+
Switzerland	25.7	27.0	28.3[b]	+	+

NOTE: A minus sign (-) indicates a decline; A plus sign (+) indicates an increase; zero indicates no change.

Two dots (..) indicate that data are not available.

[a]Refers to 1993.

[b]Refers to 1994.

[c]Refers to 1980.

[d]Refers to 1991.

[e]Data are for England and Wales only.

[f]Refers to 1990.

[g]Refers to 1992.

Source: Council of Europe. *Recent Demographic Developments in Europe 1996*, table 3.4, p. 47. Council of Europe Publishing, Strasbourg, 1996.

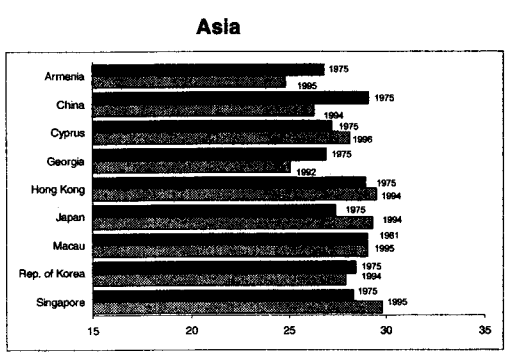
NUMBER OF BIRTHS

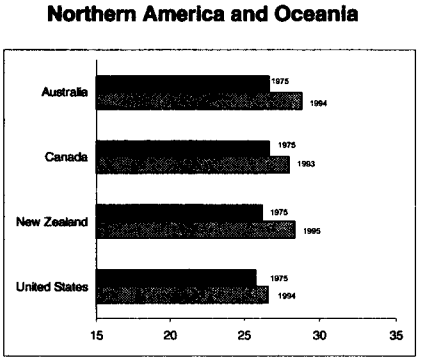
The decline in total fertility experienced by these countries can be examined in terms of annual number of births and the distribution of such births by birth order. Because the annual number of births directly affects the size of the population, such information is important for the Government to formulate plans and policies with respect to social and economic conditions of the population. Proportions of births by birth order, on the other hand, provide useful indicators of the concentration of births.

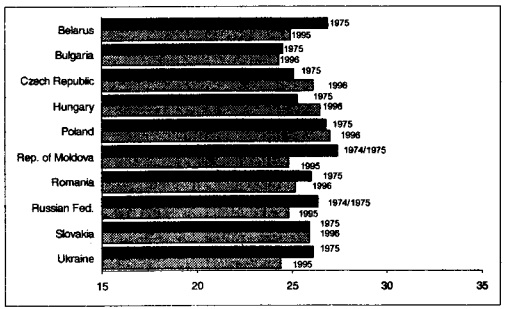
Table 13 shows the total number of births in 1975 and 1995 and its percentage change, and in table 14 countries are classified by percentage total decline in annual number of births. It is evident from these tables that out of 54 countries listed in this study for which reliable data on number of births are reported, a total of 44 countries experienced a decline in annual number of births and the remaining 10 countries showed an increase. Of these 44 countries, 19 countries exhibited a decline of 30 per cent or more in the annual number of births. Particularly noteworthy are those countries, such as Bulgaria, the Czech Republic and the former German Democratic Republic, where the annual number of births in 1995 has been reduced by half as compared to that in 1975. Other countries, such as Georgia, Portugal, Romania and Spain also showed a more than 40 per cent drop in annual number of births during this period.

It is apparent that the larger percentage decline in annual number of births is the result of the faster decline in total fertility. For example, countries such as Bulgaria, the Czech Republic, Georgia, the former German Democratic Republic, Hungary, Portugal, Romania and Spain, which experienced a total decline in annual number of births of 40 per cent or more, have witnessed a decline in their total fertility rate of close to or more than 2 per cent per annum (table 6). By contrast, the increase in number of births observed between 1975 and 1995 in the remaining 10 countries may be due to the higher fertility potential resulting from the higher proportion of women in the reproductive ages and their young age structure. Of these countries, Cyprus, Luxembourg and the United

Figure V. Trend in mean age at childbearing: 1975 and 1996







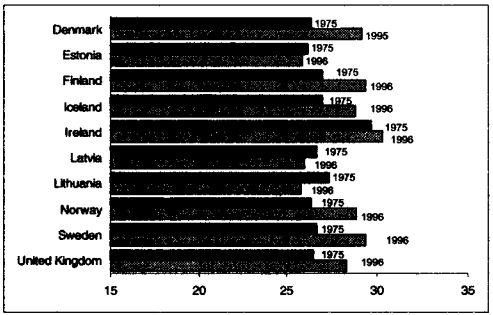
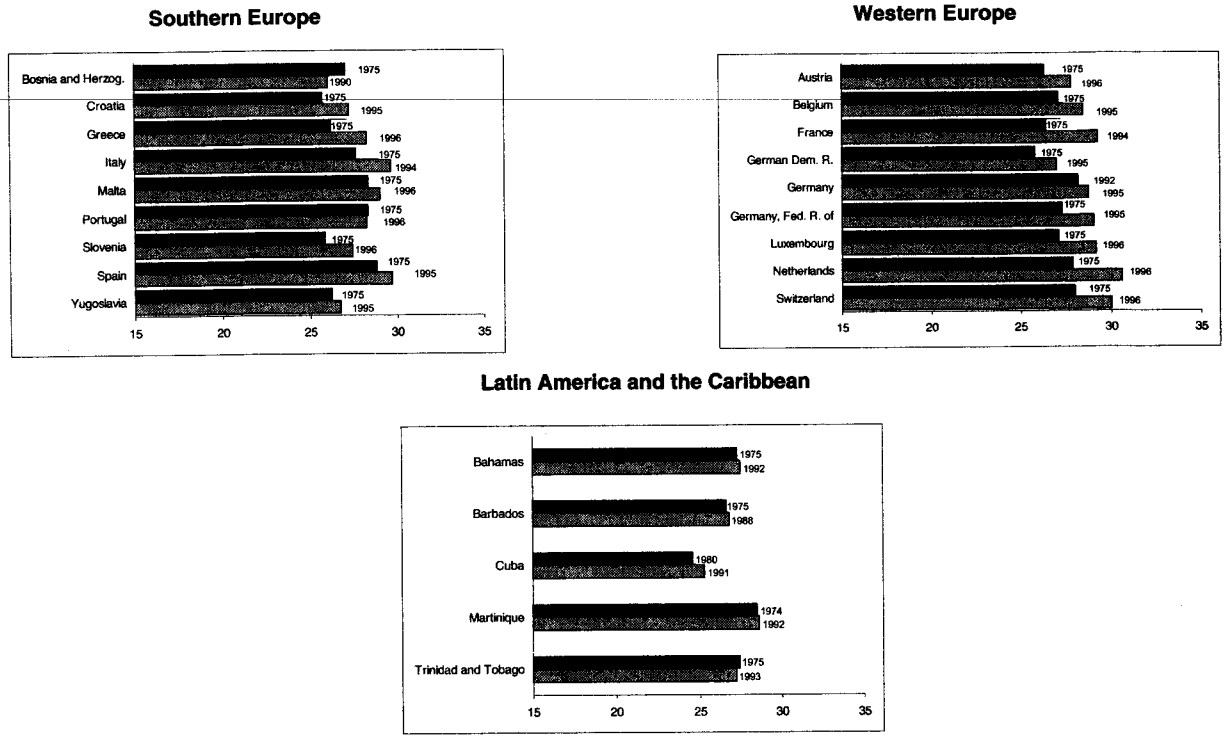


Figure V *(continued)*



Source: Table 11.

States of America had a rise in fertility, and Canada, the former Federal Republic of Germany, Netherlands, Singapore, Switzerland and the United Kingdom exhibited a fertility decline of less than 1 per cent per annum during this period.

TABLE 13. TREND IN ANNUAL NUMBER OF BIRTHS AND PERCENTAGE TOTAL CHANGE: 1975-1995

Country or area	*1975*	*1995*	*Percentage total change*
Asia			
Eastern Asia			
China	22 372 000[a]	21 260 000[b]	-5.0
Hong Kong	79 757	71 646	-10.2
Japan	1 901 440	1 187 064[c]	-37.6
Republic of Korea	825 829	704 590	-14.6
South-eastern Asia			
Singapore	39 948	48 738	+22.0
Western Asia			
Armenia	62 866	48 960	-22.1
Cyprus	9 768	11 269	+15.4
Georgia	89 712	51 900[c]	-42.1
Europe			
Eastern Europe			
Belarus	146 517	101 144	-31.0
Bulgaria	144 668	71 967	-50.3
Czech Republic	191 776	96 097	-49.9
Hungary	194 240	112 054	-42.3
Poland	646 381	433 109	-33.0
Republic of Moldova	79 169	56 411	-28.7
Romania	418 185	236 640	-43.4
Russian Federation	2 106 147	1 363 806	-35.2
Slovakia	97 649	61 427	-37.1
Ukraine	738 857	492 861	-33.3
Northern Europe			
Denmark	72 071	69 771	-3.2
Estonia	21 360	13 560	-36.5
Finland	65 719	63 067	-4.0
Iceland	4 384	4 280	-2.4
Ireland	67 178	48 530	-27.8
Latvia	34 810	21 595	-38.0
Lithuania	51 766	41 180	-20.4
Norway	56 345	60 292	-7.0
Sweden	103 632	103 422	-0.2
United Kingdom	697 518	732 049	+5.0

Country or area	1975	1995	Percentage total change
Southern Europe			
Bosnia and Herzegovina	78 844	66 952[d]	-15.1
Croatia	67 016	50 182	-25.1
Greece	142 273	101 495	-28.7
Malta	5 724	4 613	-19.4
Italy	827 852	521 345	-37.0
Portugal	179 648	107 097	-40.4
Slovenia	29 786	18 980	-36.3
Spain	669 378	359 870	-46.2
Yugoslavia	172 812	140 504	-18.7
Western Europe			
Austria	93 757	88 669	-5.4
Belgium	119 693	115 638	-3.4
France	745 065	727 800	-2.3
German Dem. Rep.	181 798	83 847	-53.9
Germany, Fed. Rep. of	600 512	681 374	+13.5
Germany	782 310	765 221	-2.2
Luxembourg	3 982	5 421	+36.1
Netherlands	177 876	190 513	+7.1
Switzerland	78 464	82 203	+4.8
Latin America and the Caribbean			
Caribbean			
Bahamas	4 033	4 357[c]	+8.0
Barbados	4 683	3 781[b]	-19.3
Cuba	192 941	152 226[b]	-21.1
Martinique	6 741	5 900[b]	-12.5
Trinidad and Tobago	25 673	21 094[b]	-17.8
Northern America			
Canada	359 323	386 350[c]	+7.5
United States of America	3 144 198	3 900 089	+24.0
Oceania			
Australia	233 012	188 140	-19.3
New Zealand	56 639	37 037[e]	-34.6

[a]Estimated by Population Division by using crude birth rate and mid-year population.
[b]Refers to 1993.
[c]Refers to 1994.
[d]Refers to 1990.
[e]Refers to 1992.

Sources: Council of Europe. *Recent Demographic Developments in Europe 1997.* Council of Europe Publishing, Strasbourg, 1997; United Nations. *Demographic Yearbook 1986.* Sales No. E/F.87.XIII.1, table 20; United Nations. *Demographic Yearbook 1995.* Sales No. E/F.97.XIII.1, table 9.

TABLE 14. CLASSIFICATION OF COUNTRIES OR AREAS BY PERCENTAGE TOTAL DECLINE IN ANNUAL NUMBER OF BIRTHS: 1975-1995

Countries with an increase	*Percentage total decline*				
	Less than 10	*10-19*	*20-29*	*30-39*	*40 or more*
Bahamas[d]	Austria	Australia	Armenia	Belarus	Bulgaria
Canada[d]	Belgium	Barbados[c]	Cuba[c]	Estonia	Czech Republic
Cyprus	China[c]	Bosnia and Herzegovina[a]	Croatia	Italy	Georgia[d]
Germany, Fed. Rep. of	Denmark	Hong Kong[d]	Greece	Japan	German Dem. Rep.
Luxembourg	Finland	Malta	Ireland	Latvia	Hungary
Netherlands	France	Martinique[c]	Lithuania	New Zealand[b]	Portugal
Singapore	Iceland	Rep. of Korea	Rep. of Moldova	Poland	Romania
Switzerland	Norway	Trinidad and Tobago[c]		Russian Fed.	Spain
United Kingdom	Sweden	Yugoslavia		Slovakia	
United States of America				Slovenia	
				Ukraine	

[a]Refers to the period 1975-1990.
[b]Refers to the period 1975-1992.
[c]Refers to the period 1975-1993.
[d]Refers to the period 1975-1994.
Source: Table 13.

BIRTHS BY BIRTH ORDER

Table 15 and figure VI present the percentage distribution of births by birth order in 1975 and 1995 or the most recent year the data were available, and table 16 shows the direction of change. It is apparent that in Japan the proportion of fourth and higher order births had already reduced to a very low level, below 3 per cent in 1975, and has remained low since then. In other Asian countries too, the proportion of fourth and higher order births has been drastically reduced from 1975 to 1995. The lowest proportion of such births (1 per cent) is reported in the Republic of Korea. In China where the data on births by birth order are available for third and higher births, it reveals a dramatic reduction in the proportion of such births from 54 per cent in 1975 to less than 10 per cent in 1994. As a result of the reduction in higher order births (third and higher) in all the Asian countries, except Japan, which showed a small rise, there has been a sharp increase in the proportion of first order births and to some extent in the proportion of second order births. In all these countries, over 40 per cent of births in 1995 are first order births: in particular first order births represent almost two thirds of the total births in China, one of the highest in the world.

TABLE 15. BIRTHS BY BIRTH ORDER TO TOTAL NUMBER OF LIVE BIRTHS: 1975-1995[a]
(Percentage)

Country or area	Birth order							
	First		Second		Third		Fourth or higher	
	1975	1995	1975	1995	1975	1995	1975	1995
Asia								
Eastern Asia								
China	23.8	62.7[b]	22.6	27.8[b]	53.6[c]	9.5[b,c]	..	..
Hong Kong	39.4	49.1[b]	26.5	37.6[b]	14.9	10.1[b]	18.3	3.1[b]
Japan	45.4	47.8	40.4	36.1	11.8	13.2	2.5	2.9
Macau	34.5[d]	45.8	32.5[d]	38.7	15.9[d]	12.3	17.0[d]	3.2
Rep. of Korea	38.3[d]	48.1	32.6[d]	43.3	18.5[d]	7.5	10.6[d]	1.0
South-eastern Asia								
Singapore	36.7	41.4	31.6	35.5	16.5	17.0	14.9	6.1
Western Asia								
Armenia	36.9	39.6	28.2	36.9	17.3	16.5	17.6	7.0
Cyprus	43.1	34.9	32.7	33.6	14.5	19.9	8.8	11.3
Georgia	44.4	49.8[e]	32.0	33.6[e]	15.0	12.1[e]	8.6	4.5[e]
Europe								
Eastern Europe								
Belarus	49.1	58.2	33.1	31.2	10.1	6.7	7.8	3.9
Bulgaria	43.6	54.7	41.6	33.6	9.3	6.9	5.4	4.8
Czech Republic[f]	42.0	47.7[b]	40.8	36.9[b]	12.8	10.8[b]	4.4	4.6[b]

Country or area	Birth order							
	First		Second		Third		Fourth or higher	
	1975	1995	1975	1995	1975	1995	1975	1995
Hungary	43.6	43.2	39.6	34.3	10.7	14.4	6.1	8.1
Rep. of Moldova[f]	45.3	49.1	29.2	32.0	11.2	11.9	14.2	6.4
Poland[f]	43.9	40.8	31.6	30.6	13.1	15.6	11.4	13.0
Romania[f]	38.3	54.4	28.5	27.7	15.5	7.9	17.7	10.0
Russian Federation[f]	54.0	59.7	31.2	28.5	7.6	7.6	7.2	4.2
Slovakia	39.8	43.3	33.6	33.5	15.5	13.6	11.1	9.6
Ukraine	52.2	56.3[g]	33.3	31.8[g]	9.0	7.6[g]	5.5	4.4[g]
Northern Europe								
Denmark	44.6	45.7[b]	36.1	36.1[b]	13.8	13.6[b]	5.5	4.6[b]
Estonia[f]	49.3	50.1	35.4	31.9	10.0	11.1	5.3	6.9
Finland	52.3	38.8	33.0	34.4	9.7	17.1	5.1	9.7
Iceland[f]	38.8	37.0	29.4	31.1	18.0	22.8	13.9	9.2
Ireland	30.7	36.4	24.4	30.0	17.3	18.2	27.7	15.1
Latvia[f]	50.8	52.1	34.4	29.9	9.0	10.7	5.8	7.3
Lithuania[f]	45.6	50.2	34.5	34.6	11.4	9.7	8.5	5.5
Norway[h]	43.8	40.6	36.0	36.3	13.8	17.0	6.5	6.0
Sweden[f]	44.6	39.9	37.6	36.6	13.0	15.9	4.8	7.6
United Kingdom[i]	41.2	39.2	37.1	36.9	13.5	15.6	8.2	8.3
Southern Europe								
Bosnia and Herzegovina	46.4	45.9[j]	15.7	37.4[j]	15.8	11.3[j]	22.0	5.4[j]
Croatia[f]	47.1	40.7[b]	34.0	35.5[b]	8.8	13.8[b]	5.7	5.7[b]
Greece	43.4	45.7	36.9	37.0	13.0	11.5	6.8	5.8
Italy[f]	43.2	49.7[g]	32.6	36.4[g]	13.4	10.5[g]	10.8	3.4[g]
Portugal[f]	41.3	52.8	27.1	32.3	11.7	9.2	19.9	5.6
Slovenia[k]	50.6	46.3	34.3	39.4	9.7	10.9	5.4	3.4
Spain[f]	37.9	52.1[g]	30.1	35.1[g]	16.6	9.1[g]	15.4	3.7[g]
Yugoslavia[f]	40.3	45.1[b]	30.9	32.8[b]	9.8	12.8[b]	19.0	9.3[b]
Western Europe								
Austria[l]	39.9	39.7	33.2	39.0	14.2	15.0	12.8	6.3
Belgium[l]	49.1	48.1[m]	30.8	32.3[m]	11.1	12.8[m]	9.0	6.8[m]
France[n]	48.2	45.3[g]	31.0	33.3[g]	11.3	13.8[g]	9.5	7.6[g]
German Dem. Rep.[n]	59.4	42.1[b]	31.9	38.6[b]	5.5	12.1[b]	3.3	7.2[b]
Germany, Fed. Rep. of[n]	46.7	47.4[b]	33.0	35.8[b]	11.8	11.7[b]	8.5	5.1[b]
Germany[n]	..	47.1[b]	..	36.0[b]	..	11.7[b]	..	5.2[b]
Luxembourg	46.9	42.0	34.3	37.6	11.9	15.3	7.0	4.2
Netherlands[f]	43.8	43.3	39.6	36.5	10.9	14.0	5.6	6.3
Switzerland[k]	44.4	44.1	38.0	38.0	11.8	13.3	5.8	4.6

Country or area	Birth order							
	First		Second		Third		Fourth or higher	
	1975	1995	1975	1995	1975	1995	1975	1995
Latin America and the Caribbean								
Caribbean								
Bahamas	29.8[o]	37.7[e]	20.8[o]	26.8[e]	14.6[o]	16.5[e]	34.8[o]	18.9[e]
Barbados	37.0[o]	43.2[m]	26.4[o]	28.9[m]	16.5[o]	14.7[m]	19.1[o]	13.1[m]
Cuba	51.4[p]	51.4[j]	25.7[p]	34.2[j]	9.6[p]	10.2[j]	7.2[p]	4.2[j]
Trinidad and Tobago	31.6[o]	36.3[b]	24.4[o]	26.6[b]	15.4[o]	15.9[b]	28.1[o]	21.0[b]
Northern America								
Canada	44.1	42.5[b]	33.6	35.1[b]	13.9	14.8[b]	8.4	7.6[b]
United States of America	42.0	41.3	31.4	31.9	14.0	15.8	11.4	10.2
Oceania								
Australia	39.3	40.2	35.4	35.8	15.9	16.6	9.2	7.4
New Zealand	35.7	36.9[e]	34.6	33.5[e]	17.5	18.3[e]	12.1	11.3[e]

NOTE: Two dots (..) indicate that data are not available.

[a]Percentages may not add up to 100 because percentages of births of unknown order are not shown.

[b]Refers to 1994.

[c]Third or higher order births.

[d]Refers to 1980.

[e]Refers to 1992.

[f]Biological birth order of the mother.

[g]Refers to 1993.

[h]1975: births of the actual marriage; 1995: births from the same mother.

[i]Births outside marriage are not included.

[j]Refers to 1990.

[k]Births of the present marriage.

[l]Legitimate births, including still births.

[m]Refers to 1991.

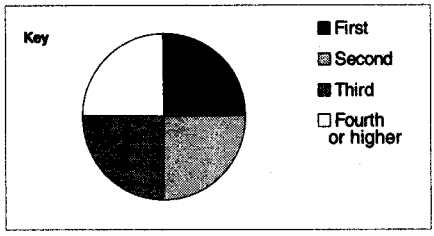
[n]Legitimate births during actual marriage of the mother.

[o]Refers to 1977.

[p]Refers to 1982.

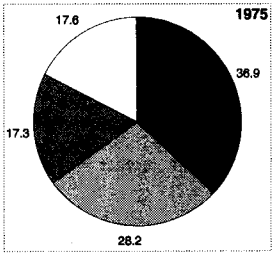
Sources: Council of Europe. *Recent Demographic Developments in Europe 1996.* Council of Europe Publishing, Strasbourg, 1996. Greenhalgh, Susan. Fertility trends in China: approaching the 1990s. *Population Council Working Papers*, No. 8. New York, 1989. Statistics of the State Statistical Bureau. *China's Main Population Data 1994.* Department of Population and Employment. United Nations. *1986 Demographic Yearbook.* New York, 1988. United Nations. *Patterns of Fertility in low fertility Settinigs.* New York, 1992. United Nations. Database of the Statistics Division, United Nations, New York.

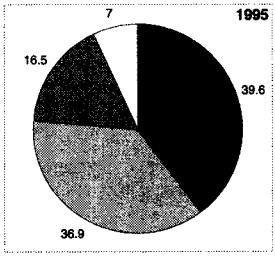
Figure VI. Distribution of births by birth order: 1975 and 1995
(Percentage)



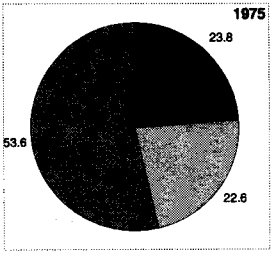
Asia

Armenia





China



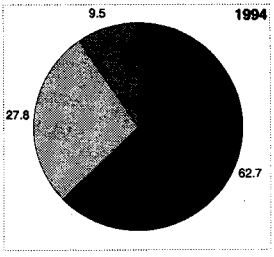
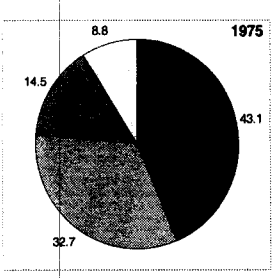
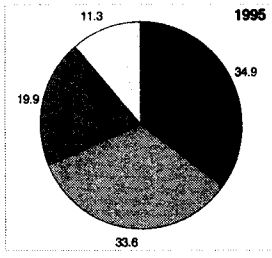


Figure VI *(continued)*

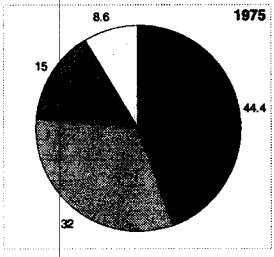
Asia

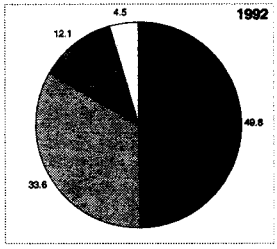
Cyprus



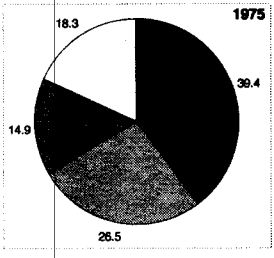


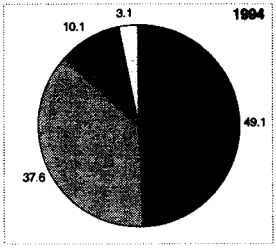
Georgia



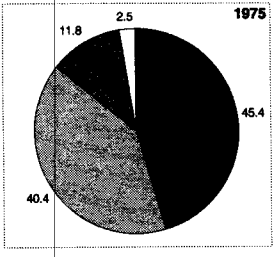


Hong Kong





Japan



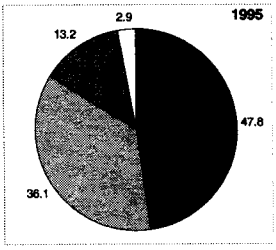
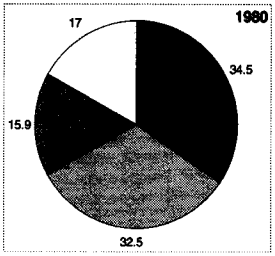
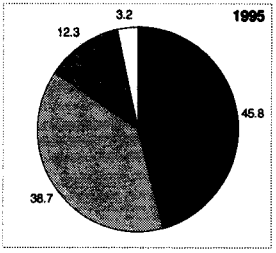


Figure VI *(continued)*

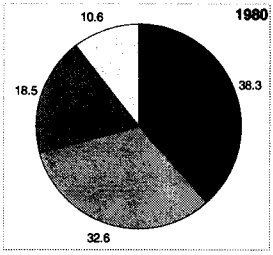
Asia

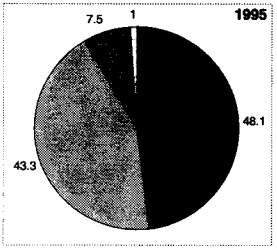
Macau



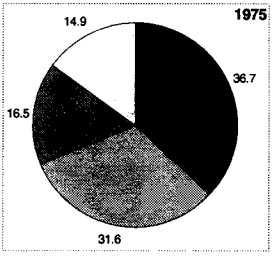


Republic of Korea





Singapore



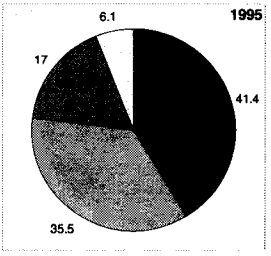
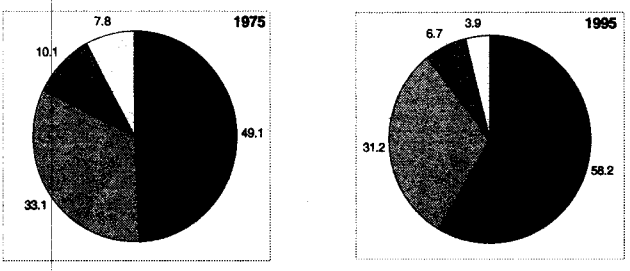


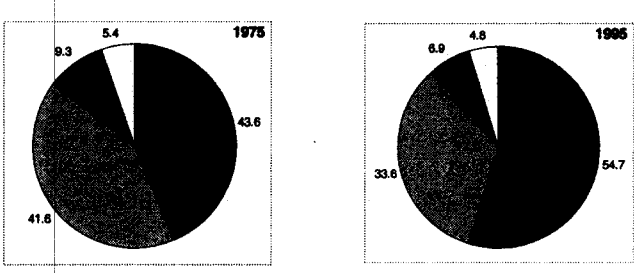
Figure VI *(continued)*

Eastern Europe

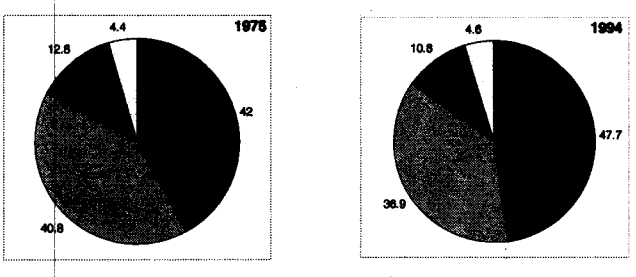
Belarus



Bulgaria



Czech Republic



Hungary

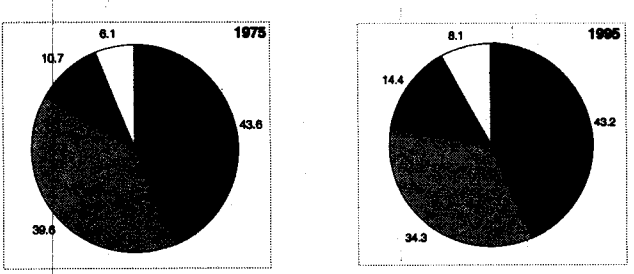
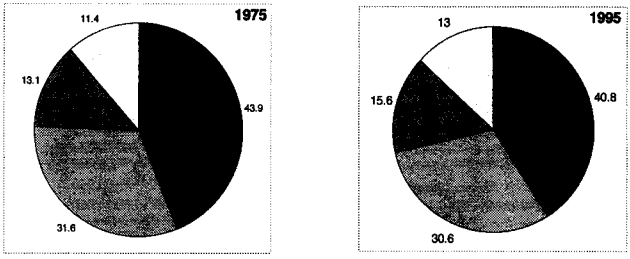


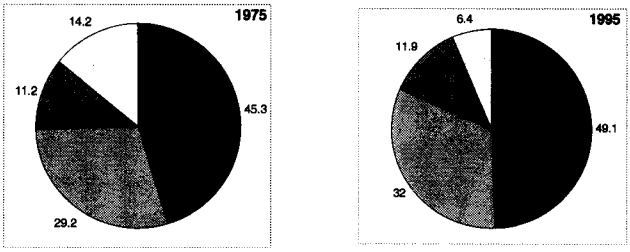
Figure VI *(continued)*

Eastern Europe

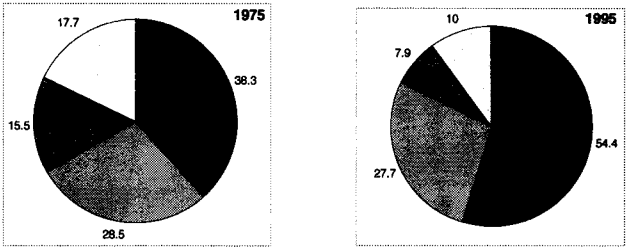
Poland



Republic of Moldova



Romania



Russian Federation

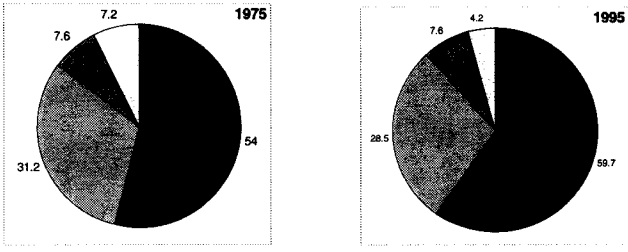
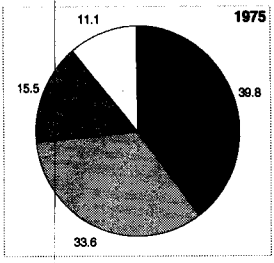
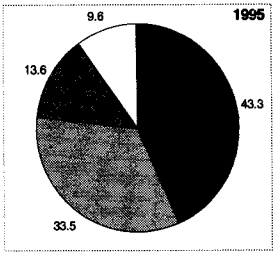


Figure VI *(continued)*

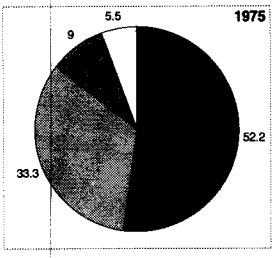
Eastern Europe

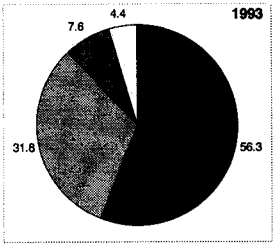
Slovakia





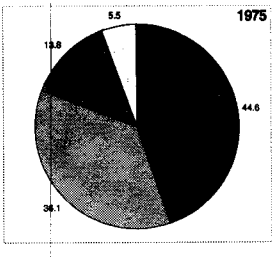
Ukraine

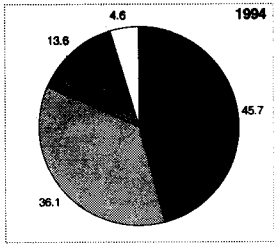




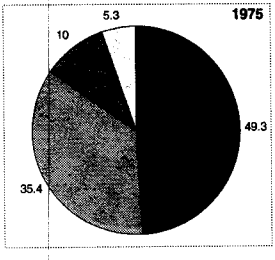
Northern Europe

Denmark





Estonia



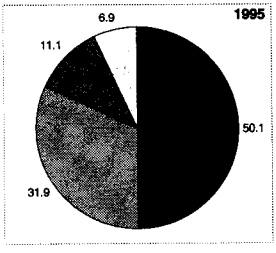
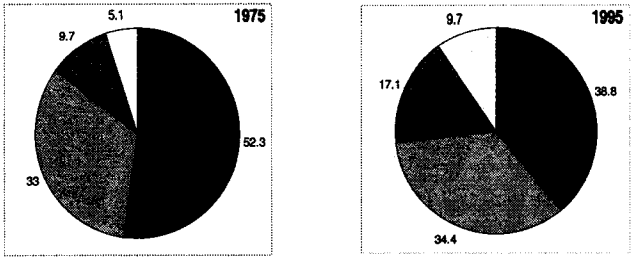


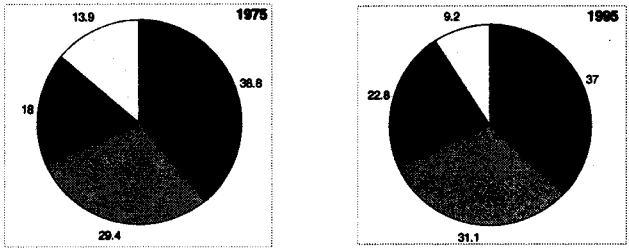
Figure VI *(continued)*

Northern Europe

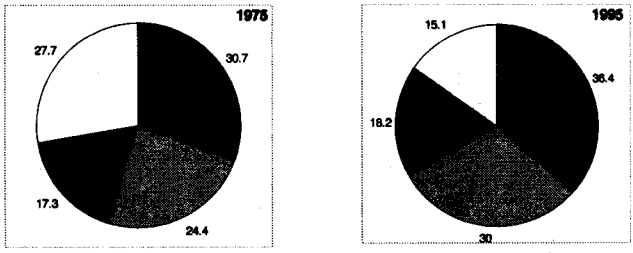
Finland



Iceland



Ireland



Latvia

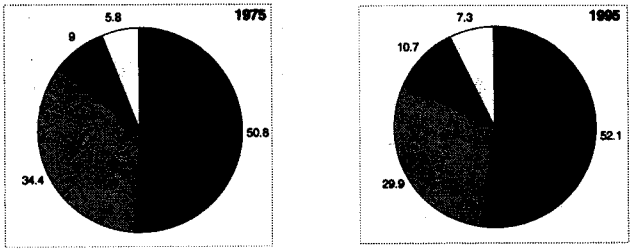
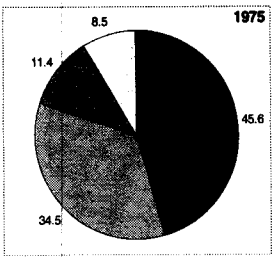
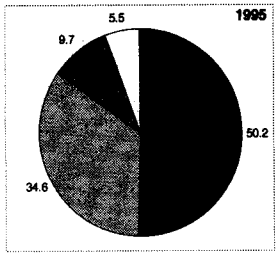


Figure VI *(continued)*

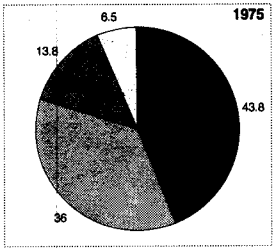
Northern Europe

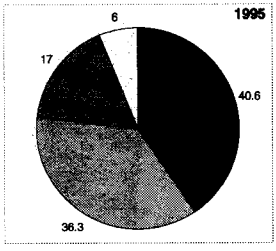
Lithuania



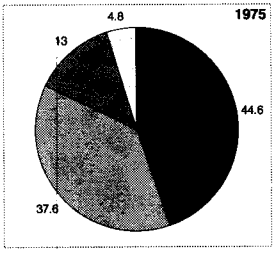


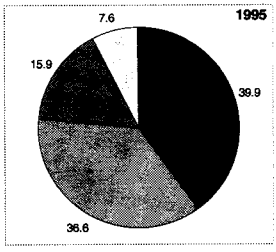
Norway



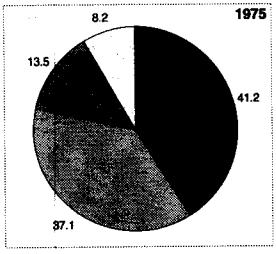


Sweden





United Kingdom



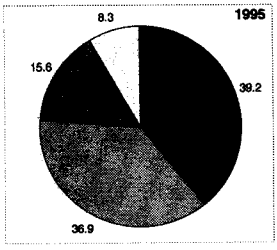
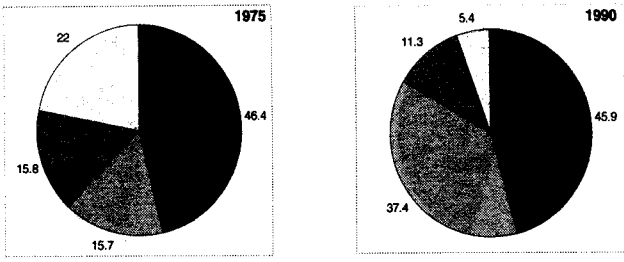


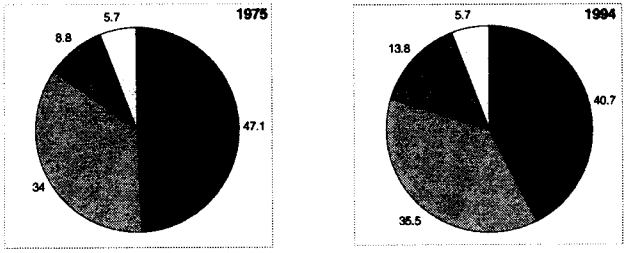
Figure VI *(continued)*

Southern Europe

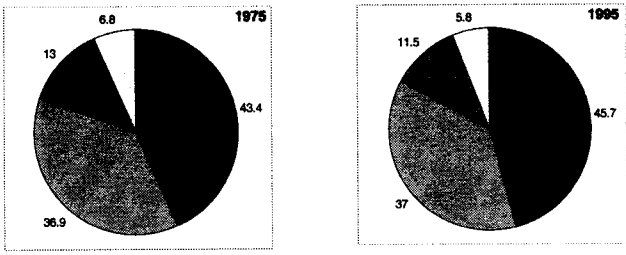
Bosnia and Herzegovina



Croatia



Greece



Italy

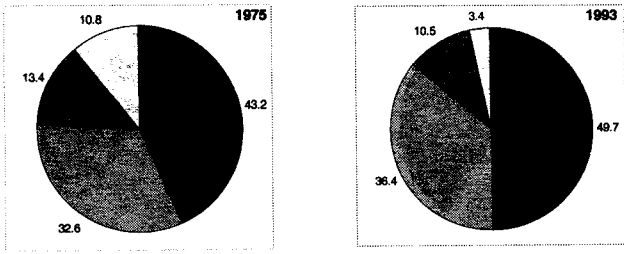
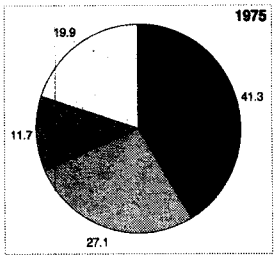
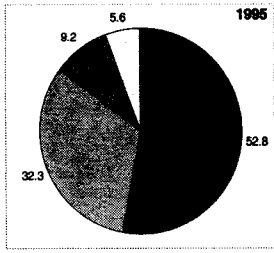


Figure VI *(continued)*

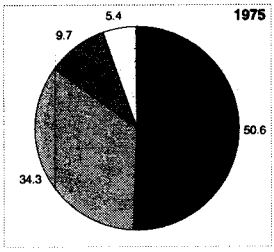
Southern Europe

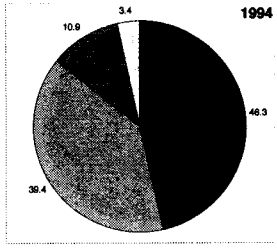
Portugal



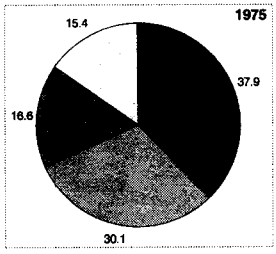


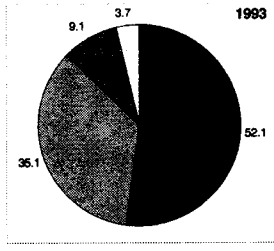
Slovenia



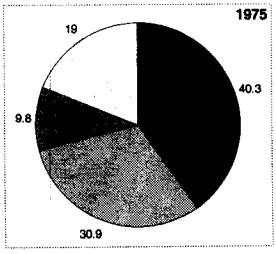


Spain





Yugoslavia



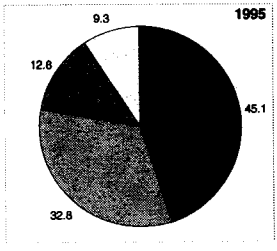
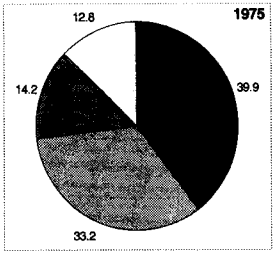
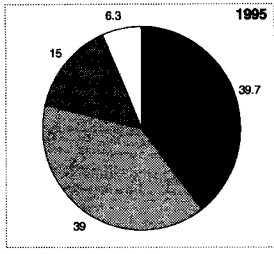


Figure VI *(continued)*

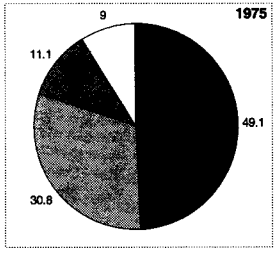
Western Europe

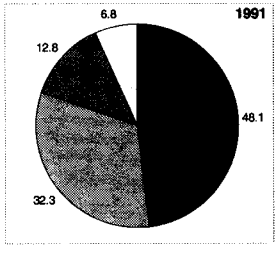
Austria



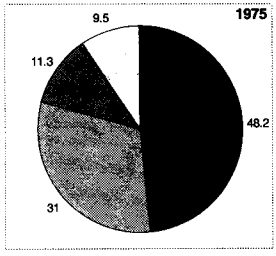


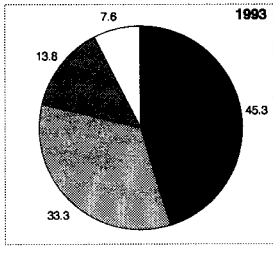
Belgium



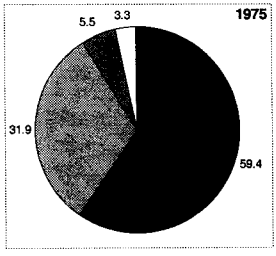


France





German Democratic Republic



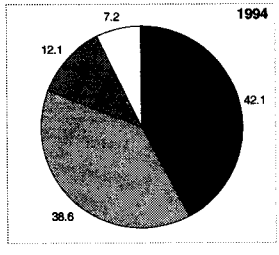
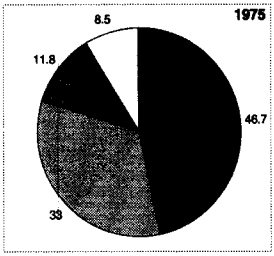
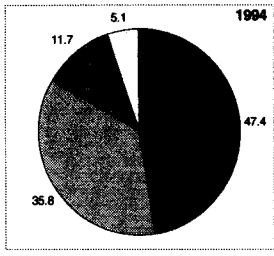


Figure VI *(continued)*

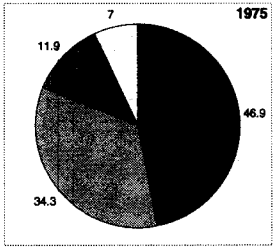
Western Europe

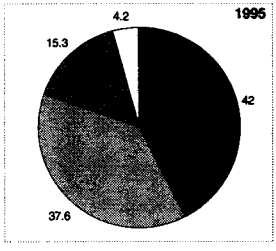
Germany, Federal Republic of



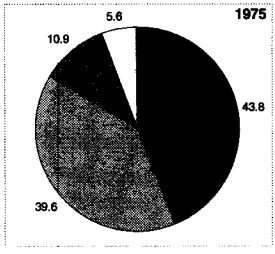


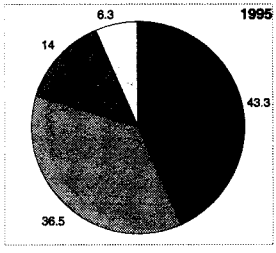
Luxembourg



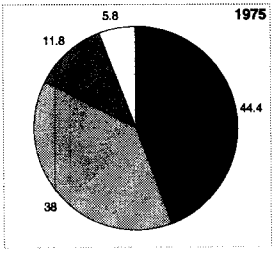


Netherlands





Switzerland



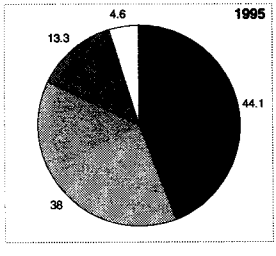
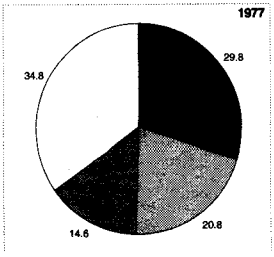
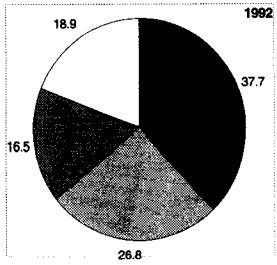


Figure VI *(continued)*

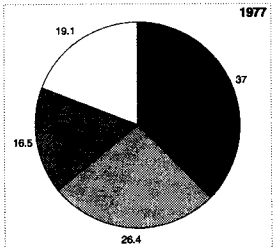
Latin America & the Caribbean

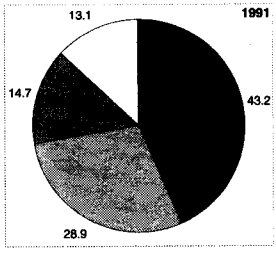
Bahamas



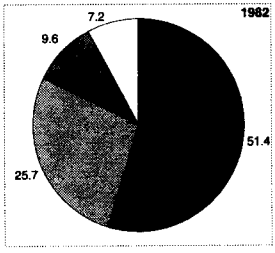


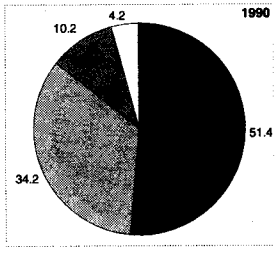
Barbados



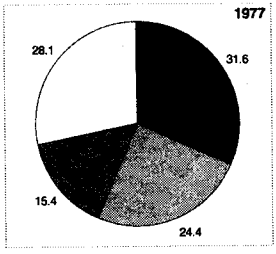


Cuba





Trinidad and Tobago



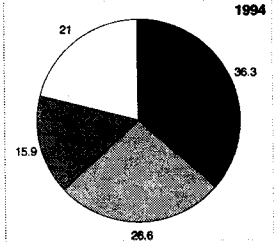
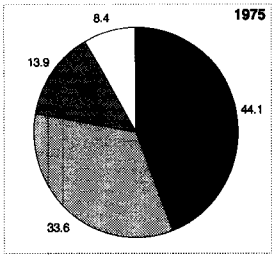
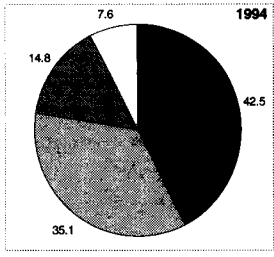


Figure VI *(continued)*

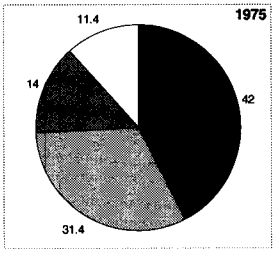
North America & Oceania

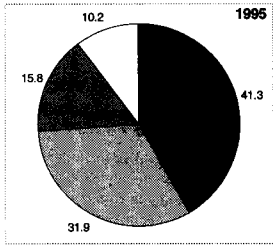
Canada



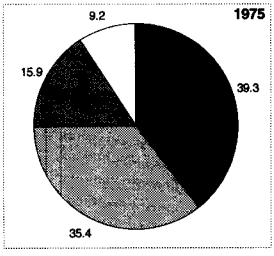


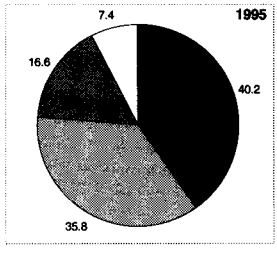
United States of America



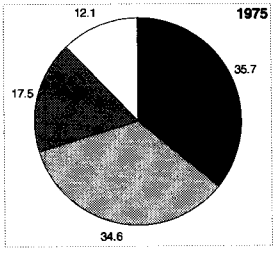


Australia





New Zealand



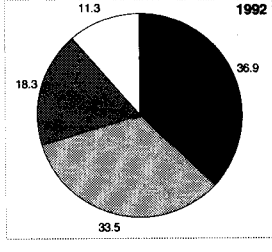


TABLE 16. DIRECTION OF CHANGE OF PERCENTAGE BIRTHS OF FIRST AND SUBSEQUENT ORDERS: 1975-1995

Country or area	*Birth order*			
	First	*Second*	*Third*	*Fourth or higher*
Asia				
Eastern Asia				
China	+	+	-[a]	
Hong Kong	+	+	-	-
Japan	+	-	+	+
Macau	+	+	-	-
Rep. of Korea	+	+	-	-
South-eastern Asia				
Singapore	+	+	+	-
Western Asia				
Armenia	+	+	-	-
Cyprus	-	+	+	+
Georgia	+	+	-	-
Europe				
Eastern Europe				
Belarus	+	-	-	-
Bulgaria	+	-	-	-
Czech Republic	+	-	-	+
Hungary	-	-	+	+
Rep. of Moldova	+	+	+	-
Poland	-	-	+	+
Romania	+	-	-	-
Russian Federation	+	-	0	-
Slovakia	+	-	-	-
Ukraine	+	-	-	-
Northern Europe				
Denmark	+	0	-	-
Estonia	+	-	+	+
Finland	-	+	+	+
Iceland	-	+	+	-
Ireland	+	+	+	-
Latvia	+	-	+	+
Lithuania	+	+	-	-
Norway	-	+	+	-
Sweden	-	-	+	+
United Kingdom	-	-	+	+
Southern Europe				
Bosnia and Herzegovina	-	+	-	-

Country or area	Birth order			
	First	Second	Third	Fourth or higher
Croatia	-	+	+	0
Greece	+	+	-	-
Italy	+	+	-	-
Portugal	+	+	-	-
Slovenia	-	+	+	-
Spain	+	+	-	-
Yugoslavia	+	+	+	-
Western Europe				
Austria	-	+	+	-
Belgium	-	+	+	-
France	-	+	+	-
German Dem. Rep.	-	+	+	+
Germany, Fed. Rep. of	+	+	-	-
Germany	..	..	..	..
Luxembourg	-	+	+	-
Netherlands	-	-	+	+
Switzerland	-	0	+	-
Latin America and the Caribbean				
Caribbean				
Bahamas	+	+	+	-
Barbados	+	+	-	-
Cuba	0	+	+	-
Trinidad and Tobago	+	+	+	-
Northern America				
Canada	-	+	+	-
United States of America	-	+	+	-
Oceania				
Australia	+	+	+	-
New Zealand	+	-	+	-

NOTE: A minus sign (-) indicates a decline; a plus sign (+) indicates an increase; zero (0) indicates no change.

Two dots (..) indicate that data are not available.

[a]Third or higher order births.

Source: Table 15.

In a majority of the countries in Europe, the proportion of fourth and higher order births has been reduced, and except in Poland, Romania and Ireland the proportion of such births is below 10 per cent in 1995. There has been a marked rise in the proportion of first order births in Eastern Europe, excepting Hungary and Poland, which experienced a slight decline in the proportion of

such births. On the whole, first order births in Eastern Europe comprise at least two fifths of the total births in 1995. In the Russian Federation, close to 60 per cent of the total births are first order births.

Out of 10 countries in Northern Europe, half experienced a rise in the proportion of first order births, while the other half experienced a decline. Overall, at least one third of the total births belong to the first order births, and in Estonia, Latvia and Lithuania over half of the total births belong to the first order births.

Similarly, five out of eight countries in Southern Europe exhibited a rise in the proportion of first order births, and by contrast almost all countries in Western Europe, except the former Federal Republic of Germany, showed a small drop in the proportion of such births. However, in these countries first order births still represent at least two fifths of the total births in 1995.

Although there has been a decline in the fourth and higher order births in the Caribbean between 1975 and 1995, the proportion of such births is fairly large in the Bahamas, Barbados and Trinidad and Tobago. The proportion of first order births has increased in the Bahamas, Barbados and Trinidad and Tobago, while it has remained unchanged in Cuba.

Likewise, Canada and the United States of America in Northern America and Australia and New Zealand in Oceania exhibited a decrease in the proportion of fourth and higher order births. Canada and the United States of America exhibited some decline in the proportion of first order births, while Australia and New Zealand experienced an increase in the proportion of such births.

SUMMARY AND CONCLUSIONS

This report examines the levels and trends of fertility in low fertility countries over the past 21 years, from 1975 to 1996 or the most recent year for which the data were available. In all the countries in Europe, except Ireland, the total fertility rate was far below 3 children per woman in 1975. It is, however, to be noted that in Western Europe and Northern Europe (with notable exceptions) the total fertility rate was below replacement level in that year. Outside Europe, the total fertility rate was below replacement level in Canada, Japan and the United States of America and slightly above replacement level in Australia and New Zealand. It was only in Cuba and Cyprus in the developing world, that the total fertility rate was below replacement level in that year.

Over the past 21 years, an overwhelming majority of these low fertility countries continued to experience fertility declines, with the result that in a number of countries the total fertility rate has been reduced to below the 1.5 mark in the recent year. It is noteworthy that the lowest fertility, between 1.2 and 1.3, has been recorded in Bulgaria, the Czech Republic, Estonia, Germany, Hong Kong, Italy, Latvia, Romania, Slovenia and Spain. On the other hand, five countries, namely Cuba, Cyprus, Finland, Luxembourg and the United States of America exhibited some rise in total fertility during this period. It is also interesting to note that in some countries fertility fluctuated during this period; particularly in Northern Europe and Western Europe, fertility declined

between 1975 and 1985 and went up in 1990, and it then slightly declined and levelled off.

The trend in fertility examined by using period measure is, however, based on the reproductive performance of a hypothetical cohort of women who experienced over their lifetime the age-specific fertility rates observed in a particular population at a particular time. As noted earlier, since this measure is influenced by changes in age at marriage and age at childbearing, it may not represent the actual fertility situation of a given population. In such circumstances, the cohort fertility measure most likely presents a realistic fertility condition of a given country.

Hence, this report also examined the cohort total fertility rate of women in selected European countries born in 1945, 1950, 1955 and 1960. It was revealed that in a majority of these countries the total fertility rate of the 1945 cohort was already at or below replacement level. Unlike the period total fertility rates, there has been very little fluctuation in the total fertility rates of women born between the 1945 and 1960 cohorts. A steady decline in the total fertility rate of women born between the 1945 and 1960 cohorts was observed in many of these countries. However, some countries, such as Greece, Spain and Romania, exhibited a marked decline in cohort fertility, while in some other countries, fertility remained relatively stable.

The period fertility decline occurred in all the age groups and the greatest reductions have been at ages 35 years and above. Adolescent fertility (15-19 years of age) has also been substantially reduced, especially in Western Europe. However, some Eastern European countries experienced a significant rise in fertility in this age group. With regard to the age pattern of fertility, in a majority of countries, except in Eastern Europe, highest fertility was found in the 25-29 age groups, while Eastern European countries invariably exhibited a peak fertility in the 20-24 age group. Teenage fertility, in general, was found to be relatively high in the Caribbean region as compared to other regions, except in Eastern Europe.

This study also found that there was a tendency towards a shift in the later childbearing pattern. An overwhelming majority of countries have revealed a rise in the mean age at childbearing. All the countries in Western Europe and a majority of the countries in Northern and Southern Europe exhibited a rise in the mean age at childbearing, while among the countries in Eastern Europe, only the Czech Republic, Hungary and Poland showed a rise in the mean age at childbearing. Similar rise in the mean age at childbearing was also observed in Australia, Canada, New Zealand and the United States of America and all the countries in the Caribbean (except Trinidad and Tobago). By contrast, only four countries or areas (Armenia, Hong Kong, Japan, Singapore) out of nine in Asia experienced an increase in the mean age at childbearing.

Changes in the annual number births have also been studied in this report. It was found that out of 54 countries listed in this study, a total of 44 countries experienced a decline in annual number of births between 1975 and 1995. Of these countries, 19 countries had a decline of 30 per cent or more in the annual number of births. It is important to note that the countries with a larger

percentage decline in the annual number of births had shown a faster decline in their total fertility during this period.

There has been a sharp reduction in the proportion of higher order births; with the exception of some countries, the proportion of fourth and higher order births now constitutes less than 10 per cent of the total births. Consequently, there has been a marked rise in the proportion of first order births. In almost all countries, first order births comprise at least 40 per cent of the total births. It is noteworthy that in China two thirds of the total births are first order births.

As shown earlier, despite the low fertility that prevailed in 1975, a majority of countries continued to experience a significant drop in fertility over the past 21 years. This conforms to the result of the historical fertility transition in Europe which showed that once the fertility transition begins, further declines follow almost invariably (Coale and Watkins, 1986; Kirk, 1996; Knodel and van de Walle, 1979; Bongaarts and Watkins, 1996). It is, however, important to note that the fall in fertility over the past 21 years is by no means consistent in all the countries; some countries exhibited a precipitous drop, while others experienced fluctuations in fertility levels. It is, therefore, pertinent to examine such unique trends in fertility occurring in some countries and explain the causes of such trends. In some cases, government policy may significantly affect the trends in fertility, while in others economic and social changes may be equally important.

An interesting case is China, in which the government policy played a major role in the decline of fertility. There was an unprecedented drop in fertility from 3.6 in 1975 to 2.3 in 1980 after the Chinese Government launched a comprehensive and strong family planning programme during the late 1970s. As the rigid antenatal policies were relaxed, fertility fluctuated around 2.2 and 2.3 during the following decade. There has recently been a precipitous drop in fertility to below replacement level after the Chinese Government returned to the old policy (Kirk, 1996). As a result of this policy, the percentage of ever-married women who were currently using contraception increased sharply to 85 per cent in 1992, up from 71 per cent in 1988 (Chen and others, 1997). Along with the initiation of the centralized family planning programme that was designed to reduce fertility of Chinese women, there were other major social and cultural transformations taking place in China, which speeded up the decline (Zhan, 1997). Hence, the fertility transition in China, in particular the speed with which the decline occurred is strikingly different from the fertility transition that took place in Europe and North America.

The role of political influence in the reduction of fertility has been revealed in the Republic of Korea, where an effective programme designed to provide knowledge and access to family planning led to a precipitous fall in the total fertility rate of 1.6 in 1990, down from 3.2 in 1975 (Kirk, 1996). In the case of Japan, fertility remained almost constant at near replacement level between 1957 and 1973; it began to decline since 1973 and plummeted to 1.5 in 1990. This resumption of fertility decline in Japan was primarily driven by underlying economic and social changes (Retherford, Ogawa and Sakamoto, 1996). The Government of Japan is now very much concerned with this low fertility, and is taking measures to lower age at marriage and increase fertility. The

Government has recently announced a five-year economic plan and called for a substantial reduction in the long working hours of men. It, however, remains to be seen how effectively this new policy will be implemented (Retherford, Ogawa and Sakamoto, 1996). In Singapore, the pronatalist policy adopted by the Government has led to a levelling off in the total fertility rate at 1.8 (Kirk, 1996). In Hong Kong, Japan and the Republic of Korea too, fertility seems to have reached a plateau.

Among the European countries, Sweden has undergone an unique experience in the fertility trends during the past 60 years. Sweden's fertility had reached a low level of 1.7 in 1935, which was among the lowest in the world at the time. Fertility increased over the subsequent decade and fluctuated just above the replacement level until the mid-1960s (Hoem and Hoem, 1996). As a result of the introduction of the modern contraception, the total fertility rate then declined to 1.6 in 1978. During the second half of the 1980s, Sweden's fertility level increased dramatically and reached 2.1 in 1990. The rise in fertility in 1990 was primarily due to the income effect, because economic trends were very favourable and private incomes improved rapidly throughout the rest of the 1980s and there was a strong belief in the general population that things could only continue to improve. Since the 1990s the economic orientation has become quite problematic for many families and unemployment was hard hit, particularly at young ages and for people employed in the public sector. As a result of this economic problem, the total fertility rate in Sweden began to fall and reached a lowest level of 1.6 in 1996. With regard to the future prospect, Hoem and Hoem (1996) contend that it is uncertain whether the Swedish women (or men) would give up parenthood or that they would choose to have a single child and devote themselves to their job careers. The Swedish Family Survey of 1992, however, indicated that even at age 33, half of the women who were childless expected to become mothers at some time and another 28 per cent viewed that they perhaps might become mothers. The economic and social conditions may also play a decisive role in changing the realization of family values and childbearing behaviour in shaping up the future fertility trends.

It is also noteworthy that in Western Europe, after the total fertility rate had reached the lowest level in 1985, it has reached a plateau in Austria, France, the Netherlands and Switzerland or has gone up in Belgium and Luxembourg. In Northern and Southern Europe, the total fertility rate appears to have more or less stabilized, while in Eastern Europe it is still continuing to fall. In Australia, Canada and New Zealand fertility has levelled off since the 1990s.

In some European countries, low level of fertility has already resulted in the zero population growth, or there has even been the beginning of population decline, though in some cases the effects have been weakened by immigration. Very low and constant fertility prevailing in many of those low fertility countries has become a serious concern not only that there is a fear of depopulation but also its implications on the social and economic burden of supporting the elderly population. According to Dudley Kirk:

> ...the present level of fertility in Europe, below and in some cases well below replacement level, is an over-correction that will be

modified. As children become scarcer their value rises, both economically and psychologically. There is already mounting concern about the ageing of the population which is a result of low birth rates. It can be expected that public attitudes and governmental actions will give expression to this view in pronatalist measure. To me it is surprising that so little has been published on this topic in Western Europe, except in France. In Western areas of low fertility we are moving into post-transition era, where the old guidelines are no longer appropriate, an era in which much more attention will have to be given to raising fertility, rather than to lower it (Kirk, 1996: 387).

NOTES

[1]The average number of children that would be born per woman if all women lived to the end of their reproductive years and bore children, according to the current age patterns of fertility.

[2]The total fertility rate for unified Germany is available only from the year 1992. Hence, prior to that year the total fertility rates and other indicators are presented separately for the former German Democratic Republic and the former Federal Republic of Germany.

[3]The data on time trend in the mean age of women at first birth are available only for selected European countries.

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DETERMINANTS OF BELOW-REPLACEMENT FERTILITY

Jean-Claude Chesnais*

In soft as well as in hard science, the retrospective validity of prediction is the strongest test of knowledge. Since the end of the 1960s, barring a few cases in sub-Saharan Africa and the Middle East (which represent hardly 5 per cent of the world population), fertility is declining all over the planet. The baby-bust which, at the very beginning, was considered a United States, then a western phenomenon, is gradually becoming a global fact. In some cases, the process is still very recent and it is difficult to imagine the future and *a fortiori* to announce a convergence towards the lowest levels ever experienced in leading countries; in other regions, especially in North-western Europe, cohort fertility has been below (and usually much below) replacement for many decades, often since the beginning of this century (Sardon, 1990). Among the 5.8 billion inhabitants of the earth in 1997, 1.6 billion live in countries (or provinces) where fertility is largely under replacement; this fraction comprises Europe, Northern America, the former Soviet Union, Japan, coastal China, Thailand, the Republic of Korea, Argentina etc. Approximately the same population (1.5 billion) is located in countries where fertility is now falling close to the replacement threshold (total fertility rate below 2.5 children per woman); this second group includes the rest of China, part of India (mainly in the South), Java in Indonesia, Turkey etc. Thus, if the slide of fertility continues steadily, *by the year 2000, the majority of the world population could live in low fertility societies, with TFR ranging from 1 to 2 children* as an average per woman.

Who has announced such a scenario? Nobody. The process of demographic transition is progressing further and faster than in the minds of experts; it is widening and deepening, to a much larger degree than commonly expected. As in other spheres of international life, there seem to be powerful globalizing forces at work, pushing towards fertility reduction. The post-transitional fertility regime also brings surprising findings: the fertility decline does not stop its fall, magically, around 2.1 children per woman (equilibrium) but tends to stabilize between a wide spectrum of values, going from 0.8-0.9 (former East Germany, northern regions of Italy and Spain) to 1.7-1.8 (Scandinavia, United Kingdom); neither does it follow mathematically predictable swings, like regular cycles. Again, nobody was able to forecast explicitly this massive shift,

*Institut national d'études démographiques, Paris.

particularly the inversion of the fertility map between the north and the south of Europe. Among the fathers of the demographic transition theory, only one, Adolphe Landry (1933, 1934), imagined that the post-transitional stage could be characterized by a permanent disequilibrium, with an "effective depopulation". If the intuition is unique, the formulation is, however, rather vague.

In such circumstances, any demographer has to keep a low profile. Whatever the attempt to rebuild this puzzling past, he should remain modest, open and flexible in order to embrace a growing variety of realities.

The following paper is an attempt to list possible determinants of below-replacement fertility. It will divide these factors into three groups: (*a*) the classical ingredients of demographic modernization; (*b*) recent changes leading to post-modernity and baby-bust; and (*c*) emerging and reversible causes of fertility change. For the sake of simplicity, this text is conceived as a framework for debate, and each category will incorporate a small number of items, limited to five. This analytical presentation will artificially isolate factors that are in fact intertwined.

THE CLASSICAL INGREDIENTS OF DEMOGRAPHIC MODERNIZATION

1. *The rise in life expectancy*

In most advanced societies, the average life-span has doubled or trebled over the last two centuries. In traditional settings, only a thin minority of people (about 1/10) could reach the age of 60; now, the proportion is 9/10. In the past, mortality was particularly high at youngest ages, but it could strike at any age and the impact of epidemics, diseases, malnutrition, famine, strokes was devastating. Humans were fragile and hence, passive, fatalist, unable to believe that they could shape their own destiny without God's hand. With the eradication of premature mortality, the path was henceforth long, and their fate became a personal choice.

Between the 1950-1955 period and the 1990-1995 period, the *difference* in life expectancy at birth between the "more developed" world and the "less developed" world has been reduced by half, from 25 to 12 years (in 1997, the average life expectancy is about 75 and 63 years respectively). If we exempt countries that are subject to war or political troubles, the incidence of infant and youth mortality has dropped. Even in India, the mortality risk for girls before the mean childbearing age has fallen by more than two thirds since the time of independence (1947), from 50 to 15 per cent since most children survive to adulthood, there is less need of large families to perpetuate lineage continuity. Recent vaccination, water sewage, or sanitation programmes launched by international bodies or local authorities tend to reduce mortality further, even in a context of massive poverty and sometimes of aggravating income distribution. Such a change in life prospects brings about a limitation in child demand: what really matters for potential parents is the number of surviving offspring. Mortality before normal old age has become so rare in affluent societies that many individuals are affected by the eternity syndrome; they forget that they are mortals, and following a widespread fashion, they deny the impact of age.

2. *The new anti-natalist technologies*

Since the end of the 1950s, birth control has been the major field of application of new biotechnologies. Important discoveries were realized on all—but mostly female—facets of the reproductive life: contraception, contragestion (RU 486), abortion, sterilization. The first breakthrough was made in 1956 by Dr. Pincus who invented the chemical contraceptive (oral pill). This has had a tremendous impact on sexual behaviour and on family planning effectiveness. Never before, could sexual activity be enjoyed for pleasure itself without the risk of unwanted pregnancy, and one consequence was the sexual revolution, which began in the 1960s. Now, couples can spend years together and have regular intercourse without running the risk of childbearing; if they want to become parents, they have to decide to change their lifestyle. The sequence of certain decisions is inverted. In traditional marriages, people got children spontaneously in their first years of union and then did their best to avoid additional births; in present unions, they stop hedonist sex for reproductive intercourse. Procreation belongs to the sphere of calculation. Medical progress concerning safe abortion (Karman or aspiration method) or sterilization (for both women and men) reinforced this change in public attitudes. Sooner or later, the State had to adjust: laws were revised in order to offer free choice to couples. Contraception/abortion/sterilization have been legalized in most western and some non-western societies, thus paving a new way, alleviating moral constraints (or mental barriers): what is legal cannot be committed with the same sense of sin.

3. *The urbanization and densification process*

With the tremendous increase in agricultural productivity (in France, for example, the wheat yield went up sixfold during the twentieth century, from 12 quintals per hectare to 75 quintals per hectare), man has to leave the countryside. Thus the population tends to abandon vast lands to cluster in boroughs, cities and large metropolitan areas. Such a transformation has a deep social meaning: it is basically a civilizational change, from an agro-pastoral way of life (open spaces, natural rhythms) to an urban universe. The former rural citizen is bounded by new limits in the urban environment: space (housing) is rare and expensive; time is uniform, rigid (e.g., office hours); private and professional lives are disconnected. As a consequence, the notion of reproduction loses its holistic sense (total replication of the previous order: profession, location etc.) to focus on biological aspects. Urbanization means deruralization, detraditionalization and transition from the logic of group (tribe, village, lineage) to the logic of a couple. The classic vision, centred on social pressure, tends to recede in favour of a more individualist approach based on free personal choice, with more accent on rights than on duties. The anonymity of big human settlements offers new opportunities to escape from ancestral mores and innovate, mainly in the realm of privacy (celibacy, informal union, childless marriage, one-child family etc.). The formal social control vanishes with the physical distance between generations and the splitting of childhood connections.

4. *The elimination of illiteracy*

At the beginning of the present century, only a very small share of the world population was able to read and write. These happy few were members of the aristocracy, the priestly/scholarly classes or the urban bourgeoisie of the West (or Japan), and most of them were males. In one century, particularly after the Second World War, the picture radically changed. Now, among new generations of childbearing age born since the 1970s, even for females of the poorest societies, illiteracy is diminishing gradually and becoming limited to a minority. This shift has a tremendous impact on girls' lives: arranged and early marriage is incompatible with women's emancipation and educational performance. The same is true for large families. This is the case in large parts of Asia or the Middle East. Access to education also implies a mental opening to information and innovation: literate women have a greater capacity to enter the labour market (giving them financial autonomy) and to manage their personal and professional destiny (freedom of choice). Unplanned births are rare among them, not only because they have more chance to obtain the knowledge and social network that would enable them to avoid what they feel undesirable, but also because such a situation would create violent conflict in their daily life and threaten their wish to find a balance between their roles of partner, mother and professional.

5. *The Fisher law or the change in professional composition*

Barring England, all societies were predominantly peasant societies, until the inter-war period. Technical progress was largely absent. The son or daughter had to acquire limited but strict knowledge from their father and mother; they had to apply it throughout their entire life cycle. This knowledge can be labelled "tradition". It was diffused through folklore and transmitted orally by the elderly. Experience and wisdom were sacred. In modern societies, by contrast, the opposite is true. Tradition is considered as a negation of modernity and is thus viewed as old-fashioned. People in the labour force are either employees or workers who perform tasks that have nothing in common with their ancestors' professional activities. The former world is commonly perceived as irrelevant, even if it has a stronger objective contact with nature, animals and reproductive behaviour. If we put aside its idealized green version (neo-ecologism), it is rejected as a vector of conservatism. Lessons which could be drawn from ancient times are currently left to disdain; the speed of renewal of the job structure confirms this impression of the futility of history. Instability becomes a key value, difficult to combine with an irreversible choice like having a child.

Each of these aforementioned five factors is not new, but has been characteristic of the present century—and sometimes of the nineteenth century—in the "more developed" parts of the world, and of the last five or six decades in the rest, i.e., the "developing regions". As usual, the pace of change was faster among imitators (the "rest") than among innovators (the "west"). The fertility transition period tends to shorten with time.

RECENT CHANGES LEADING TO POST-MODERNITY AND BABY-BUST

New factors have appeared since the initial formulation of the theory of the demographic transition (Landry, 1933, 1934; Notestein, 1945, 1953). All of them converge to further depress the fertility level. For the purpose of analysis, let us select five major ones: (1) social atomization and related feminism; (2) implementation of collectivized pension benefits; (3) globalized nomadism; (4) youth loss of majority; and (5) the "end of work" syndrome.

1. *Social atomization and related feminism*

In the most advanced societies of the world, defined by high income and, above all, by an exceptional degree of educational achievement, most members of younger birth cohorts reach the university level. They have lived in a sophisticated universe of objects and symbols (films, songs, videotapes, clothes, toys, computers etc.), permanently stimulated by commercial publicity. The human condition is marching towards one extreme degree of "individuation": individuals are transforming and increasingly being differentiated by their tastes, habits, mores and lifestyles. This sophistication process is an obstacle to couple formation and mating: how to find an ideal—a cooperative—partner when requirements are so demanding? This is especially true for women of prosperity. In many countries, younger women have better school performance than their male counterparts, and since they have, through the contraceptive revolution, complete reproductive freedom in their own hands (abortion can be practiced without informing the father), for the first time in human history, they can control their own destiny. They have their own independent identity, no longer based on marriage, family and husband status, but only on their personal achievement. Even in peaceful and affluent societies, the idea of "couple" is sometimes felt as a limitation of one's freedom and marriage as a trap. New generations of women born since the 1960s are quite different from their mothers who did not question the institution of marriage: in their time, marriage in their minds was the unique road to happiness, adult status and freedom from parental influence. In recent generations, women are frequently prone to delay and often definitely refuse a marriage which could send them back to a dependent and inferior condition of housewife, tied to a man who often has objectively less education. This process of individuation works against all forms of association or union and encourages the phenomenon of loneliness; a rapidly growing share of households, mostly in big cities, are one-person households by choice (celibacy, divorce) with a clear female predominance. Young women are more and more reluctant to engage, preferring to keep their independence in terms of time and money. The proportion of single women in the age group 25-29 is reaching unprecedented levels. As some family sociologists argue, the new generations prefer shopping or travelling to marriage, union, childbearing and more generally to domestic life.

2. *The implementation of collectivized pension benefits*

Modern pension benefits paid through welfare programmes either from funding or from pay-as-you-go systems are very recent historical innovations. Since time immemorial, people's insurance for old age was provided by their

own offspring who could protect them against all kinds of risks (violence, sickness, incapacity, poverty, food safety etc.). The installation of social security schemes and their progressive democratization has erased this insurance reflex. Under prevailing circumstances, the economic interest of any individual—whether female or male—is to maximize the professional career (production) to the detriment of personal accomplishment (reproduction). The argument is still stronger for women, since the number of children they raise is not taken into consideration in the computation of their pension amount. If they have made the choice to devote their life to a career and to have no children, they are entitled to full pensions; conversely, if they have decided to have a large family and have reduced (or even given up) professional activity, they do not receive a compensation—in the form of a personal benefit—for their contribution to the production of future taxpayers and contributors to the Welfare State. In other words, large families are financially penalized by the existing rules. They raise human capital, which is then used by industry and, collectively by society, without real economic rewards. Contrary to the past, contemporary highly urbanized societies discourage child raising: fertility and old age security are negatively correlated.

3. *Globalized nomadism*

Until the recent generalization of airplane travels, following the railway and car revolution, everybody was attached to a narrow territory, usually a hamlet, a village or a small city. If we except merchants, seamen or other rare members of given professions, nobody had seen another place in his entire lifetime. We are entering a new era in which distance becomes meaningless, and borders are contested in favour of transnational entities like the European Union, the North American Free Trade Association (NAFTA), the Association of South-East Asian Nations (ASEAN) etc. Thanks to television and new media, everybody gets information and messages from all over the planet. Tourism is growing so fast it will soon be one of the greatest industries of the future. Paid leave as well as high retirement benefits have appeared on a massive scale only in the west and during the last decades; they were the engines of exotic, long-distance migrations. This universalist culture is based on the cult of mobility and liberty. It complicates the classical vision of identity and is not easily compatible with pregnancy or child-rearing. It is part of the emerging cultural puzzle: unlimited expectations, endless curiosity, permanent demand for innovation and originality, constant pressure on time. In that new mental fabric, where the couple is shaky and the individual more self-centred, the lonely child (and sometimes childlessness) is becoming a social norm.

The notion of "reproduction" or replacement is sliding towards the single child considered as one's image and property, and not as the product of a couple. New medical technologies facilitating artificial procreation push towards the same movement of discontinuity and lack of family memory.

4. *The youth loss of majority*

For the first time since the industrial revolution, it is frequently assumed that future generations will earn less than their parents. Contrary to the common Malthusian belief, depleted birth cohorts do not appear to yield current generations a brighter future than their parents born during the baby boom. The age pyramid is progressively reversing: the number of children and young adults falls, while the number of seniors and pensioners increases. The squeeze is usually around the age of 50: under that limit, the population diminishes; above that limit, it grows rapidly. In other words, people of reproductive age represent a declining share of the electorate and their demographic contraction is aggravated by their economic weakness; their relative economic status steadily deteriorates (Preston, 1984): they have a shrinking share of the pie and can then be neglected by policy makers. In a pluralistic democracy, politicians prefer surfing on the waves than risk-taking with people losing ground; they favour the grey power (Bourcier de Carbon, 1995).

5. *The end of work syndrome*

Since the very beginning of technical progress and mechanization, there has been a deeply-rooted fear of "technological unemployment". Such a fear gained ground with the third industrial revolution (automation, computerization); some authors have even predicted the emergence of a labour-less society, or "the end of work" (Rifkin, 1995). This widespread view generates a pessimist view about the future. To decide to have a child is thus implicitly considered as an irresponsible choice because this child would have no chance to get a job and consequently would become marginal, or a burden for his parents and society as a whole. The reality is, however, much more complex: innovation means productivity gains, increasing purchasing power, rise of new demands and trickle-down effects. But perception matters more than facts, and the idea of the machine replacing the man, making him obsolete and useless, has a devastating effect on the desired number of children.

In the present context of globalization and the fierce competition between economics and systems of all continents, full employment seems to be a Utopia, even in nations experiencing demographic stagnation or recession. The political alternative is a difficult one, between deregulation and lower wages along the Anglo-Saxon lines, on the one hand, and massive structural unemployment (especially among youth) as in continental Europe on the other hand. The cost of labour, reinforced by the incidence of population ageing, puts a heavy pressure on competitiveness. This argument on perceived labour scarcity is coming on top of the rationalization process of social and sexual life described by German authors like Max Weber or Julius Wolf (1912).

AN OPEN FUTURE: SOME REVERSIBLE FACTORS

The future is not written. Fertility behaviour in developed countries has regularly taken demographers by surprise since the 1940s. Many factors of the secular fertility decline are likely irreversible; others are not. That is why it would be unwise to extrapolate indefinitely the present situation or recent

trends into the future. A further decline is possible as well an upturn, depending on the circumstances that this future will bring. Among potential factors of the return to demographic equilibrium, we can identify five elements: (1) the latent demand for family policy; (2) the decapitalization mechanism and its consequences for the relative status of the youth; (3) reforms of the Welfare State; (4) the shift to post-materialistic values; (5) the end of pessimism and the revival of hope.

1. *The latent demand for family policy*

The gap between the desired number of children and the effective number is considered as a latent demand for public policy, usually for family planning. In many developing countries, the average family size is higher than the ideal size as shown by surveys. The same principle can be applied to the symmetrical case in below-replacement societies. According to Eurobarometer, for example, the majority (between one half and two thirds) of young couples declare that they have a preference for a two-child family; the second choice is the three-child family, whereas the only child, the childless, or large family ideal is marginal. If we calculate the corresponding average ideal family size, we find that it is around two, sometimes a bit below, sometimes a bit above the replacement level; but the observed total fertility rate for the European Union is only 1.4. The difference between the number of children European women have and the number they would like is around 0.6 child per woman (or 6 children per 10 women); this is a measure of the margin for action. In countries where the family policy is virtually non-existent (absence of family allowances, tax rebates, lack of crèches, flexitime, paid parental leave etc.), as in Italy, the discrepancy is maximal: 1 child per woman, instead of 0.6 for all Europe. The reasons for fertility differences between similar countries are mainly linked to the mother's living conditions (Chesnais, 1996). If an institutional adjustment is made, the number of missing births will lessen.

2. *The decapitalization mechanism and the improvement of the relative status of the youth*

In the demographic literature, there are extensive developments on the alleged final stabilization of the population after the demographic transition. But this assumption is shaky; there is no evidence to confirm the argument. Long-range fertility swings under the replacement level have to be envisaged among the coming perspectives. Such a scenario could be partly due to long-term fluctuations affecting the value of assets and of the capital stock.

The so-called "supply" and "demand" are not mysterious or magic variables as shown in manuals of economic theory; they have a concrete human and demographic basis. When the young segment of the population shrinks, as in the case of contemporary Japan, domestic demand for housing and other equipment falls. The corresponding price of capital (houses, flats, land etc.) drops. After the bulge, the crack: the case of Tokyo in 1990 is a vivid illustration of this fragility of wealth. If the number of owners (usually seniors) increases disproportionately as compared to the number of potential buyers, the value of property can fall drastically. Such a point has not yet been reached, but

historical cases (fourteenth century Europe) can be used to show the impact of demographic collapse on the value of land and capital. After a long phase of increasing density and prosperity, a sudden population fall has a depressive impact on the value of capital and on investment. But this movement of lowering prices creates an incentive to buy among younger birth cohorts and hence can help them to build a family.

3. *The reforms of the welfare system*

The debate on the role of the State is just beginning. Since the end of the nineteenth century, the share of public expenditures in total GDP has increased steadily all over the industrial world. In many countries of Europe, government spending is so heavy that it represents half of the GDP (Germany, Netherlands) and sometimes more (Italy, France: 53 and 55 per cent, respectively) up to 65 per cent (Sweden). The question is to compare the efficiency of the public relative to the private initiative, sector by sector. But the creation of a borderless market implies a convergence of taxation systems. The fiscal pressure will likely be reduced in order to face global economic competition: the public debt is too high and too costly. The financial challenge of an ageing population could be solved by cutting the retirement benefits. A few countries have already prepared such long-term plans. There is a growing awareness of the adverse impact of ageing among the political leaders: the topic was on the agenda of the latest G7 Summit in Denver (1997). It means that a fear of collapse of the welfare system could release the fiscal pressure on the cost of labour and thus ease the comfort of young working couples; intergenerational transfers have sucked their gains in available income for about two decades. In a great number of countries, the standard of living of pensioners is higher than that of workers. This inequality is counter-productive and anti-natalist.

4. *The shift to post-materialistic values*

If this point is largely open to debate and speculation, it is however a crucial matter. The second half of this century experienced the decline of puritanism and the victory of materialism (hedonism, cult of consumption, American way of life). The coming century could stress the limits of this model. In the world economy and world politics, Asia will find a place more suited to its demographic weight (three fifths inhabitants). Western civilization has imposed its values. In the older civilizations of India, China or Japan, a new search for identity is germinating, and the western culture is contested. We seem to be on the way from a culture of conformity (on the United States model) to a culture of diversity. We live in a paradox of growing interconnection and increasing desire of individual autonomy (self-affirmation). There is a mounting resistance to cross-fertilization—in practice, absorption—by the dominant culture; the pressure for universalism generates an opposite force. The political face of that phenomenon is the splitting of former empires or States into smaller entities. Devolution is preferable to division. Examples abound in Europe: there are tensions in Belgium, Italy, the United Kingdom and elsewhere. The question is whether this cocooning phenomenon will have any effect on fertility. It would probably depend on the dynamics of co-factors.

5. *The end of pessimism and the revival of hope*

A rebound of fertility would likely need a deep change in mood. If it is seen in perspective, the post-war fertility recovery in the allied countries of the West resembles a historical parenthesis which could have been due to the psychological shock generated by the Great Depression, and, above all, by the European tragedy: the Second World War killed nearly fifty million people. When it ended, a new era came; misery was there, but this misery was shared and a wind of optimism was blowing. In the eyes of everybody, the future would undoubtedly be better than the past. It was the reconstruction spirit: people had faith in God, in life, in the family, in solidarity. The facile interpretation of the baby boom as a response to the economic growth does not hold. The real crucial change was the change in the state of mind, from mourning to hope. How is it possible to imagine such an inversion of the historical trend without a shock? The thirty glorious years (1945-1975) followed the thirty unhappy years (1914-1945).

Some philosophers view the West as a tired and sterilizing civilization which created illimited expectations and lost its soul. How could long-term confidence come back? Would it need decades of deprivation or a major threat? One knows the defensive behaviour of endangered minorities: higher fertility is a survival response.

C. Conclusion

The results of population projections—or, more precisely, the basic assumptions incorporated in them—are deeply rooted in the spirit of the times and are usually more reliable if made by free thinkers than by official bodies. Individual experts are not constrained by "politically correctness".

One such guess was made in 1933-1934 by Landry. He predicted that the post-transitional demographic stage would be a phase of ultimate and permanent disequilibrium which, sooner or later, would spread all over the planet. He clearly launched a warning on the danger of "effective depopulation"; he made extensive reference to the decline of ancient Greek and Roman civilizations (luxury can be the enemy of life). In human science, experimentation is impossible, history is the only valuable reference, but it has to be used carefully since each era is unique and is embodied in a multifaceted and unstable constellation of determinants and contexts. In any case, the future is not a simple replication of the past; present societies are much more complex than ancient ones. The question is whether that is a handicap or an advantage for survival.

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FUTURE EXPECTATIONS FOR BELOW-REPLACEMENT FERTILITY

Population Division

FERTILITY PROSPECTS FROM THE *1996 REVISION*

Current situation and past trends in low fertility countries

According to the *1996 Revision* of *World Population Prospects* (United Nations, 1998), the total fertility rate (TFR) is estimated to be, in 1990-1995, at or below the level of 2.1 children in 51 countries or areas of the world (table 1), whose combined population (2.6 billion in 1997) amounts to 44 per cent of the global population. According to the medium variant of the *1996 Revision*, there are 9 additional countries (or areas) in which fertility is expected to decrease to or below replacement level between 1990-1995 and 1995-2000: Armenia, Guadeloupe, Netherlands Antilles, New Zealand (where TFR already has been below 2.1 in 1980-1990), Puerto Rico, Republic of Moldova, Réunion, Sri Lanka and Trinidad and Tobago.

TABLE 1. SELECTED CHARACTERISTICS OF LOW FERTILITY COUNTRIES OR AREAS

Period when TFR first reached 2.1/Country	*TFR in 1990-1995*	*Population 1997 (thousands)*	*Period when TFR first reached 2.1/Country*	*TFR in 1990-1995*	*Population 1997 (thousands)*
1950-1955			*1970-1975*		
Estonia	1.58	1 455	Austria	1.47	8 161
Latvia	1.64	2 474	Belgium	1.62	10 188
			Canada	1.74	29 943
1955-1960			Denmark	1.75	5 248
Japan	1.48	125 638	Germany	1.30	82 190
			Luxembourg	1.66	417
1960-1965			Malta	2.08	371
Hungary	1.69	9 990	Netherlands	1.59	15 661
Ukraine	1.64	51 424	Sweden	2.01	8 844
			Switzerland	1.53	7 276
1965-1970			United Kingdom	1.78	58 200
Croatia	1.65	4 498	United States of America	2.05	271 648
Finland	1.83	5 142			
Russian Federation	1.53	147 708			

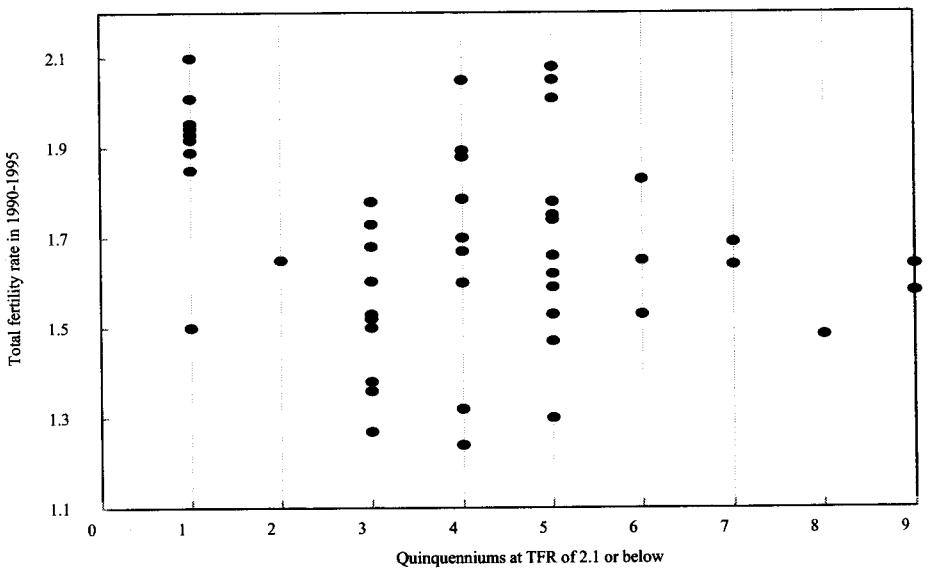
Period when TFR first reached 2.10/Country	*TFR in 1990-1995*	*Population 1997 (thousands)*	*Period when TFR first reached 2.10/Country*	*TFR in 1990-1995*	*Population 1997 (thousands)*
1975-1980			*1990-1995*		
Australia	1.89	18 250	Bahamas	1.95	288
Belarus	1.67	10 339	China	1.92	1 243 738
China, Hong Kong SAR	1.32	6 249	Dem. People's Rep. of Korea	2.10	22 837
France	1.70	58 542	Georgia	2.10	5 434
Italy	1.24	57 241	Ireland	2.01	3 559
Macau	1.60	451	Poland	1.89	38 635
Martinique	2.05	388	Romania	1.50	22 606
Norway	1.88	4 364	Slovakia	1.85	5 355
Singapore	1.79	3 439	TFYR Macedonia	2.10	2 190
			Thailand	1.94	59 159
1980-1985			Yugoslavia	1.93	10 350
Barbados	1.73	262			
Bosnia and Herzegovina	1.50	3 784			
Bulgaria	1.53	8 427			
Cuba	1.60	11 068			
Czech Republic	1.68	10 237			
Greece	1.38	10 522			
Lithuania	1.78	3 719			
Portugal	1.52	9 802			
Slovenia	1.36	1 922			
Spain	1.27	39 717			
1985-1990					
Republic of Korea	1.65	45 717			

[1]On July 1997, Hong Kong became a Special Administrative Region (SAR) of China.

Source: Population Division, Department of Economic and Social Affairs of the United Nations Secretariat, *World Population Prospects: The 1996 Revision* (United Nations publication, Sales No. E.98.XIII.5), fertility level is currently below replacement represent an evolving attempt at better approximating future reality.

In practically all countries of the more developed regions fertility is currently significantly below the level necessary for the replacement of generations; in many countries in these regions the period TFR has stayed at below-replacement level for several decades (figure I). In the last decade fertility has decreased to levels below replacement in several countries from the less developed regions, including all countries in the populous region of Eastern Asia (except Mongolia) and a rapid fertility transition in South-eastern Asia and Latin America brings an increasing number of developing countries close to that threshold. As a result, the methodological issues of projecting fertility at levels below replacement is acquiring particular importance.

Figure I. Distribution of countries according to fertility levels in 1990-1995 and duration at below-replacement fertility



Source: Population Division, Department of Economic and Social Affairs of the United Nations Secretariat, *World Population Prospects: The 1996 Revision* (United Nations publication, Sales No. E.98.XIII.5).

Projection approach

The three fertility variants of the United Nations projections are referred to as high, medium and low, depending upon the assumed levels of future fertility. The high, medium and low fertility variants for each country are all thought to provide reasonable and plausible future trends in fertility. The low and high fertility variants are usually thought to bracket the probable range of future population change for each country; nevertheless, the fertility change for a given country could progress, and occasionally has, at a pace outside the high-low bracket. The constant-fertility scenario is an illustrative projection prepared for analytical purposes. This scenario is based on the assumption that future fertility for each country will remain unchanged at the level calculated for 1990-1995.

Comparison of observed world population change with that projected in the whole series of *Revisions* shows that for large aggregations of countries (such as development regions or major areas or the world) the medium-variant projection has well described future world population growth, at least for year horizons of 20-25 years. In that sense, the medium-variant projection for such large aggregations has been described as "most likely".

The fertility assumptions for each country in the United Nations projections are operationalized, first, by assuming future changes in the total fertility rate; and, secondly, assuming or calculating age-specific fertility patterns that are jointly consistent with the assumed TFR and the current national age patterns of fertility.

For high- or medium-level fertility countries (where fertility rates are above replacement level), the pace of the assumed fertility decrease (operationalized in the medium variant as the "target period" in which TFR will reach and pause at replacement level) is determined by taking into account a range of socio-economic factors, such as population policies and programmes, adult literacy, school enrolment levels, economic conditions, infant mortality and nuptiality, as well as historical, cultural and political factors.

The analysis of past fertility trends in countries that have already completed the demographic transition does not suggest any obvious future trend. For instance, although the downward trends typically continue after having crossed the replacement level, no cross-sectional relationship emerges between how long a country's TFR has been below replacement and how low the TFR is (figure I). There exists no compelling and quantifiable theory of reproductive behaviour in low fertility societies. Therefore, the methods of formulating fertility assumptions for countries whose fertility level is currently below replacement represent an evolving attempt at better approximating future reality.

In the 1996 and in the previous *Revisions* the pace (and direction) of future fertility change for each low fertility country depends upon the recent fertility experience of the country—whether fertility has recently been declining, rising or remaining relatively constant. For all countries, however, it is assumed that fertility in the medium variant will ultimately rise toward replacement level, either by continuing to rise to that level if fertility is already rising or by beginning to rise sometime in the future (usually after 2000 or 2005) if fertility has been constant or is declining.

In particular, if recorded fertility was declining in 1990-1995, TFR was assumed to decline at its past pace through 1995-2000 and then remain at its 1995-2000 level through 2000-2005. Subsequently, TFR was assumed to rise towards the replacement level at a pace of 0.07 child per 5-year period. If recent recorded fertility was relatively constant, TFR was assumed to remain constant through 1995-2005 and then to increase towards the replacement level at a pace of 0.07 child per projection period. If fertility was rising recently, TFR was assumed to continue rising to 2.1 at a pace of 0.07 child per projection period.

Similar approaches are taken for the high- and low fertility variants. For the low variant, if recorded fertility was declining in 1990-1995, it was assumed that TFR will decline further at a pace of 0.1 child per 5 years until it reaches 1.5, or will remain constant at its lowest level if the actual TFR was below 1.5. If fertility was relatively constant or rising, TFR was expected to start falling at a pace of 0.1 child per projection period until it reaches 1.5, or remain constant at its lowest recorded below-1.5 level.

For the high variant, if fertility was actually declining in 1990-1995, it was assumed to remain constant in 1995-2000, and then begin to rise to 2.5 at a pace of 0.1 child per projection period. If fertility was constant or rising, the TFR was assumed to begin (continue) rising immediately at a pace of 0.1 child per projection period.

These assumptions are translated into varying lengths of periods when fertility is expected to remain below replacement level in particular countries or areas. Table 2 shows the projection periods when the currently below-replacement countries are expected to return to replacement in the medium and high variants (fertility will always stay below replacement in the low variant). According to the medium variant, this will happen before 2010 in only three countries; fertility is expected to reach replacement from 2010 to 2030 in 16 countries and from 2030 to 2050 in 15 countries; replacement level is not reached in 17 countries until after the projection horizon (2050).

TABLE 2. EXPECTED PERIODS WHEN FERTILITY WILL REACH REPLACEMENT LEVEL IN COUNTRIES OR AREAS WHERE TFR IN 1990-1995 WAS AT OR BELOW 2.10: MEDIUM AND HIGH VARIANTS

Country	*Medium variant*	*High variant*	*Country*	*Medium variant*	*High variant*
Australia	2015-2020	2000-2005	China	2020-2025	2005-2010
Austria	after 2050	2030-2035	Hong Kong SAR	after 2050	2030-2035
Bahamas	2010-2015	2000-2005	Croatia	2040-2045	2020-2025
Barbados	2025-2030	2010-2015	Cuba	2040-2045	2015-2020
Belarus	after 2050	2020-2025	Czech Republic	after 2050	2025-2030
Belgium	2030-2035	2015-2020	Dem. People's Rep. of Korea	1995-2000	1995-2000
Bosnia and Herzegovina	after 2050	2025-2030	Denmark	2015-2020	2010-2015
Bulgaria	after 2050	2025-2030			
Canada	2030-2035	2020-2025			

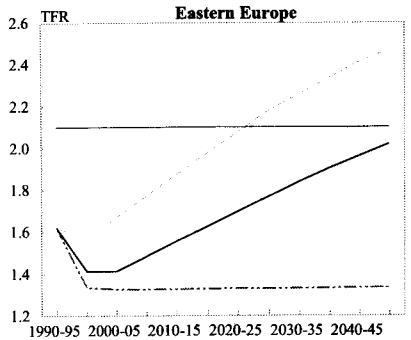
Country	Medium variant	High variant	Country	Medium variant	High variant
Estonia	after 2050	2030-2035	Republic of Korea	2035-2040	2015-2020
Finland	2020-2025	2005-2010	Romania	after 2050	2025-2030
France	2035-2040	2015-2020	Russian Federation	after 2050	2025-2030
Georgia	2015-2020	1995-2000	Singapore	2025-2030	2010-2015
Germany	after 2050	2030-2035	Slovakia	2045-2050	2020-2025
Greece	after 2050	2030-2035	Slovenia	after 2050	2035-2040
Hungary	after 2050	2025-2030	Spain	after 2050	2040-2045
Ireland	2025-2030	2005-2010	Sweden	2020-2025	2005-2010
Italy	after 2050	2040-2045	Switzerland	2045-2050	2025-2030
Japan	2045-2050	2025-2030	TFYR Macedonia	2015-2020	1995-2000
Latvia	after 2050	2020-2025	Thailand	2030-2035	2005-2010
Lithuania	2045-2050	2020-2025	Ukraine	after 2050	2030-2035
Luxembourg	2020-2025	2010-2015	United Kingdom	2025-2030	2015-2020
Macau	2040-2045	2015-2020	United States of America	2010-2015	2000-2005
Malta	1995-2000	1995-2000	Yugoslavia	2025-2030	2005-2010
Martinique	2000-2005	2000-2005			
Netherlands	2040-2045	2025-2030			
Norway	2015-2020	2005-2010			
Poland	2035-2040	2010-2015			
Portugal	2045-2050	2025-2030			

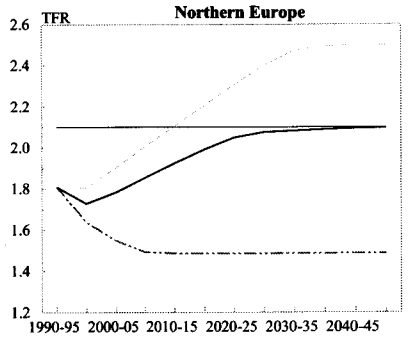
Source: Population Division, Department of Economic and Social Affairs of the United Nations Secretariat, *World Population Prospects: The 1996 Revision* (United Nations publication, Sales No. E.98.XIII.5).

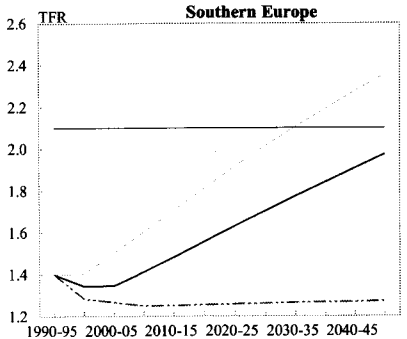
Corresponding TFR trajectories are shown in figure II for the seven regions where fertility was below replacement in 1990-1995. While these trajectories follow similar patterns, they differ in several respects. For instance, in the medium variant fertility is projected to return at replacement level in 2010-2015 in Northern America, in the following quinquennium in Australia/New Zealand and in 2020-2025 in Eastern Asia. In the regions of Europe the restoration of replacement fertility is projected to occur much later—and beyond the projection's horizon in all regions except Northern Europe.

Therefore, the central assumption of this projection approach is that fertility will remain below replacement level for many decades to come although it will eventually move toward and pause at replacement level many years in the future. Intrinsically, the "magnetic force" toward replacement (Westoff, 1991) is based on the homeostatic argument of the demographic transition theory: an initial equilibrium between high birth rates and high death rates is disturbed by declining mortality which in turn triggers a fertility decline that brings birth and death rates back to an equilibrium at low levels. Most explicitly developed by Vishnevsky (1976, 1991), the homeostasis argument suggests that fertility levels ultimately result from the development of the "demographic system" that aims at its own inherent goals of self-maintenance and survival, rather than being the sum of individual behaviour. Fertility levels that dropped

Figure II. TFR trajectories in 1990-2050, currently below-replacement regions: medium, high and low fertility variants







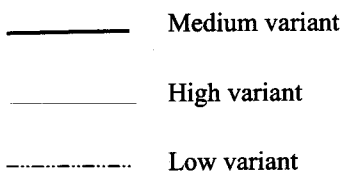
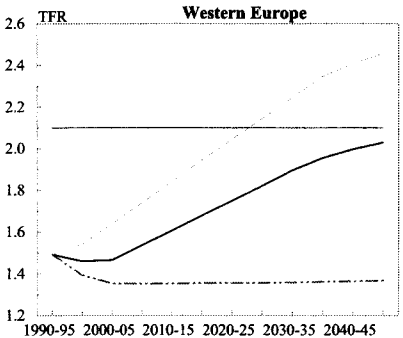
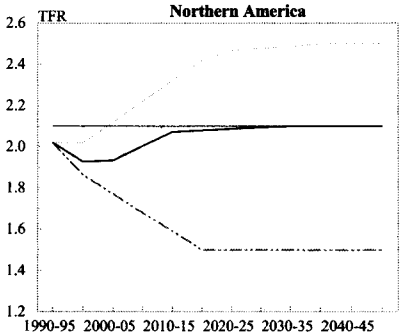


Figure II *(continued)*



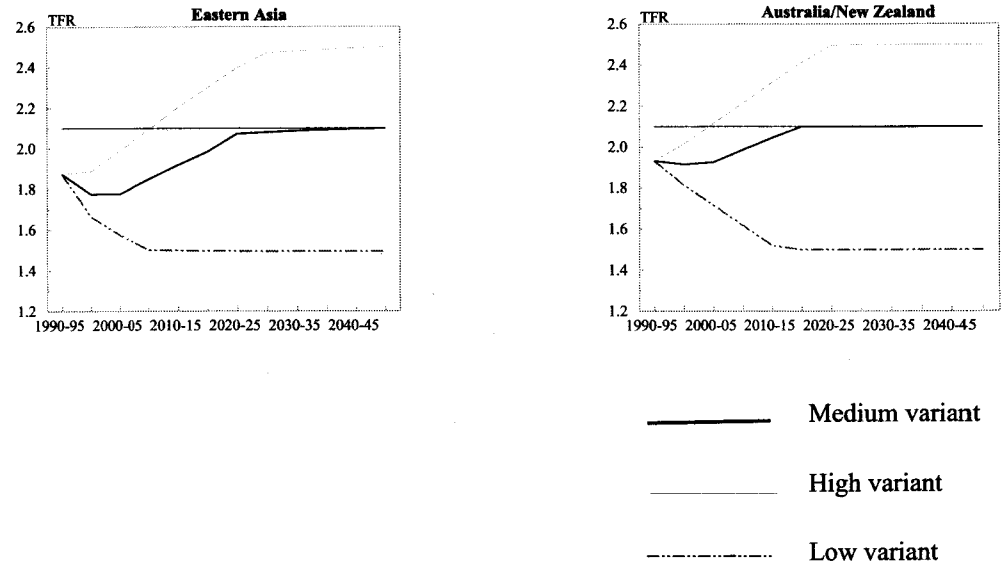


Medium variant

High variant

Low variant

Figure II *(continued)*



Source: Population Division, Department of Economic and Social Affairs of the United Nations Secretariat, *World Population Prospects: The 1996 Revision* (United Nations publication, Sales No. E.98.XIII.5).

d substantially below replacement levels or stayed below replacement for a relatively long time are construed as aberrations or overshootings that will be inevitably reversed in the future. Although that hypothesis is not specific enough to be empirically tested (Lutz, 1994), it remains very influential (see, e.g., Day, 1995), partly because reproductive intentions stated in opinion surveys consistently reveal a strong trend toward the two-child family as a normative goal.

For countries that are in the midst of the transition from high to low fertility, age-specific fertility patterns matching those projected total fertility rates are calculated by interpolating (with respect to TFR) between the most recent available national age-specific fertility pattern and model replacement-level fertility patterns. These models were constructed considering the age-specific fertility patterns of countries that have reached replacement level. Three types of the age pattern of fertility at replacement level have been identified by looking at existing age patterns in countries where fertility has already reached replacement level (see table 3). These models are:

(*a*) *Late childbearing schedule.* Normally associated with late nuptiality and high incidence of childlessness; there is little fertility in age group 15-19, maximum fertility is in age group 25-29, and fertility is about the same at ages 20-24 and 30-34. Such late childbearing patterns have been documented for Eastern Asia and parts of Western and Northern Europe (Denmark, France, Netherlands, Federal Republic of Germany, Sweden, Switzerland);

(*b*) *Intermediate childbearing schedule.* About the same maximum fertility is found in age groups 20-24 and 25-29. Such a fertility pattern was typical for a number of European populations in the early 1970s;

(*c*) *Early childbearing schedule.* Usually associated with early nuptiality and low incidence of childlessness; there is considerable teenage fertility. Maximum fertility is in age group 20-24 and fertility at ages 15-19 is nearly as high as that at ages 25-29. The early childbearing schedule is typical for Eastern Europe.

TABLE 3. AGE PATTERNS OF FERTILITY AT REPLACEMENT LEVEL FOR LATE, INTERMEDIATE AND EARLY CHILDBEARING
(*Percentage*)

Age-pattern model	*Total fertility in each age group*							*Total*
	15-19	*20-24*	*25-29*	*30-34*	*30-39*	*40-45*	*45-49*	
Late childbearing	4	22	40	22	10	2	0	100
Intermediate	12	31	31	16	8	2	0	100
Early childbearing	20	40	25	10	4	1	0	100

Source: Population Division, Department of Economic and Social Affairs of the United Nations Secretariat, *World Population Prospects: The 1996 Revision* (United Nations publication, Sales No. E.98.XIII.5).

The currently used assumption for low fertility countries is that country-specific age patterns of fertility will remain stable during the entire projection period. In fact, continuing shifts in childbearing patterns of low fertility

populations are the norm rather than an exception. However, those shifts do not necessarily occur in the same direction. As a result, fertility schedules often tend to further diverge rather than converge as fertility decreases below replacement. For instance, around 1970 Japan and the Russian Federation had similar levels of fertility and similar fertility patterns. However, the Japanese fertility pattern became older as TFR decreased from 2.1 in 1970 to 1.5 in 1990-1995, with the mean age at childbearing increasing from 27.4 years in 1975 to 29.3 years in 1994. The Russian pattern became younger while experiencing a similar drop in TFR from 2.1 in 1965 to 1.4 in 1990-1995, the mean age at childbearing decreasing from 26.4 years in 1975 to 24.6 years in 1994 (figure III). In the space of 20 years a relatively small difference of 1 year in the mean age of childbearing had widened to 5 years.

Differences in the age pattern of fertility have consequences on the size and the age-structure of the population. The impact of the assumed age pattern of fertility on the projection output is illustrated by the application of the Japanese schedule of 1990-1995 to Russian data. Assuming all other projection inputs (including TFR trajectory for the projection period), the Japanese age pattern of fertility yields a 20 per cent decrease in population size from 1995 to 2050 compared with a 23 per cent decrease when the Russian 1990-1995 schedule is applied. This is a 3 per cent difference in the size of the 2050 population. The differences in the 2050 age structure are however more striking: for instance, under the Japanese fertility schedule the age groups 0-4 and 5-9 become 15 per cent larger, while the group 45-49 is 5 per cent smaller.

It is thus clear that the age-pattern of fertility is a significant factor in projecting populations. However, the current lack of an operational theory of reproductive behaviour in low fertility societies precludes the design of an appropriate methodology for assuming future changes in fertility pattern, and in practice the age pattern of fertility is usually kept constant in the future.

In all that precedes, the expression "replacement level" has been used interchangeably with a TFR level of 2.1 when discussing low fertility, and the value 2.1 has in effect been used as the replacement level. This is correct in first approximation for all the countries where fertility has already reached replacement level, because these countries also have low mortality. In practice, of course, "replacement level" means fertility level such that the net reproduction rate is equal exactly to 1, and depends on the sex ratio at birth and on the proportion of women surviving to the mean age of childbearing. In real life the sex ratio at birth for most countries varies in a narrow range, from 1.05 to 1.07, but there are exceptions, notably the Republic of Korea, where it is 1.15 and China (1.10). Survivorship to the mean age of childbearing, in the countries with low fertility, varies from .99 in Japan to .97 in the Russian Federation. As a result, the replacement-level TFR, strictly speaking, is 2.08 in Japan, 2.12 in the Russian Federation, 2.17 in China and 2.22 in the Republic of Korea.

We will continue to use the TFR value of 2.1 as a proxy for "replacement level" with the understanding that it is only a loose definition.

Figure III. Age patterns of fertility in Japan and the Russian Federation

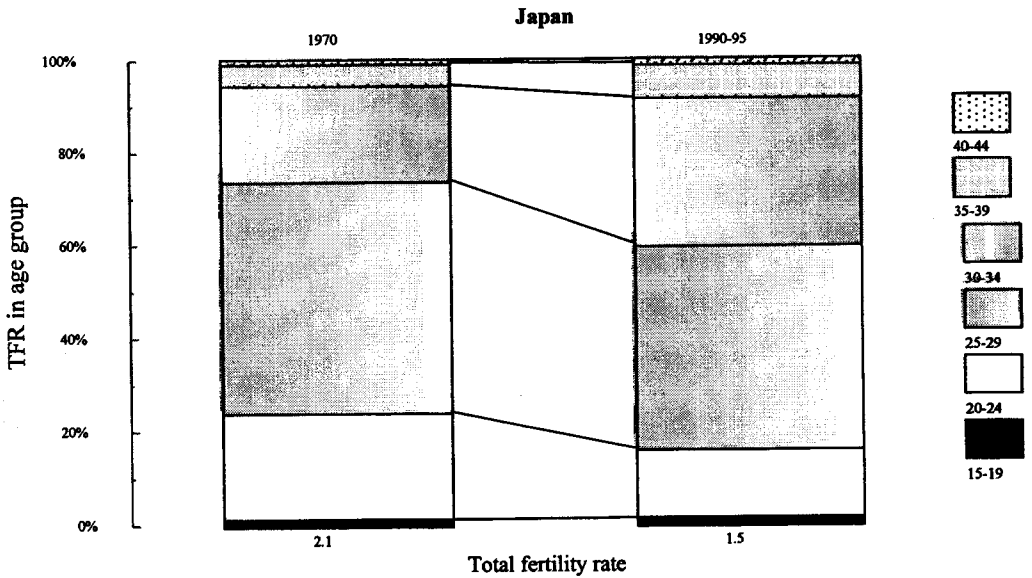
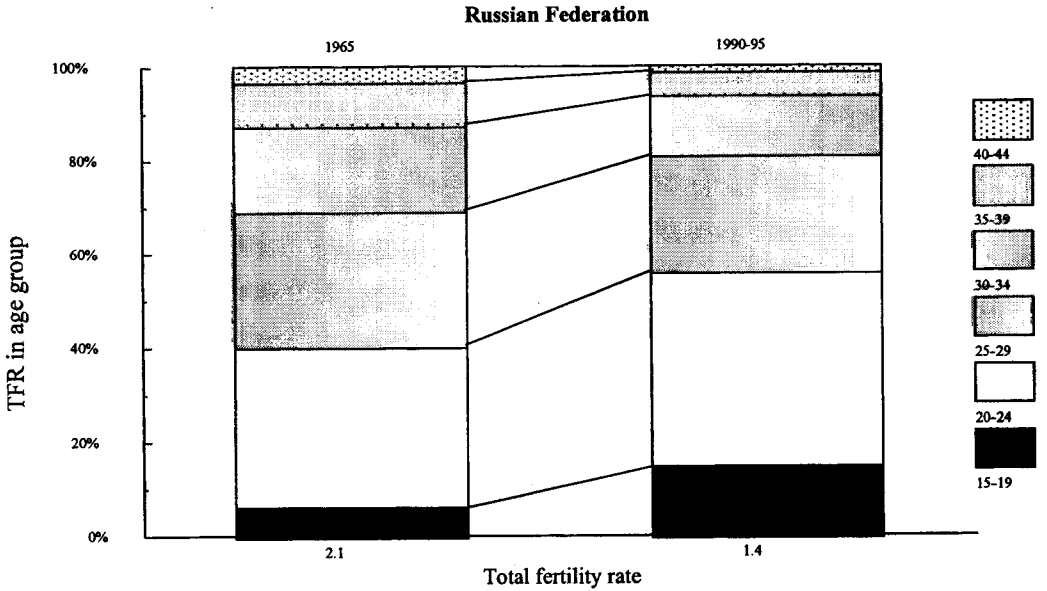


Figure III *(continued)*



Source: Goskomstat of Russia (1995). *The Demographic Yearbook of Russia 1995*; United Nations (1976). *Demographic Yearbook 1975*. Sales No. E/F.76.XIII.1; Population Division, Department of Economic and Social Affairs of the United Nations Secretariat, database of *World Population Prospects: The 1996 Review*.

Demographic implications of fertility assumptions

The medium variant of the *1996 Revision* yields a stable population size for Northern Europe during the first half of the twenty-first century; in Western Europe, during the first quarter of the century there will be zero population growth, followed by a 10 per cent population decrease in the second quarter. Populations of Eastern and Southern Europe will be decreasing during the entire projection period (table 4) and the pace of negative population growth will accelerate; by the mid-century they are expected to lose 18 and 16 per cent of their 1995 size, respectively. On the contrary, the populations of Northern America, Eastern Asia and Australia/New Zealand are projected to keep growing; their sizes in 2050 will be from 21 to 43 per cent higher than in 1995.

TABLE 4. INDEX OF POPULATION CHANGE: LOW FERTILITY REGIONS
(*1995=100*)

Region	Low variant		Medium variant		High variant	
	2020	2050	2020	2050	2020	2050
Eastern Europe	90	69	93	82	98	100
Southern Europe	95	72	97	84	100	95
Northern Europe	97	81	102	101	105	113
Western Europe	99	79	102	93	105	105
Australia/New Zealand	120	113	129	143	135	166
Northern America	112	102	121	129	127	152
Eastern Asia	111	97	117	121	122	141

Source: Population Division, Department of Economic and Social Affairs of the United Nations Secretariat, *World Population Prospects: The 1996 Revision* (United Nations publication, Sales No. E.98.XIII.5).

When reviewing table 4, it must be noted that these seven regions include five countries whose total fertility rates are above replacement level in 1990-1995 (Republic of Moldova, Iceland, Albania, New Zealand and Mongolia). In addition, it must be noted that large immigration flows in many below-replacement countries that are projected to last well into the twenty-first century counteract the fading or negative natural increase of their populations.

Under the fertility assumptions of the high variant, population growth in Eastern Asia, Northern America and Australia/New Zealand is further amplified; the virtual stabilization in Northern Europe becomes a slow positive growth, while the population of Eastern, Southern and Western Europe remains nearly constant. Conversely, under the low variant all currently low fertility regions are projected to experience in the second quarter of the twenty-first century high rates of negative population growth (figure IV).

Naturally, fertility assumptions have the heaviest impact on projected annual numbers of births and, therefore, on the size of youngest population groups. Figure V shows, for all developed regions combined, that the medium variant yields relatively minor changes in the size of the age group 0-4 between 1995 and 2050, while the high variant implies a 36 per cent growth and the low

variant projects a 53 per cent decrease; as a result in 2050 the size of the age group 0-4 in the medium variant will be twice the size in the low variant, and in the high variant it will be three times the size in the low variant.

Current fertility levels and fertility assumptions for the future also have important implications for the projected pace and extent of population ageing (figure VI). Ageing will proceed in all variants: even the fertility increase incorporated into the high variant will not prevent the proportion of persons aged 65 or over from increasing considerably between 1995 and 2050, with that increase ranging from 6 percentage points in Northern America to 13 percentage points in Southern Europe. While in 1995 the highest proportion of persons in the age group 65 or over was recorded in Northern Europe (15.4 per cent), Southern Europe in all variants is expected to become the leading region as early as the year 2000 and will retain that position until the end of the projection period when the proportion of the age group 65 or over is expected to be from 27.4 per cent in the high fertility variant to 36.0 per cent in the low fertility variant. The high proportion of the age group 65 or over in Western Europe (15.0 per cent in 1995) will further increase by 2050 when it is expected to range from 24.3 per cent (high variant) to 32.3 per cent (low variant). Northern Europe will see a slower pace of ageing and the region's age structure will converge with that of Eastern Europe and will be significantly younger than those in Southern and Western Europe. In Eastern Asia the relatively recent fertility transition will cause especially rapid ageing, increasing the proportion of the population aged 65 and over from 6.8 per cent in 1995 to between 17.3 and 25.2 per cent in 2050, according to the variant.

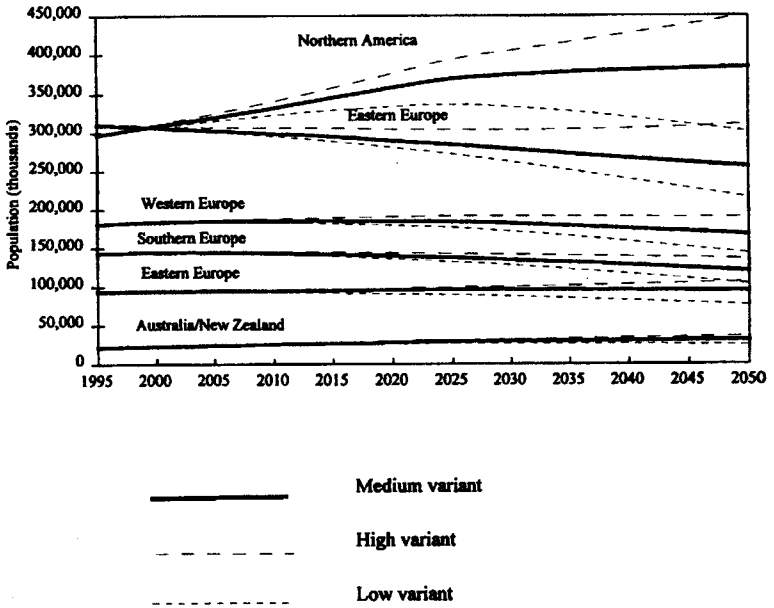
The differences in the proportion of the population group aged 65 or over among projection variants will be increasing with time at accelerating pace and are expected to reach, in all regions, around 8 percentage points between the extreme variants (figure VI).

SUGGESTED NEW FERTILITY ASSUMPTIONS FOR THE *1998 REVISION*

The historical experience up to date does not suggest the stabilization of fertility at replacement level. Instead, total fertility rates often cross the 2.1-line and go further down. Their further trajectories are varied. Very often fertility decreases further substantially and stays for long periods below replacement level (figure I); that fall may be either straight and fast or fluctuating and gradual. What is particularly important is that new empirical evidence tends to continually revise downward the level of TFR. For instance, a decade or two ago low fertility variants of national demographic projections in Europe assumed TFRs higher than 1.5 (TFR level of 1.5 is consistent with two children per mother on average and the childlessness level of 25 per cent). Now, a TFR in the range of 1.2 to 1.5 is assumed as the low variant in demographic projections of most low fertility countries and the medium variant is almost universally set below replacement (Eurostat, 1991; Keilman and Cruijsen, 1992).

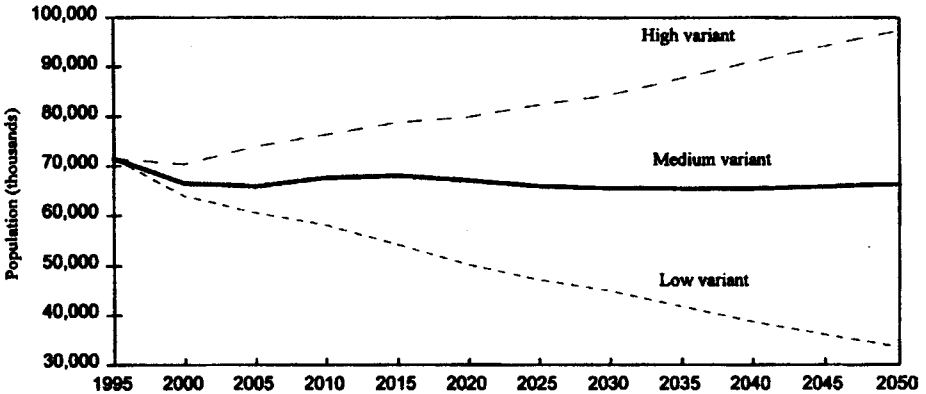
Moreover, these shifts in assumptions happen against the background of even lower fertility levels achieved in large parts of several European countries (e.g., in Eastern Germany, Northern Italy, and certain most urbanized regions of the Russian Federation, the TFR was at or below 1.0 in the 1990s). Longer

Figure IV. Population of low fertility regions, 1995-2050: medium, high and low variants



Source: Population Division, Department of Economic and Social Affairs of the United Naitons Secretariat, *World Population Prospects: The 1996 Review* (United Nations publication, Sales No. E.98.XIII.5).

Figure V. Population group 0-4, more developed regions: 1995-2000



Source: Population Division, Department of Economic and Social Affairs of the United Naitons Secretariat, *World Population Prospects: The 1996 Review* (United Nations publication, Sales No. E.98.XIII.5).

Figure VI. Proportion of the age group 65+ in the populations of low fertility regions, 1995-2050: medium, high and low variants

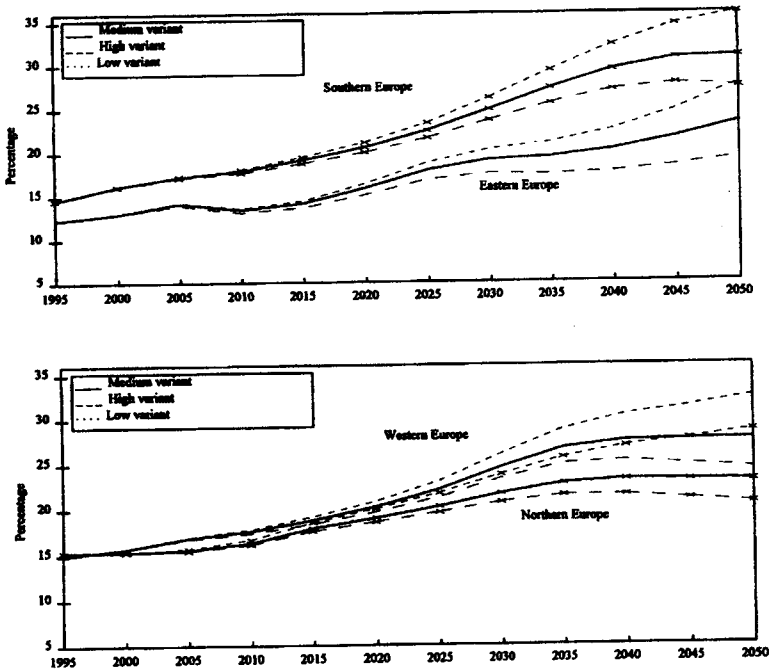
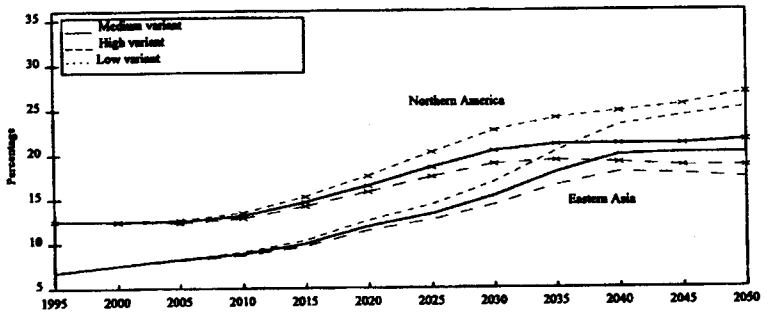


Figure VI *(continued)*



Source: Population Division, Department of Economic and Social Affairs of the United Naitons Secretariat, ***World Population Prospects: The 1996 Review*** (United Nations publication, Sales No. E.98.XIII.5).

full-time education of women, more cohabitation or living alone and increasing female labour-force participation are often identified as relevant social trends leading to later motherhood, more children born out of wedlock, a rising voluntary childlessness and further declining family sizes.

On the other hand, in the Nordic countries, in particular in Sweden and Norway, fertility substantially increased in the late 1980s and approached or even surpassed the replacement level. This reversal of fertility decline may have been associated with large-scale social policies aimed at creating conditions (through significantly extending childcare facilities, and increasing family allowances) which allow women to combine professional careers with motherhood. (However, since 1990 Sweden's fertility has been declining fast again.)

As a result, the "post-transition" fertility levels became less homogeneous in the first half of the 1990s than they were a decade ago, which highlights the methodological challenges of projecting their future trends.

In an attempt to better reflect these features of below-replacement fertility, the United Nations is suggesting a new approach to formulating fertility assumptions in the *1998 Revision*. First, two types of target TFR levels are introduced in the medium variant instead of the previously used replacement level (i.e., TFR at 2.1). For countries with current (i.e., most recent available) TFR below 1.5, the medium-variant target level is 1.7; for countries with current TFR between 2.1 and 1.5, the target level is 1.9. Second, completed cohort fertility of the youngest generation for which it can be safely estimated (i.e., cohorts born in 1962) is used as a yardstick for long-term trends: the new medium-variant target fertility is computed as the average of the estimated completed fertility of the 1962 cohort and either 1.7 or 1.9 as defined above. In the absence of recent information on cohort fertility, the target becomes simply either 1.7 or 1.9.

In making assumptions about the future path of fertility, the level of the TFR in the year 2000 is determined by continuing the recent trends, upward, downward or about constant; the TFR is assumed to pause at the level reached in 2000 until 2005, before starting a linear move toward the selected target level, increasing by 0.07 children during each 5-year period of the projection.

This new procedure takes into account the recorded experience of long periods below replacement level and represents a move towards the cohort method of fertility projection which is currently implemented in most countries of the European Economic Area (Cruijsen, 1994).

The major rationale behind the cohort method is that it explicitly takes into account past fertility history of the individual country and therefore better captures the lifetime number of births. While the application of the period method under conditions of profound changes in timing of fertility (currently, towards postponement of births in most low fertility populations) significantly overstates the degree of fertility decline, the trends in cohort total fertility are smoother and of smaller magnitude. If there is no more change in the future cohort fertility, the period TFR in the long range will become close to the current

cohort TFR. An important additional consideration is that an increasing number of countries produce necessary data on cohort fertility.

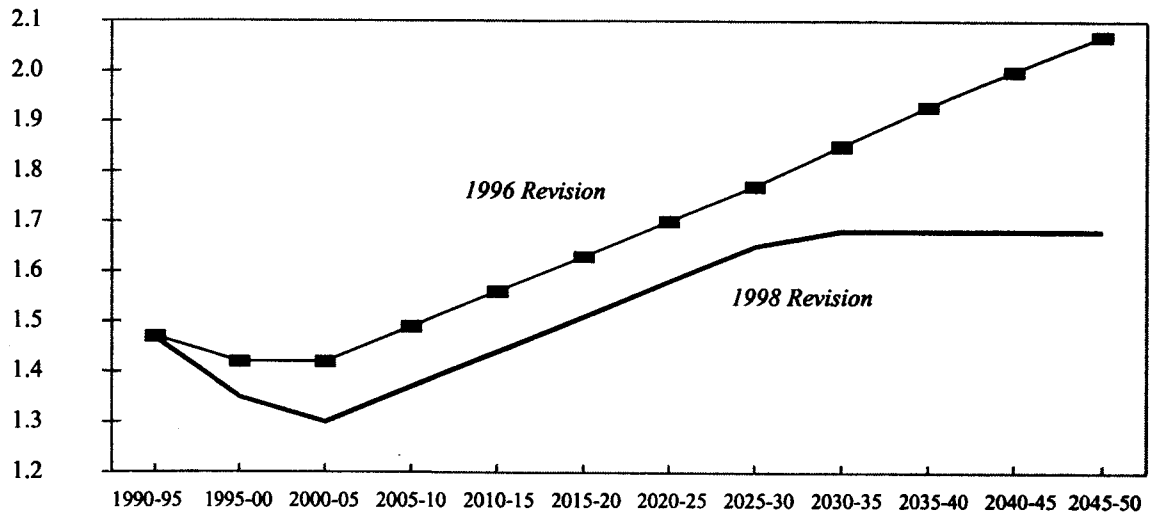
The target medium-variant TFR levels of the *1998 Revision* are the function of the most recently recorded period and cohort fertility of the individual country, and are not tied any more uniformly to replacement fertility. They yield much more diverse national fertility trajectories than was the case in the previous *Revisions*.

The target TFR levels for the high variant are set at 0.4 child above the target of the medium variant; the target for the low variant is set at 0.4 child below the target of the medium variant or is assumed to remain constant at its latest recorded level, whichever is lower. In each case the level in the year 2000 is determined in relation to the medium-variant level, and after the year 2000 the TFR moves toward its target level at a pace of 0.10 child per five-year period of the projection. Therefore, the high and low variants also become country-specific and diversified.

The new, lower, fertility assumptions would yield slower positive population growth (or earlier and faster negative population growth) and accelerated ageing than in the previous *Revisions*. A simulation with the Austrian data illustrates these differences. (Austria was chosen because it has published estimated 1962 cohort fertility and is among the countries with the lowest cohort fertility.) This compares the projection output of the medium variant of the *1996 Revision* with the projection output generated on the basis of new fertility assumptions, while the baseline population, mortality and migration assumptions are kept the same. In the *1996 Revision* fertility was assumed to move towards the replacement level, although that was expected to be reached beyond the projection horizon. In the new simulation scenario the TFR target is assumed to be 1.68, which is the average of the estimated fertility of the 1962 cohort (1.65) and the general target of 1.70 for countries with current period fertility below 1.50. The difference in the target level is not the only cause of the difference in the projected populations. While the pace of the transition toward the target level is the same in both cases, with the new approach fertility would go to a lower level in 2000-2005 than in the *1996 Revision* (1.30 instead of 1.42), before starting its climb back up. This results from new data showing an acceleration of the downward trend in 1994 and 1995. Figure VII shows the assumed future trajectories of fertility in the two scenarios.

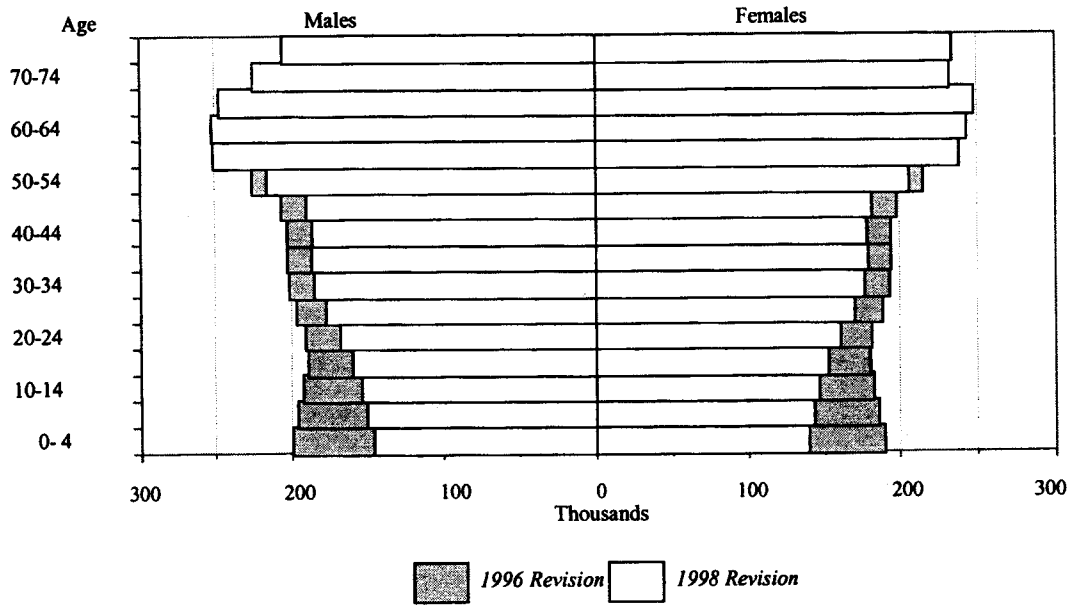
The difference in the total population size in 2050 is relatively modest (7 per cent). However, under the new fertility assumptions the shape of the age pyramid in 2050 shifts (figure VIII). Since the cohorts that in 2050 will reach age 55 and above were born before 1995, their sizes in 2050 are identical in both scenarios. The cohort born in 1995-2000, aged 50-55, will be 5 per cent smaller under the fertility assumptions of the *1998 Revision*. The following four 5-year age groups, aged 30 to 49, will be 8 per cent smaller; in the age group 20-24 the difference is 10 per cent; in the age group 15-19 it is 16 per cent; in the age group 10-14 it is 20 per cent; and in the youngest age groups (5-9 and 0-4) it reaches 23 and 27 per cent, respectively.

Figure VII. Projected total fertility rates: Austria, 1995-2050



Source: Population Division, Department of Economic and Social Affairs of the United Nations Secretariat, ***World Population Prospects: The 1996 Revision*** (United Nations publication, Sales No. E.98.XIII.5); database of ***World Population Prospects: The 1998 Revision***.

Figure VIII. Population by age and sex: Austria, 2050



Source: Population Division, Department of Economic and Social Affairs of the United Nations Secretariat, The Sex and Age Distributions of the *World Populations: The 1996 Revision.* Sales No. E.98.XIII.2; database of *World Population Prospects: The 1998 Revision.*

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SUSTAINED BELOW-REPLACEMENT FERTILITY: REALITIES AND RESPONSES

Michael S. Teitelbaum[*]

Over the past century at least, discussions about low fertility have had a long and tumultuous history, involving numerous protagonists of both political and scientific prominence. A review of this extensive literature reveals four main points worthy of consideration:

1. Both political and scientific pronouncements about low fertility have been plagued with misunderstanding and confusion. Most noticeably, low fertility has frequently been linked with national decline, but the direction of causation (whether low fertility is *cause* or *symptom* of national weakness) has often been mired in ambiguity.

For example, while some French commentators have blamed the early French fertility decline (fully a century earlier than those of rivals Germany and United Kingdom) for such national disasters as the French defeats in the Franco-Prussian war, and in the First and Second World Wars, and also for the relative decline of French economic power over the past two centuries, other voices (although sometimes from the same persons) have alluded to low fertility as a symptom of French decadence and malaise.

Concerns about dire national consequences of low fertility are most obvious among the French political class, but they are hardly alone. Similar anxieties were expressed during the 1930s in Germany, United Kingdom, Sweden and Russia among others, and in the post-war period in much of Eastern Europe, Japan, the United States and more recently in some of the "Asian Tigers" (especially Singapore, Taiwan Province of China and the Republic of Korea).

2. The issue has long been closely tied to political ideologies and cultural values, and in some cases has even been used as a tool to achieve desired social policies. In all such discussions, low fertility has never been seen solely in terms of fewer warm bodies, but instead is visualized through the lenses of sociocultural values. If this were not true, there really could not have been any

*Alfred P. Sloan Foundation, New York. The views expressed are the author's and not necessarily those of the Alfred P. Sloan Foundation. Several portions are loosely based upon earlier co-authored work [Michael S. Teitelbaum and Jay M. Winter, *The Fear of Population Decline* (Orlando and London, Academic Press, 1985)], but have been substantially modified and extended; the present author is solely responsible for any errors of fact or interpretation.

concern about low fertility during the period 1950-1995, during which the world's population increased by some 3.1 billion, or 121 per cent from the 1950 estimate of 2.5 billion. Nor could there be concern about future demographic trends well into the next century (and further into the future than any demographic projections can be interpreted as credible forecasts). For example, the most recent "low" variant United Nations projection for 2025 shows a further increase of 1.8 billion, or 31 per cent from 1995; the "high" projection a further increase of 2.9 billion, or 51 per cent. The range of population sizes projected for that distant year is 7.5 to 8.6 billion, vs. an estimated 5.7 billion in 1995.[1]

In reality, fears of low fertility are always framed in terms of regional, national or sub-national populations defined culturally. To put it crudely, since the onset of mortality declined two centuries ago, there have been no shortages of humans, only perceived or relative shortages of particular kinds of humans.

The most critical categorization is that of national population groups. Within these, there have been concerns about sub-national groupings along socially defined dimensions such as race, religion, language etc. It is for this reason that eminent French politicians such as President Jacques Chirac can simultaneously decry the prospective decline in the population of France and urge the repatriation of Arab immigrants and the restriction of further immigration.

For these reasons, concerns about low fertility have always been, and continue to be, deeply entangled in most of the major political and social questions of the past century. Naturally, political ideologies have played important roles. Yet there is no ideological uniformity to such concerns. They have emanated from all points on the political spectrum, including prominent democratic thinkers of both left-liberal and conservative orientations (including the unusual libertarian Right of the current United States), but also those from the nationalist Right of interwar Germany and Italy and modern day France and the authoritarian Left of Stalin and Ceausescu.

The political Right has traditionally seen low fertility as a threat to national power, imperial power, and to the capacity to restrain wages and union power. French nationalists evoked low French fertility rates as justifications for imperial expansion and to explain the economic and military decline of France during the nineteenth century. Moreover, many on the Right have expressed alarm about fertility differentials between social classes, races, ethnic groups, and so forth.

In the United States, an ebullient journalist named Ben Wattenberg of the conservative American Enterprise Institute has been engaged for more than a decade in a concerted campaign to sound the alarm about low fertility in the West. He began this during the 1980s, framing his arguments largely in terms of its strategic implications vis-à-vis the Soviet bloc—a very clear echo of the kind of "strategic demography" so loudly trumpeted around the time of the First World War. Yet even with the collapse of the USSR and the end of the cold war, he has continued to sound the alarm, shifting his focus toward the "swamping" of Western culture and values by those of more populous world regions.

Meanwhile, the political Left often has shared these nationalistic and strategic concerns. In the 1930s, explicitly pronatalist policies were embraced not only by Germany under Hitler, but also by the Soviet Union under Stalin. The Socialist States of the 1980s included not only the most antinatalist (the People's Republic of China), but also the most vigorously pronatalist (the Socialist Republic of Romania).

In the West, the political Left has concentrated upon the threat posed by low fertility to their desires to expand and strengthen the Welfare State. Indeed, in one prominent case (that of Gunnar and Alva Myrdal during the 1930s), prominent leftists successfully deployed concern about low fertility as a powerful argument to convince their adversaries on the Right of the need for income transfers such as family allowances, public housing etc.

3. Demographic methods, and some prominent demographers, have played central roles in past and current worries about low fertility. In fact, demographic creativity in development of the concept of the intrinsic rate of increase and of synthetic measures such as the net reproduction rate and the total fertility rate were instrumental in initiating the 1930s alarms about low fertility. These demographic concepts, coupled with the methods of demographic projection, led to open predictions that the population of the United Kingdom would be far smaller in the 1950s than in the 1930s.

In some respects, these flawed predictions arose from misunderstanding by the demographers of the day. In their enthusiasm for these new and powerful concepts and methods, some believed that the period net reproduction rates or intrinsic rates were direct reflections of underlying (cohort) fertility behaviour, and that demographic projections provided robust population predictions. Although we know better now, the same 60-year-old errors are still being made by non-demographers exercised about the low period fertility rates of the 1990s.

Wattenberg, for example, blithely defined the total fertility rate as "lifetime children born per woman". This is simply a mistake, since the period total fertility rate reflects the lifetime fertility of no actual women.[2] All modern demographers know that this interpretation of period rates is wrong, though this was not well understood during the 1930s.

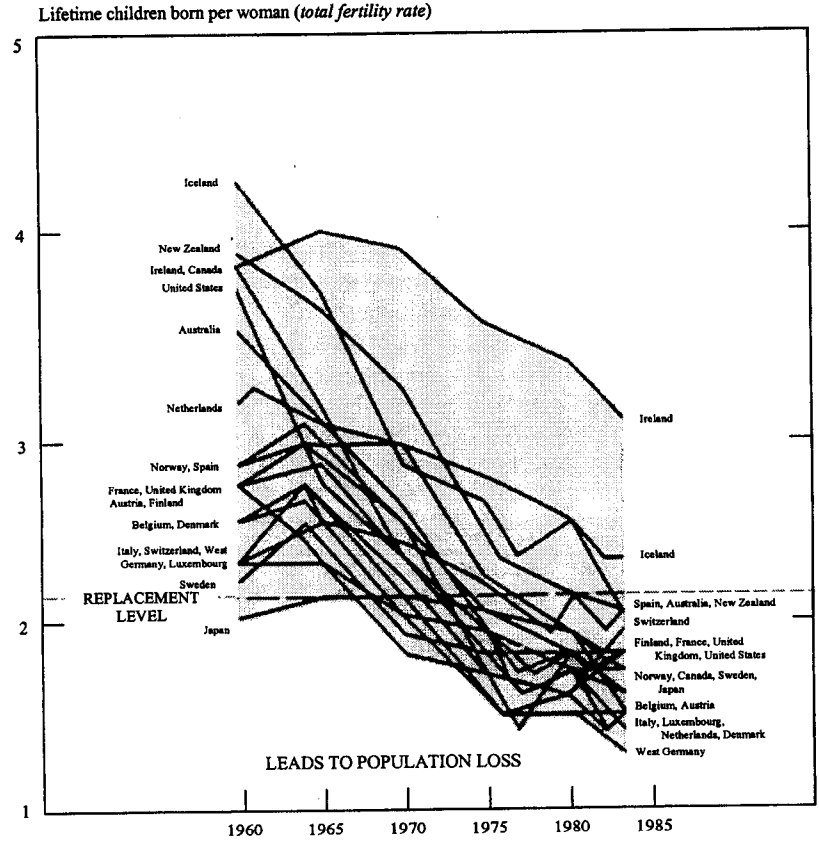
Journalistic forecasts of national or cultural demise due to low fertility are often dismissed by demographers as reflecting inadequate understanding of demographic forces and measurement. But the same cannot be said of the claims that have been made by some very distinguished demographers. The most notable was the great French demographer Alfred Sauvy, who actively propounded such concerns for at least 40 years. In various of his writings, Sauvy attributed to low fertility and resulting population ageing:

(*a*) The decadence of ancient Athens and Rome;

(*b*) The failure of France to industrialize rapidly (he said that demographic ageing was responsible for French government subsidies of vegetable dyes such as madderwort, while demographically dynamic Germany was developing chemical dyes);

(*c*) The decline of the French navy in the nineteenth century: "The decline of the French navy was more severe than in other countries. Under the

Figure I. Fertility decline in the Western community: 1960-1983



influence of population ageing, the French Government and parliament subsidized the navy's sailing ships while other countries were adopting steam-powered craft";

(*d*) The collapse of the French army before the Germans in 1940. In a spirited call to Frenchmen to confront the population problem, which was "for France, the essential problem, the only real problem" (p. 9), Sauvy and Robert Debre wrote in 1946 that

> The terrible failure of 1940, more moral than material, must be linked in part to this dangerous sclerosis [resulting from low birth rates]. We saw all too often, during the occupation, old men leaning wearily towards the servile solution, at the time that the young were taking part in the national impulse towards independence and liberty. This crucial effect of our senility, is it not a grave warning? (p. 58)

For France, they said, "depopulation carried with it, fatally, a general legacy of decadence" made infinitely worse by the fact that "the terrible ravages of the 1914-1918 war among the best of our men were not repaired", thus lowering the "quality of leadership" in the interwar years (p. 86).

Notwithstanding the justifiable eminence of Sauvy, his strongly-held views on the military, economic and moral dangers of low fertility were not widely shared among demographers (see below).

4. If the past has been one of confusion and anxiety, the future is likely to be one of great unpredictability. The truth is that we are currently in a period of low fertility that is both unprecedentedly low and unprecedentedly widespread. We really lack any way of knowing if current fertility levels in countries such as France, the United Kingdom, the United States and Canada will continue at levels moderately below replacement, rise somewhat above replacement, or decline further to levels as low as those in Italy, Spain and Germany. We all know that the past nadir of fertility during the 1930s proved to be short-lived, to be followed by a substantial baby boom in some countries and by more moderate increases in others. Fifty years from now, of course, it will be equally easy to say whether current low fertility levels represent (*a*) a temporary pause on a continuing downward trend line; (*b*) the "bottom" of a long decline, to be followed by gradual increases; or (*c*) some sort of rough equilibrium level of fertility in a post-industrial society.

The ironic reality is this: now that 90 per cent of women in industrialized countries have the capacity for rational control over their fertility, we demographers are experiencing increasing difficulty in rationally anticipating the aggregate outcomes of their rational individual behaviour.

The implications of this reality for demographic analysis are substantial. Uncertainties about whether current low fertility rates will go even lower or rise even moderately imply that a very wide range of population projections is plausible. Few demographers believe there will be another massive baby boom of the American variety during the period 1947-1965, in which total fertility rates

nearly doubled, from about 1.8 to over 3.5—although no demographers anticipated that baby boom either.

However, increases in period total fertility to 2.0 or 2.2, or declines to 1.3 or 1.4 are both plausible. Indeed, both increases and declines of such magnitudes have occurred in different countries over the past decade. Under such circumstances of profound uncertainty, can cautious demographic interpretation of historical experience and recent trends offer any sensible insights?

The first thing that needs to be said is that it is nearly inevitable that we will see populations with much older demographic age compositions than those of the past. This near-certain trend is the lagged result principally of a great triumph of human creativity: the demographic transition from the circumstances of high mortality and high fertility that prevailed for much of human existence to those of low mortality and low fertility that now prevail in all industrialized countries, and many developing countries as well.

The only way to return to the very youthful age structures of the past would be to increase fertility levels to those of the past, and to sustain such levels. This in turn would imply rapid population increase *ad infinitum*, unless mortality rates were also to rise. For some societies where extraordinarily low fertility rates are being experienced, fertility increases to more moderate levels are desirable and indeed plausible. But a return to the high fertility and hence youthful demographic age structures before the industrial revolution are both undesirable and most unlikely.

The challenge for policy development is to find creative mechanisms to smooth the transition from younger to older demographic age structures, and to put in place adaptive mechanisms that will allow such societies to prosper over the long term (see below).

Second, we may be in danger of making two errors of demographic interpretation, with significant implications. The first of these is to place undue emphasis upon very low period rates when we know that they are distorted well below underlying cohort rates. The second is to mis-specify the category "aged" and hence "demographic ageing".

As to the first, it has been well established that in most societies reporting sharply declining and/or very low period total fertility rates, the cohort rates have been declining more slowly and generally are substantially higher.[3] The Council of Europe provides useful compilations of period and cohort fertility rates for numerous countries in the European region. As may be seen in figures II and III, both period and cohort rates generally have been declining over the past three decades, but the cohort rate declines have mostly been very gradual (with the notable exceptions of a few, such as Spain and Italy). These important differences between period and cohort indicators should not surprise us, given significant upward movements in mean age at marriage (figure IV). Rising mean age at marriage typically implies rising mean age at first birth, and this can be seen especially vividly in Western countries that have experienced the most dramatic declines in period total fertility rates: Italy, Spain, Greece, Portugal and Ireland (see table 1). For all of these countries the mean age of women at first birth increased between 2.0 and 2.9 years during the 10-15 years from

Figure II. Total period fertility rates

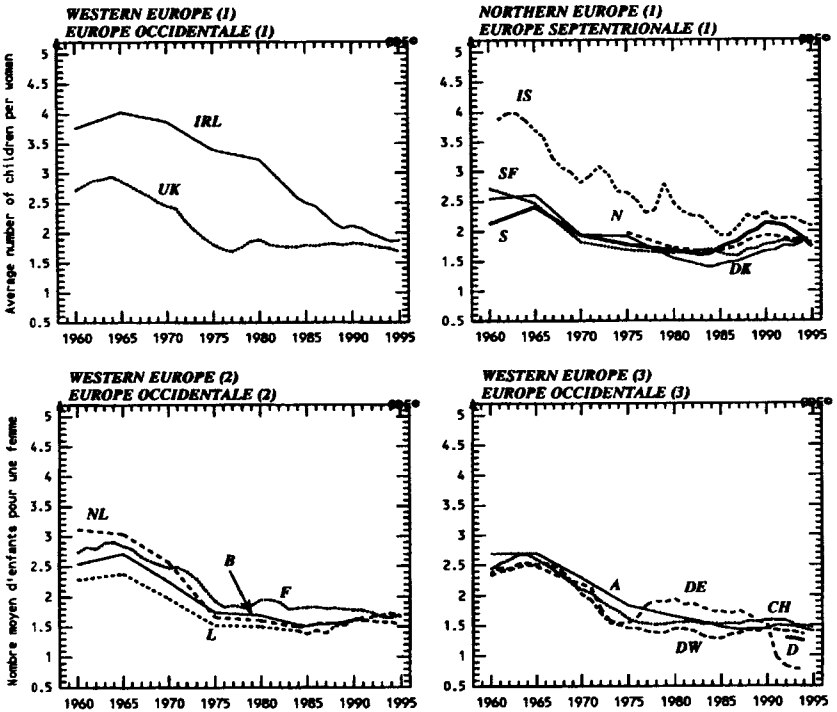
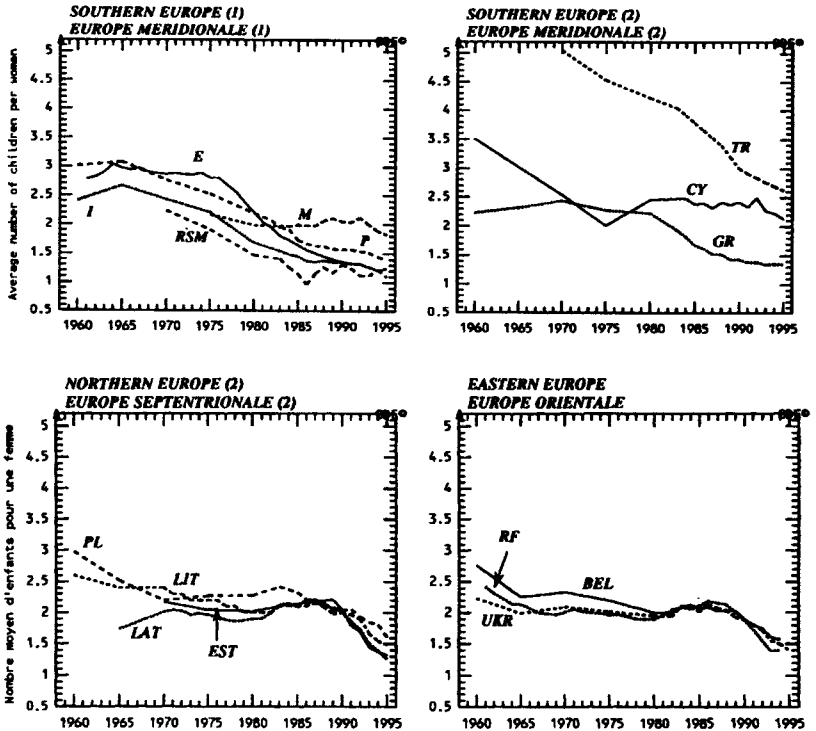


Figure II *(continued)*



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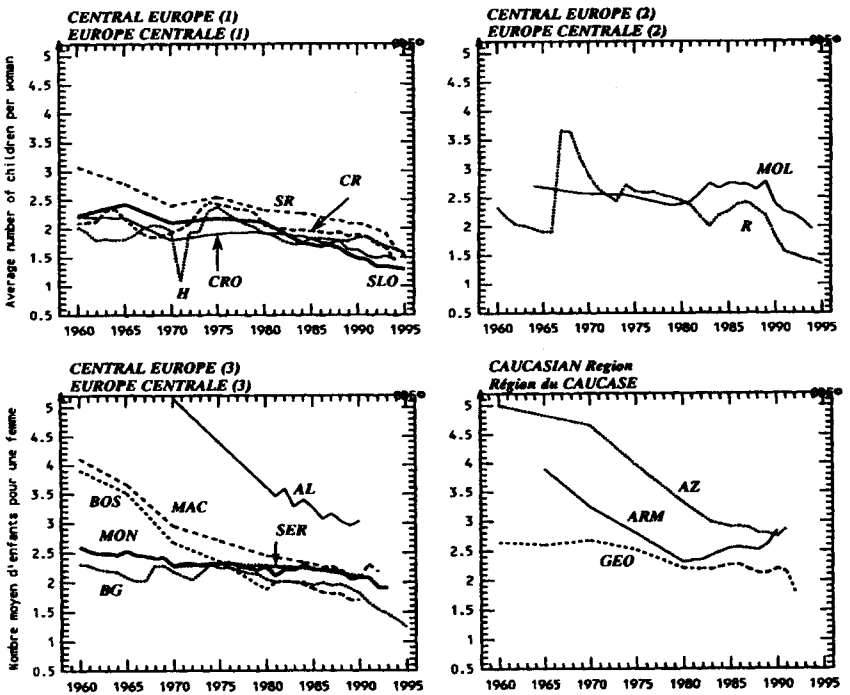


Figure III. Completed fertility of female birth-cohorts

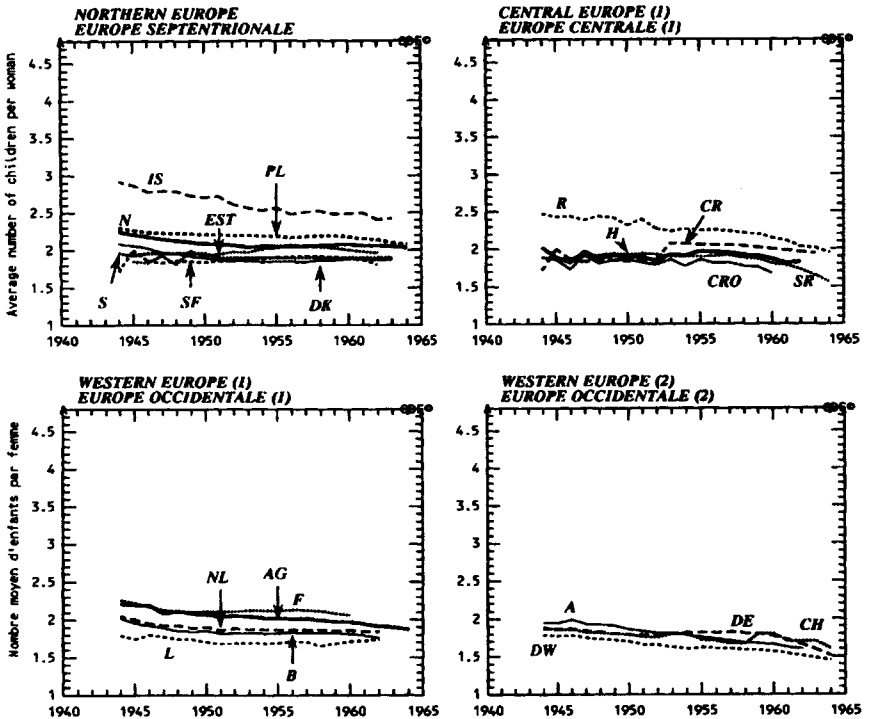


Figure III *(continued)*

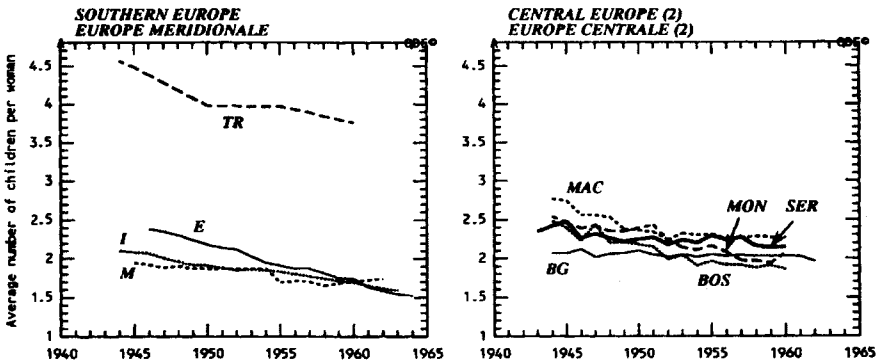


Figure IV. Mean age of women at first marriage

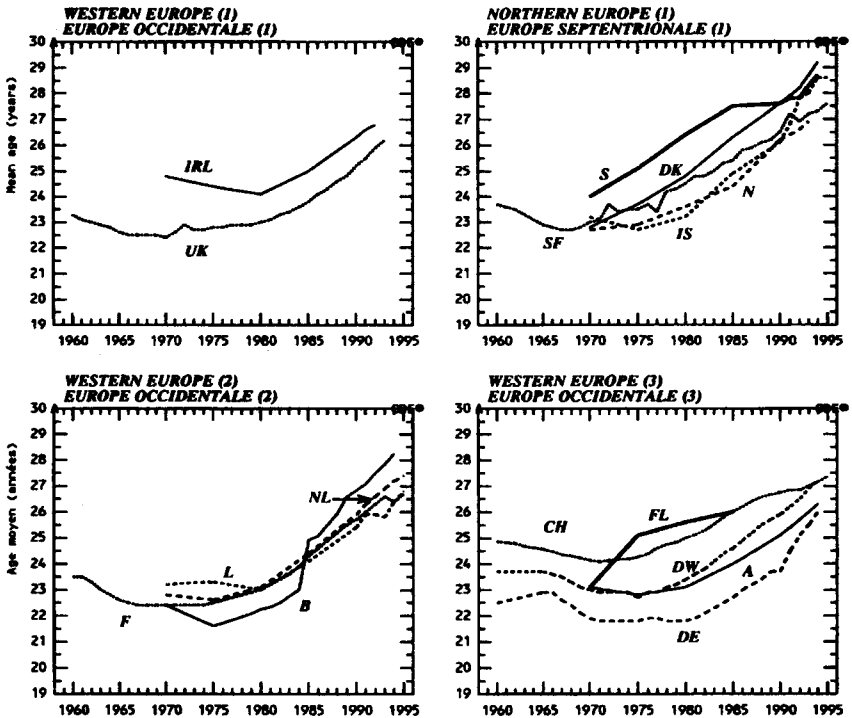


Figure IV *(continued)*

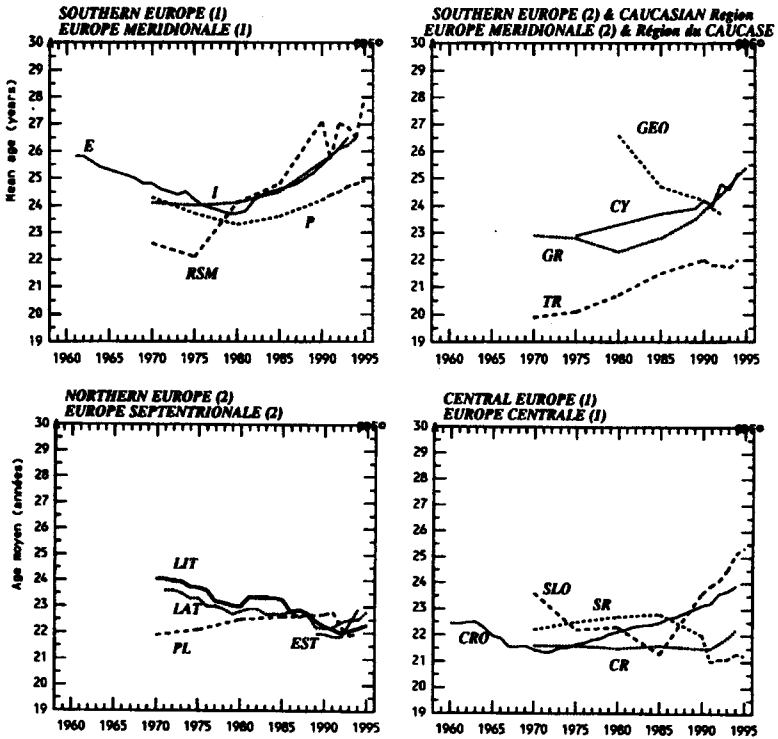
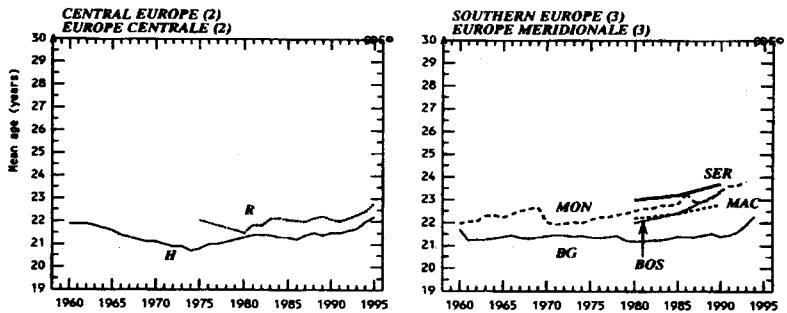


Figure IV *(continued)*



1980. Indeed, even in the brief interval of 7-10 years since 1985, the increases in these countries ranged from 1.4-2.5 years. In demographic experience, these are dramatic and rapid increases by any standard, large enough to inflict sharp distortions into the period rates over the time period during which mean age of first birth was rising so sharply.

TABLE 1. MEAN AGE OF WOMEN AT BIRTH OF FIRST CHILD: 1980 TO MOST RECENT DATA

Country	*1980*	*1985*	*Most recent (year)*	*Change 1980*	*Change 1985*
Italy	25.1	25.9	27.5 (1994)	2.4	1.6
Spain	24.6	25.4	27.2 (1992)	2.6	1.8
Greece	23.3	23.7	26.2 (1995)	2.9	2.5
Portugal	23.6	23.8	25.6 (1995)	2.0	1.8
Ireland	24.9	25.6	27.0 (1995)	2.1	1.4

Source: Calculated from Council of Europe, *Recent Demographic Developments in Europe: 1996* (Council of Europe Publishing, 1996), table T3.4.

The distortion of period rates below underlying cohort rates, caused largely by deferment of marriage and fertility, is well known to demographers but ill understood among political leaderships. Hence it is all too easy for proponents to misinterpret or misrepresent very low period total fertility rates or net reproduction rates as evidence of the long-term failure of the population to replace itself.

It is worth noting that this is exactly the mistake made by demographers and others during the 1930s. The difference is that they were largely unaware of the distortions involved, whereas anyone who has studied human fertility behaviour over the past century cannot escape the fact of such distortions.

There is an exception to the rule that cohort rates exceed period rates, and a demographically very important one: China. As Cleland has noted (1992, p. 248), the unwise marriage reform of 1980 produced a sudden marriage boom in China, followed by decline in the age at first birth. Hence Chinese period fertility rates rose during the 1980s, even though underlying cohort fertility rates were still declining.

China, however, is a special case—in many respects, but certainly in terms of the stringencies and reversals of her population policies. Other East Asian countries with very low period fertility rates, such as Japan, the Republic of Korea, Taiwan Province of China, Hong Kong Special Administrative Region of China and Singapore have, like most other low fertility countries in Europe and elsewhere, tended toward deferment of marriage and childbearing and hence to period rates that are distorted below underlying cohort rates. In the Republic of Korea, for example, female age at first marriage rose from 21.6 in 1960 to 25.5 in 1990 (Lee and Cho, 1992, p. 42).

The second possible error lies in a mis-specification by demographers and others of the boundaries of the "aged dependent" category. By demographic convention, the lower bound of this category has long been set at 65 years (or sometimes at 60 years for developing countries). This demographic convention, in turn, apparently derives from arbitrary boundaries set by Western Governments for entitlement to State-provided pensions. The first such "social insurance" or "social security" system was promulgated by Bismarck well over a century ago. It set the retirement age at 70 years, an age to which only a tiny percentage of Germans of that period could aspire. During the mass unemployment of the 1930s Great Depression, the United States Government adopted its own Social Security system. In addition to providing pensions to the "aged", one of its goals was to provide incentives favouring retirement of older workers so as to generate openings for younger workers. For this and perhaps other reasons, the United States retirement age was set initially at 65 years. Yet in the 60-to-110 years ensuing since these boundaries were arbitrarily set, the life expectancy and vitality of persons crossing such boundaries has increased dramatically.

Similarly, it is conventional to consider the age of 15 years as the boundary between childhood "youthful dependency" and non-dependent adulthood. Yet increasing proportions of persons aged 15-19 (and indeed those 20-24) have been extending the years in which they are engaged full-time in education rather than work, or have otherwise extended their period of dependency.

Surprisingly, demographic categories have not adjusted to these changing demographic realities. It is commonplace to see careful calculations of the proportion 65-and-over described as the "aged dependent" population, a definition that carries important implications for our understanding of demographic ageing as a phenomenon. Even United Nations classifications of national populations as "aged" are affected: as noted by Kono, the United Nations in 1956 defined a population as "aged" when the percentage aged 65-and-over exceeds 7 per cent. Kono argues that this threshold should now be increased to 10 per cent (pp. 75-76).

In both cases, long-accepted age boundaries may be increasingly disconnected from the real ages at which people in low fertility countries make transitions from childhood to adulthood, and from working age to "aged". Hence our conventional calculations of the "dependency ratio" may be doubly misleading.

A variety of alternative indicators of "age-based dependency" are plausible. One obvious possibility would be to shift the age boundaries upward (e.g., to 20 and 70 years) to reflect changing patterns of youth and aged dependency. An alternative would be to develop dependency measures that incrementally change as demographic circumstances change, e.g., fixing "aged dependency" not at an arbitrary year of age but instead at a fixed number of years of remaining life expectancy. Of course, if any such changes were contemplated it would be important to continue the current categorizations for purposes of historical time series.

In response to concerns about very low fertility rates, two basic types of policy responses have been strongly urged: measures to increase fertility and measures to adapt to low fertility over the long term.

1. As to the first policy response—measures to increase fertility—the following options are analytically possible:

(*a*) *Limiting access to fertility control methods*: Such policies were embraced in Eastern European socialist countries, most visibly in Romania. A fair comment would be that while such measures may have non-trivial effects upon fertility, their costs are high in terms of infringement upon personal freedom and increases in unwanted fertility and its unattractive consequences. While it is possible that the passionate politics of abortion will lead to restrictions in some low fertility countries, draconian limits upon access to all effective fertility control measures (such as were adopted in Romania) seem not only most unattractive and unwise, but also politically unlikely in liberal democracies.

(*b*) *Economic incentives to encourage higher fertility*: In the past, these have come in many varieties:

(i) Positive financial benefits intended to provide incentives for additional births: these include cash birth bonuses and child allowances, and tax preferences that increase disposable income. Such benefits may be "flat" (i.e., per child after some defined minimum) or "progressive" (i.e., increasing amounts for higher- order children);

(ii) In-kind and pension benefits: these include such measures as preferential access for large families to regulated and/or subsidized housing, and preferentially early retirement provisions or awards for mothers who have borne numerous children;

(iii) Counterweights to existing disincentives to larger families, especially those surrounding female labour force participation: such measures are typically justified as diminishing the opportunity costs imposed by additional childbearing. Benign examples of such incentives include provision of subsidized childcare services, as in the French crèche system, and extended paid parental leave required of Swedish employers. Harsh examples include measures intended to deter female labour force participation.

Gauthier notes that the adoption of such pronatalist policies appears to be unrelated to actual levels of fertility (p. 234). Among Western countries, only a very few—France, Luxembourg and Greece (plus the Canadian province of Québec)—have adopted explicitly pronatalist policies, although others such as Germany recognize that their family policies may encourage fertility and welcome such effects (p. 237). Pronatalist policies were common among the socialist countries of Eastern Europe, but many of these have been ended or allowed to atrophy since Communist rule ended. Among non-Western low fertility countries, only Singapore has embraced strong and explicit pronatalist policies, along with some more modest efforts in countries such as the Republic of Korea, Thailand and Malaysia.

There have been proposals (never adopted) from advocates concerned about low fertility in France for an official "maternal wage"—monthly payments to mothers who stay at home with young children, calculated at one quarter of the prevailing wage for employed women. During the 1980s, Eastern European countries adopted extensive measures of this type, including child allowances; birth bonuses equal to more than one month's wages for an average young working woman; maternity leave at full pay for five months; paid leave (at about 40 per cent of a woman's average wage) until the child is 3 years old; and substantial subsidies and grants in kind.

In Hungary during the early 1980s, such benefits for a three-child family amounted to over one third of average manufacturing wages (which were low). More recently, Sweden has implemented a broad range of such benefits designed to facilitate childbearing by women who work (see paper by Hoem and Hoem in this publication).

Examining past experience with such measures, most observers have concluded that their impacts upon fertility seem real, but of limited magnitude. The message here is clear: such measures can have modest effects in raising fertility levels, but to provide economically-meaningful financial incentives to families in high-wage countries would require very substantial public expenditures.

(*c*) *Increased immigration*: Under present and foreseeable demographic conditions, the potential pool of immigrants to low fertility countries is enormous and readily tapped. Indeed, most low fertility countries are experiencing increasing difficulty in restraining unlawful immigration from low-income, high fertility countries. Hence it would be quite simple for low fertility countries to augment their populations by allowing additional immigration.

However, as noted earlier, concern about low fertility is not about the number of warm bodies, but about numbers defined as part of the national or other ethnic or cultural group. Under conditions of very low fertility, a decision to invite or permit substantial immigration would produce very rapid transformations in the socially-defined composition of a population. Historically, such rapid changes have almost invariably resulted in passionate public opposition, driven by deep-seated fears of losing national or ethnic identity and/or control.

Hence immigration of a magnitude sufficient to offset very low fertility rates seems unlikely to be politically viable in most settings, unless the immigrant streams are socially perceived as "part of" or "similar to" the indigenous population. Examples include the postwar migrations of East Germans to West Germany, of the *pieds noirs* to France, of oriental Jews to Israel, of Italians to Argentina (and, more recently, back to Italy), of Japanese-origin *nisei* from Brazil and Peru to Japan, and of Angolan colonial settlers to Portugal. More moderate levels of immigration, however, do appear to be sustainable; the resulting pace of demographic change is slower, and can be accompanied by gradual changes in the relevant social definitions that facilitate public acceptance of immigration.

2. The second basic type of policy response would be the measures to adapt to the demographically ageing and ultimately smaller populations that would result from sustained very low fertility over the long term. Here it must

be emphasized that there is great variation among low fertility countries in the rate at which their populations have been, and/or are projected to, age. There are equally great differences in the extent to which such countries offer substantial income-transfer and other benefits on the basis of age.

First, the rate of recent and projected demographic aging is slow in most Western countries, but very rapid in many Asian low fertility countries. It is far easier for any society to adapt to gradual shifts in its age composition. Among low fertility regions, such gradual change is generally characteristic in Europe, less so in the United States and Canada, and much less so in Japan and Asia.

Secondly, the measurement of demographic ageing must take account of the changing meaning of years-of-life in terms of health, vitality and other aspects of "dependency", as discussed above.

Thirdly, the provision of social benefits based on age vary greatly among the diverse countries experiencing low fertility rates. While the overall "dependency ratio" (however defined) may not change much under conditions of sustained low fertility, there would be a substantial shift in the proportion of such "dependent" groups from the young to the aged category. In fiscal terms, the elderly dependent population is likely to be far more costly to support than the youthful group.

The principal social costs of the young dependent population are in education, and most low fertility countries provide free public education (at least up to university level).

For the aged dependent population, the principal costs are pensions and health care. All Western low fertility countries provide State-financed pensions. So too do some Asian low fertility countries (or areas) such as Japan, but not others, such as the Republic of Korea and Taiwan Province of China. The societal costs of health care for the aged depends heavily upon the structure of health-care finance, which varies greatly across low fertility countries. Financing of "long-term care"—sustained support for frail elderly persons who need assistance in day-to-day living short of intensive medical care—will present a major challenge to all low fertility societies, and may have significant fiscal implications for their economies.

There are a number of avenues available to Governments seeking to adapt to sustained low fertility:

(*a*) Modifying the terms of social pension provision, e.g., by raising the effective age of retirement for pension purposes, privatizing part of the pension system, or subjecting pension benefits of well-off retirees to income taxation.

> The fiscal consequences of even relatively modest increases in pensionable age are surprisingly large, because they both increase the number of years of taxability for pension purposes and decrease the number of years of pension payment. The politics of such policies, however, have operated in the opposite direction—most countries have taken measures to reduce pensionable age during the postwar period, at least until recently;

(*b*) Converting surplus age-related facilities such as schools to other purposes, and designing new facilities with inbuilt flexibility to facilitate conversion to other social purposes if no longer needed.

> Experience here is very limited. Conversion efforts have usually run into powerful local opposition in support of "the neighbourhood school", but there is potential here. Perhaps the best we can say is that there has not yet been sufficient experience with contraction (as compared to expansion) of such facilities, and that the feasibility of such approaches varies greatly depending upon the nature of political organization and finance (national? regional? local?) Hence there is much to be learned, and many pitfalls to be avoided, before sensible advice can be offered.

As Governments ponder such questions about the demographically unpredictable, one *non*-demographic prediction can be offered:

The subject of demographic change has already suffered through a couple of decades of exaggerated rhetoric about the dramatic dangers of what was called "the population bomb", the "population crisis", and so on. During this period, some enthusiasts attributed nearly all of the world's ills to what they saw as the devastating effects of high fertility and resulting rapid population growth.

This was not the view of most demographers—one of demographers' most endearing traits is that they usually attribute less significance to demographic change than do many non-demographers who view the world in ecological, theological, or ideological terms. In short, there was much alarmism about high fertility, much of which was criticized as exaggerated by leading demographers.

Hegel would have loved what has come next: increasing public discussion about the profound dangers of *low* fertility and resulting population *decline*. Like the alarms about high fertility, much of this can be expected to emanate from politicians and ideologists, of both the Right and Left, and to be permeated by highly emotive language. Wattenberg offers harbingers of the rhetoric that might be anticipated: "starkly changing demographic balance" (p. 3); "starting in the early 1960s, Western fertility went into free fall" (p. 6); "demographic Maginot line" (p. 7); "devastating western European rate of 1.6" (p. 10); "today every major nation that is modern and free is also on a demographic track that, if not changed, will ultimately decimate it" (p. 13).

Or consider the following statement made in 1984 by Jacques Chirac, later to become President of France:

> Two dangers stalk French society: social democratization and a demographic slump... if you look at Europe and then at other continents, the comparison is terrifying. In demographic terms, Europe is vanishing. Twenty years or so from now, our countries will be empty, and no matter what our technological strength, we shall be incapable of putting it to use.

The exaggerations of such statements should not lead us to dismiss legitimate concerns about sustained low fertility. Like sustained fertility levels substantially far above replacement, sustained fertility far below replacement has important distorting effects upon the age pyramid of a society. Moreover, like rapid population growth, substantial population decline has a "momentum" that makes a longstanding trend slow to change or reverse.

As noted earlier, the future of fertility behaviour in low fertility countries is essentially unpredictable. Recent sharp declines in period rates may prove in some countries to be temporary distortions resulting from rapid social and economic change, social fashion or fad, political and economic turbulence, and social movements favouring deferment of childbearing. Alternatively, currently very low period fertility rates may turn out to be harbingers of declines in cohort fertility to very low levels.

Should very low cohort rates be sustained over the very long term, the societies involved can be expected to respond with policy measures intended to ensure their demographic survival. Surely the past shows us that it is possible to undertake measures to increase fertility, though these often have proved to be costly in economic terms or in losses of individual freedoms. Economic costs may be higher in Western countries, where past fertility declines have been little influenced by official population programmes, than in those Asian countries in which effective government family planning programmes can be reduced or eliminated. Moreover, Western countries may have greater concerns about limitations on individual liberties than do some other low fertility countries such as Singapore, with different cultural and political traditions.

In short, very low fertility rates do indeed deserve serious attention from demographic researchers, including the United Nations Population Division. They are potentially as significant in policy terms as are the sustained rapid demographic growth rates that continue in some third world countries.

What the subject does not need, however, is more exaggeration and polemic. The language that has been used by some advocates bears striking resemblance to that used by the de-population alarmists of the 1930s. It is not based in factual evidence, ignores the distortions known to be affecting period measures, and fails to recognize the slowness and momentum of demographic change and our continuing incapacity to predict future changes in fertility.

As usual, Mark Twain offered advice to such advocates that is far more lucid than I could ever manage. In Twain's words:

> "First get your facts, and then you can distort them as much as you please."

NOTES

[1]These calculations are derived from United Nations, Department for Economic and Social Information and Policy Analysis, Population Division, *World Population Prospects: The 1996 Revision, Annex I: Demographic Indicators* (24 October 1996), table A.2. United Nations publication Sales No. E.98.X.XIII.5.

[2]A "period" rate such as the total fertility rate (TFR) is a "synthetic" rate. That is, it seeks to summarize the fertility behaviour in a given time period (such as a year) of women of all age groups during that year (e.g., "the total fertility rate of all women during 1996 was X"). By so doing, it provides a summary measure that is standardized for age composition, thereby avoiding the distortions of "crude" measures, such as the crude birth rate, arising from differences in the relative numbers of women of different ages in the population.

Because it synthesizes the fertility behaviour of women of all ages in a given time period, the TFR represents the lifetime fertility of no woman or group of women. (The misinterpretation of its meaning by non-demographers may arise from the simple fact that the synthetic TFR measure is normally expressed in terms of "children per woman", meaning per *synthetic* woman.)

In contrast, cohort fertility rates (such as the cohort completed fertility rate) express the average number of births over their reproductive lifetime to an actual cohort of women born during the same year or years (e.g., the "cohort completed fertility of women born 1940-1944 was Y", or "the cohort completed fertility of women married 1955-1959 was Z"). Hence, this measure does describe the lifetime fertility of an actual birth or marriage cohort of women.

[3]William Brass has strongly criticized alarms about low fertility in Britain and France, arguing that they could prove to have as little foundation as those voiced in the 1930s. Brass argues that recent below-replacement period fertility rates are actually slightly above replacement level when appropriately adjusted for large transient fluctuations that distort them; that completed fertility rates of actual cohorts of British women will be close to replacement level; and that there is almost no evidence of a 'flight from childbearing' in the United Kingdom (or in France), nor of imminent population decline or age structure imbalance. In contrast, rates in Italy and the Netherlands show clearer evidence of declines in actual fertility experienced by cohorts. Centre for Economic Policy Research *Bulletin* (London), No. 17, (October 1986), pp. 15-16.

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POLICY INTERVENTIONS IN RESPONSE TO BELOW-REPLACEMENT FERTILITY

Paul Demeny*

Stylized textbook versions of demographic transition theory envisage completion of the process by arrival to a stationary state: birth rates matching death rates, thus producing zero population growth. Given low mortality—in practical terms a survival rate to the mean age of childbearing only slightly below unity—stationarity requires a total fertility rate that falls between 2.0 and 2.1. Technicalities apart, this means that the average woman has two children surviving to adulthood. The long-term demographic logic of expecting such an outcome is simple: positive rates of population growth are eventually unsustainable, while negative rates in due course lead to extinction.

Few demographers and social scientists commenting on demographic prospects have ever taken the textbook version literally. As the social transformation that generated low fertility gathered strength in Europe and its overseas offshoots, it was widely anticipated that there would be an "overshoot"—rates of reproduction falling below the level required for the long-run maintenance of population size. In 1922, Oswald Spengler (1928 [1922]: 105) foresaw "an appalling depopulation" as one of the manifestations of the decline of the West. Adolphe Landry, the most prominent European theoretician of the "demographic revolution" identified the last stage of the transition as a long-term disequilibrium—one in which the fertility levels sink *below* replacement over a long duration (Landry, 1933). Population projections prepared during the interwar years for Western European countries and for the United States routinely assumed that fertility decline would not stop at replacement level but fall short of it. These projections showed that the age distribution inherited from the high fertility past temporarily masks the implications of the "intrinsic," that is to say, stable, birth and death rates, but below-replacement fertility eventually generates negative rates of population growth. Such a state was calculated typically to occur by the second part of the twentieth century. Demographers wrote books with titles such as *The Twilight of Parenthood.*

This outlook spawned interest in policy proposals aimed at reversing the downward trend of fertility. It was commonly realized that such attempts would

*Population Council, New York.

face difficult problems. In his 1936 book *World Population* Carr-Saunders, then the leading British student of demography, commented:

> We found reasons to believe that, once the voluntary small family habit has gained a foothold, the size of family is likely, if not certain, in time to become so small that the reproduction rate will fall below replacement rate, and that, when this has happened, the restoration of a replacement rate proves to be an exceedingly difficult and obstinate problem. (Carr-Saunders, 1936, p. 327)

The often desultory attempts of Western Governments to stimulate an increase in fertility instituted during the inter-war years amply demonstrated the validity of Carr-Saunders's point. Even when such attempts amounted to what may be legitimately labelled as concerted population policies—those in the liberal democracies of France and Sweden, and in Fascist Germany and Italy[1]—the demographic impact was at best minuscule. But this could be explained away by claiming that the prescribed medicine was administered in inadequate doses—Governments trying to stimulate fertility on the cheap. More vigorous interventions, it could be argued, could have had the desired effect.

At that time it was widely anticipated that if fertility remained low, more energetic policy measures would be applied for raising fertility. Despite the war, the early 1940s showed an unexpected and spontaneous increase in the birth rate in most low fertility countries. Demographers considered the upsurge to be temporary. Projections of Europe's population prepared for the League of Nations at Princeton under the direction of Frank Notestein envisaged the medium-term fertility trends as continuing the trend observed in the 1930s, that is, downward (Notestein, 1944). In 1950, when the baby boom was already in full swing, reappearance of low pre-war birth rates was still the common expectation in the United States as well as in Europe. Notestein (1950, p. 339) contemplated the likely policy reaction to such an event:

> Between now and the end of the century . . . . many of the forces tending toward a reduction of family size are likely to continue in effect. On the other hand, we have yet to see a nation approaching a stationary population that did not launch strong measures to stimulate childbearing. I expect that efforts to increase births will be one of the major preoccupations of those concerned with social legislation in the Western world.

As a demographic forecast, this statement was prescient. Both the amplitude and the duration of the baby boom were greater than demographers expected, yet the boom, in retrospect, was still a temporary aberration. American fertility peaked in 1957 at an improbably high period total fertility rate not much shy of 4, while Europe's less spectacular fertility upsurge came to an end around 1964. After these dates the "forces tending toward a reduction of family size" indeed came back "in effect." They also showed their impact outside the West, first and most notably in Japan.

As a prediction of policy developments, Notestein's statement turned out to be far off the mark. Despite period fertility rates that during the last quarter century have sunk below, and often far below, replacement level in many countries, and despite growing indications that completed cohort fertility rates, too, are ending up below replacement in numerous instances, a survey of pronatalist policy interventions carried out in the 1990s finds a near-empty basket. Trying to "increase births" has not only failed to become one of the "major preoccupations" of Governments of low fertility countries, but those Governments explicitly disclaim even a concern about low birth rates. The typical response to United Nations inquiries concerning population policy is that the level of fertility is "satisfactory".

Such a stance cannot be explained by Western Governments' rediscovery of the merits of placing strict limits on the role of the State in interfering with the spontaneous interaction among the citizenry, limits dictated by the principles of classical liberalism. Those principles permit government intervention when a good can thereby be secured for the citizenry that is not brought about by ordinary market processes. Avoiding sustained population decline that would be implied by below-replacement fertility could arguably be conceived as such a *public* good; indeed one affecting the very survival of the State, thus, akin to that classical core function of government, national defense. Nevertheless, even though during the post-war decades government's intervention in both economic and social spheres has expanded very greatly in all advanced industrial countries—the category roughly coterminous with countries having very low fertility—deliberate intervention aimed at increasing the birth rate has remained an exception to that dirigiste tendency.

Among the reasons post-war Western Governments have been reluctant to adopt a pronatalist policy stance, four appear particularly cogent.

First, the preeminent population issue that emerged on the global level after the Second World War was the issue of rapid population growth. That growth was triggered by the spectacular decline of mortality combined with persistent high fertility. Mortality decline was uniformly welcome; moderating rapid population growth, therefore required lowering fertility. There was widespread scepticism that fertility decline would be forthcoming soon enough and rapidly enough through a spontaneous process generated by economic and social development. Concern with the macroeconomic ill effects of rapid population growth was seen as justifying government intervention to secure the public good of lower aggregate fertility. The programmes instituted for that purpose received material assistance or at least moral encouragement from many of the low fertility countries. Even though national population issues tend to be *sui generis* within each country, there was, and remains, a perceived dissonance between providing fertility-lowering assistance and encouragement to other countries, while engaging in action at home serving a diametrically opposed aim. The international terrain was not favourable for domestic pronatalism.

Second, the phenomenon of below-replacement fertility, which was widely greeted with alarm when it first appeared during the inter-war years, came to be seen with a degree of equanimity in its post-war manifestation. To begin with, the baby boom and its after-effects made the issue moot for about a

quarter century. Amplified by substantial mortality decline and a positive balance of immigration, population growth was in fact rapid by historical standards during the first three decades after the Second World War in both North America and Europe. Owing to the resulting age distribution effect, the natural rate of increase, even if low, is still positive in most Western countries and also in Japan despite below-replacement fertility. The long-term demographic effects of the current levels of fertility thus remain largely invisible to the public as well as to policy makers. But when those demographic effects *are* understood, a calmer attitude still prevails. There is a reasonable sentiment, reinforced by increasing concern with the quality of the environment, that a degree of demographic decompression is not necessarily an unwelcome prospect, particularly in countries with an already dense population. It is also widely understood that the economic and social disadvantages imposed by a slowly declining population can be quite effectively dealt with through institutional adjustments rather than through population policy. There is also the vague expectation that population decline will eventually trigger homeostatic mechanisms that may not generate another baby boom but can be trusted nevertheless to bring fertility near to, or even back to, replacement level. A total fertility rate in the neighborhood of, say, 1.8, can be legitimately seen as pushing the day of demographic reckoning beyond the policy horizon of concern to Governments.

Third, the early post-war decades, as was noted above, witnessed a major expansion of Governments' role in the advanced industrialized countries. The modern Welfare State, present only in rudiments in most of these countries before the Second World War, has become entrenched, claiming an increasingly large chunk of the total economy—nowadays some 30 to 60 per cent of GDP—for its service activities, including income transfers. Because of the baby boom, in the competition among the numerous claims for the limited fiscal resources of the State, fertility-enhancing population policy was a relative latecomer, with all the disadvantages of that status. (When this was not the case, notably in France, where pronatalist policy expenditures were an important segment of the Government's social budget in the early post-war years, the demographic buoyancy imparted by the baby boom ensured a steadily deteriorating relative status for programmes aimed at increasing fertility.) By the 1980s, realization that Governments are overcommitted in other aspects of social policy, especially in pensions and health care, militated against major programmes to stimulate the birth rate.

Fourth, the ideological underpinnings of the modern Welfare State made it seem increasingly aberrant to identify population policy, and notably fertility policy, as a distinct policy domain. The causes of fertility behaviour were traced back to their economic and social roots; it seemed compelling to treat population matters as an integral part of social and economic policies at large. Earlier pronatalist schemes came to be seen as crude attempts to "buy babies" cheaply. Social policies could accomplish the task more subtly while serving other goals, but having also the desired demographic side-effects. Over time, the original pronatalist intent tended to be attenuated or even entirely lost. Today, most low fertility countries profess no overt pronatalist goals and downplay any expectation that the policies in question will in fact result in higher

fertility. The policies are said to be pursued because they are considered good in themselves and have been sanctioned as such by the political process. They serve redistributive goals approved by the electorate and respond to the pressure of various interest groups for a slice of the Government's social service budget. Social policy and population policy thus are inextricably confounded, bearing out Gunnar Myrdal's pre-war prediction that, in practice, "population policy will turn out to be simply an intensification of the important part of social policy which bears upon the family and children" (Myrdal, 1940, p. 205).

The shift in the dominant stream of policy thinking adumbrated above can be illustrated with brief references to policy documents adopted during recent decades at international forums addressing population issues.

The 1974 World Population Conference, which took place in Bucharest, was the first such meeting held at a formal intergovernmental level. The Plan of Action it adopted was primarily devoted to consideration of issues—especially rapid population growth caused by high fertility—affecting the less developed world. Nevertheless, a nod was given to a policy issue perceived as structurally symmetrical to the issue of high aggregate fertility. The Plan stated, *inter alia*:

> Countries wishing to increase their rate of population growth should . . . where appropriate, encourage an increase in fertility and encourage immigration. (Paragraph 18)

Because setting immigration policy was recognized as the sovereign right of the receiving country (apart from obligations vis-à-vis bona fide refugees), this amounted to a matter-of-fact recognition of the legitimacy of pronatalist policy.

The 1984 International Conference on Population, held in Mexico City, sought to improve on the above formula by noting the desired means of "encouragement," placing it explicitly in the domain of government service programmes. Recommendation 35 adopted at that Conference stated, *inter alia*:

> Governments that view the level of fertility in their countries as too low may consider financial and other support to families to assist them with their parental responsibilities and to facilitate their access to the necessary services.

Recommendation 34 went into specific detail on how "too low" fertility *should* be remedied, should Governments want to remedy it. The implicit answer was: by following the example of the family policies of Sweden and East Germany. Governments, the recommendation said, "should be sensitive to the need for":

(*a*) Financial and/or other support to parents, including single parents, in the period preceding or following the birth of a child, as well as the period during which parents assume the major responsibility for the care and education of children;

(*b*) A strengthening of child welfare services and childcare provisions;

(*c*) Maternity and paternity leave for a sufficient length of time to enable either parent to care for the child, with adequate remunerative compensation

and without detriment to subsequent career prospects, and basic communal facilities that will enable working parents to provide care for children and aged members of their families; and

(*d*) Assistance to young couples and parents, including single parents, in acquiring suitable housing.

These injunctions broadly parallel a list adopted two years earlier by the European Population Conference, but with some significant differences. There, under the evident influence of the French-German model, the key recommendation started with the favourite intervention of a State that wishes to help its citizens to raise children but also wishes to leave relevant key decisions to the recipients of government aid, and wishes to minimize the need for the building up of an elaborate service apparatus:

> Tax benefits and cash transfers to families which improve their economic conditions and partially compensate for the loss of income suffered by parents both in the period around the birth of a child, and whilst the child is heavily dependent upon parental care. (Council of Europe, 1982, p. 5)

The itemized list adopted in Mexico drops specific reference to tax benefits and adds the provision on aid to single parents. As is inevitable, any deliberate effort to influence behaviour and assist individuals according to specific individual or group criteria, incorporates and advances a particular conception of what policy makers consider the good society. The family, as the concept was traditionally understood in low fertility societies, was no longer the unique channel through which Governments might seek to increase the birth rate.

The recommendations that emerged from the 1993 European Population Conference[2] held in Geneva—one of the regional meetings organized in preparation for the Cairo Conference—further update the received policy line on matters related to fertility. There is no longer any reference to countries' or Governments' wish to "increase fertility." Fertility should be instead "appropriate," with the clear implication that below-replacement fertility may well be "appropriate." Recommendation 1 states, *inter alia*:

> . . . the major causes of the continued deterioration of the global environment are the unsustainable patterns of consumption and production, particularly in industrialized countries. Common targets should be the patterns of consumption and production that reduce environmental stress, and the encouragement of social and economic development that meets basic needs and allows for better living conditions and appropriate fertility rates.

Specific recommendations adopted at this 1993 conference lack the word "mother" (now a subcategory of child-minders) and make only indirect reference to fertility by listing social goals related to parental behaviour. In addition to government-provided services, the private sector receives mention, in the role of provider of government-mandated benefits. Thus, recommendation 4 states:

> Governments, in cooperation with the private sector and the social partners, should help the ever-increasing number of parents who desire to achieve fulfilment through both professional life and parental roles. They could contribute to making these two goals compatible by developing and strengthening social services such as child minders, crèches, kindergartens, and parental leave. In addition, they should encourage other measures to facilitate work outside the family by either parent, such as part-time activity and flexible schedules. Particular attention should be given to the needs of women, who still bear a disproportionate burden of the responsibility in the family, by introducing measures which encourage men to share these responsibilities.

Other recommendations are made for measures to compensate, "at least partially," for the costs of childbearing and child-rearing. The distancing from pronatalist objectives is implicit in the endorsement given to means-tested rather than non-income related programmes and to "targeted programmes" of income-maintenance, job creation, housing support, free or subsidized training, and preferential childcare.

The Programme of Action adopted at the 1994 International Conference on Population and Development, held at Cairo, is a far more elaborate document than its predecessors. Nevertheless, Bucharest and Mexico City-style references to possible encouragement to "increase in fertility" where fertility is "too low" are absent from the Programme. There are brief references to the "crucial contribution that early stabilization of the world population would make toward the achievement of sustainable development" (paragraph 1.11). The goal of achieving stabilization of the population in many low fertility *countries* would require an *increase* of fertility. The Programme, however, appears to envisage the path to replacement-level fertility only from the above-replacement level. The list of measures previously linked with pronatalism has become in the Programme a generalized recommendation offered to *all* countries, regardless of their state of development or their position in the fertility transition. Advocacy of an early introduction of a comprehensive Welfare State goes so far as to urge Governments to secure the "right" for such desiderata as flexitime and on-the-job breastfeeding even in the "informal sector". In paragraph 4.13, the Conference stated:

> Countries are strongly urged to enact laws and to implement programmes and policies which will enable employees of both sexes to organize their family and work responsibilities through flexible work hours, parental leave, day-care facilities, maternity leave, policies that enable working mothers to breast-feed their children, health insurance and other such measures. Similar rights should be ensured to those working in the informal sector.

The citations above adumbrate the salient components of contemporary pronatalist policies, or, rather, of social policies with a putative pronatalist by-product. They also suggest the direction in which such policies have been

evolving. They fail to adequately indicate, however, the bewildering variety of specific measures that have in fact been adopted, often half-heartedly but sometimes with great vigour, under each rubric in virtually all countries of Western Europe (broadly defined), to a lesser extent in other low fertility market economies, and, especially during the pre-1989 era, in Eastern Europe. To describe the various combinations of such policies even in a perfunctory fashion is beyond the scope of the present paper.[3] In looking at the various policy packages, it should be remembered that the absence or presence of explicit pronatalist objectives, and the stridency or tentativeness with which such objectives, if any, are articulated, are very poor predictors either of the scope and generosity of the various services made available to the population under each of the above headings. Scandinavian countries, for example, have long declared themselves satisfied with their prevailing levels of fertility, yet provision there of the types of social services that would be commonly classified as pronatalist is among the most generous.

The intent to achieve a policy impact on fertility appears to have generated even greater varieties of programmes and even more frequent and seemingly arbitrary changes and course corrections than found in the generally volatile field of social welfare programmes. A detailed history, for example, of French pronatalist policy—precursor of all such policies—or of Hungarian and Czechoslovak policies between the mid-1950s and 1989 provides remarkable object lessons of this tendency. The elements that can be perceived by policy makers as affecting the "target" population's response to various service stimuli are virtually boundless. Should a first child trigger a benefit? Should it be different for the third and the fourth? If so, by what rule is such differentiation made? Is length of spacing between children relevant? How many months should elapse before a loan granted to newlyweds becomes due if they remain childless? How to identify the most promising candidates for the allocation of a limited number of apartments in any given year and place? To what extent should benefits be made dependent on recipients' income, age, marital status? Should benefits go to mothers only or be shared by both parents? What is the best division between benefits in cash and benefits in kind? Such questions can be multiplied at will, and by the evidence of the changes in pronatalist measures, admittedly always complicated by unpredictable and inevitable changes in the total budget constraint, have been answered in sometimes subtly, sometimes considerably different fashion by successive legislatures and programme administrators, or for that matter at different times by the same legislature and the same administrative apparatus. The seemingly irresistible urge to fine-tune the programmes so as to achieve a presumed maximum demographic effect has also led to the programmes' increasing fragmentation so that perceived needs of particular subpopulations could be better addressed. The resulting pattern inevitably has been characterized by complexity, lack of transparency, temporal variability, bureaucratic arbitrariness, and high administrative costs.

Advocates of such programmes, nevertheless, can point to some success stories, success being defined not necessarily in terms of a formal cost-benefit analysis but in terms of measurable demographic impact. In the most recent period, comparisons between the approach represented by Swedish family policy

and the programmes extant (or nonexistent) in countries of Southern Europe (which now exhibit especially low fertility, although stretching back in time for a considerably shorter period than is the case in Scandinavia) suggest that the former is more effective in sustaining a socially acceptable level of aggregate fertility than is the latter.[4]

But such evaluations are made exceedingly difficult by the multiplicity of variables over and above differences in social policies that influence any particular outcome. In the absence of controlled experiments, not generally accessible to social scientists in this field, deriving firm conclusions is not feasible. A special difficulty is the temporal flexibility of fertility behaviour when fertility levels are very low. Thus short term "successes" in raising fertility—for example the sort claimed by East Germany and Hungary in the 1970s and 1980—have poor long-term predictive power. This recurrent qualification removes much of the interest from efforts to study the linkage between a given policy move and its immediate demographic aftermath. Last but not least, unintended by-products of any particular policy intervention are hard to identify, but such by-products almost certainly exist and are not necessarily benign.

Given the general thrust of the policies in question, one of their inevitable characteristics is that they cost money. Governments are not very good at achieving results by exhortation and propaganda; the chief method of influencing behaviour therefore is the dispensation of resources, either in the form of cash awards or through provision of services in kind. The origin of the Welfare State can be traced back to the compelling argument favouring the establishment of a social safety net for those individuals and families in a society that have fallen on hard times, temporarily or due to some permanent misfortune. Redistribution of incomes to that segment, as long as that segment is small relative to the total population can command wide support. But in a democratic polity it is soon discovered that redistribution is also a potential source of enrichment for any organized subpopulation, whatever its position in the income distribution, that successfully can point to a need, elevated to the rank of a right, that should be satisfied through governmental largesse. As such needs and corresponding claims to the public purse multiply, redistribution of income through the machinery of Government becomes dominated not by transfers from the better off to the minority poor, but, in a complex process, the redistributional effect of which is not easily assessed, from the non-poor to the non-poor. Since the gains and losses from such "churning" of the primary income distribution by the Government are dependent on the vagaries of the political process, and since collection and redistribution imposes heavy administrative costs and loss of allocative efficiency, the ability of the mature Welfare State to satisfy the multitude of competing and ever multiplying claims is severely limited. Each right is perceived by its claimants to be valid and well deserved: however, their satisfaction is not accomplished by manna from heaven, but has to be extracted from the overlapping groups of beneficiaries themselves. The logical endpoint of such a process would be full socialization of every important area of human need—education, health, child rearing, retirement, and possibly other fields beyond these. In such a system individuals and individual families would

be left with the equivalent of pocket money, to be spent on trivia. In exchange, government services would satisfy their basic needs from cradle to grave.

The dilemma of the evolution of the Welfare State and, within its multifarious functions, the evolution of family-friendly and fertility enhancing programmes is well encapsulated in the recommendations of the Cairo Programme of Action—recommendations whose fulfilment has to compete with equally ambitious enumerations of unmet needs in other areas of human concern about which United Nations conferences have been held. In paragraph 3.19 of the Programme, for example, it is stated, with earnest emphasis:

> High priority should be given by Governments, non-governmental organizations and the private sector to meeting the needs, and increasing the opportunities for information, education, jobs, skill development and relevant reproductive health services, of all under-served members of society.

But who are the under-served? A footnote to the paragraph just cited provides a helpful explanation:

> Children, as appropriate, adolescents, women, the aged, the disabled, indigenous people, rural populations, urban populations, migrants, refugees, displaced persons and slum-dwellers.

But if these are the under-served, who are the servers? Very largely, the under-served serve themselves, circuitously and not very well. Those operating the circuit may, however, get some satisfaction.

Within the existing paradigm, the debate centres around the modalities of redistribution of the economic pie. Ordinary economic calculus equates success in the political process with the share captured by each individual or by each subpopulation from the resources centralized in the hands of the Government. Thus the elderly, as the American example perhaps best illustrates, have been successful in capturing what appears to be a disproportionate share of those resources, evidently at the expense of others, say, young people wishing to have children but not quite able to afford them. Perhaps if the young get better organized and emit loud protests, they can recapture some of what might be rightfully theirs? Perhaps such gains will make them more willing to have and raise a greater number of children than they otherwise would have done? Such is the promise of the game played under the current rules. By all evidence, it offers thin hope for a reversal of the demographic fortunes of below-replacement fertility populations. Once this realization sinks in, perhaps societies facing depopulation will find the time ripe for moving from the domain of ordinary economic calculus to the domain of political economy: from redistributive jockeying to fundamental changes in the constitutional contract setting the rules of societal interaction. Demographic regeneration may then be within reach.

Notes

[1]For discussion of this experience see Glass, 1940; Teitelbaum and Winter, 1985; Quine, 1996; and Ipsen, 1996.

[2]Its name notwithstanding, this region includes the United States and Canada.

[3]For such descriptions see Andorka, 1978; McIntosh, 1983; Davis, Bernstam and Ricardo-Campbell, 1986; Esping-Andersen, 1996; and Gauthier, 1996.

[4]For a reasoned argument supporting this nowadays widely shared judgment see Chesnais, 1996.

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Part Three

COUNTRY PAPERS

Population Bulletin of the United Nations, Nos. 40/41—1999

THE FERTILITY TRANSITION AND PROSPECTS IN CHINA AND OTHER EASTERN ASIAN COUNTRIES

Zhenghua Jiang*

This paper provides an overview on the fertility transition in China and other selected Eastern Asian countries. It analyses the determinants of fertility decline and the prospects in the future. The paper gives the consequences of sustained low fertility level in a large country like China and analyses the possible response of society. Based on that analysis, options of population policy are raised for policy makers. The author does his best to try to find an optimal strategy to meet the needs of socio-economic development, stability of society and demands of the people.

FERTILITY TRANSITION AND THE DETERMINANTS RESPONSIBLE FOR THE CHANGE

Soon after the ending of the Second World War, a baby boom period appeared in many developing countries. The crude birth rate and natural growth rate of Thailand had increased from 39.8 per cent and 2.08 per cent respectively in 1946 to 48.7 per cent and 3.60 per cent in 1955. The high population growth rate was maintained until the early 1970s. A similar situation was found in China and the Republic of Korea. The total fertility rates in these two countries were 5.8 and 4.5 in 1970 respectively. In Thailand, TFR reached 6.1, ranking third in South-east Asian countries next to Cambodia and the Lao People's Democratic Republic. Even in an urbanized country such as Singapore, the total fertility rate was above 4 in the late 1960s. These extremely high fertility and growth rates shocked the governments of Asian countries. Since the early 1970s, the Governments of all four countries mentioned above adopted antinatality policy and implemented family planning programmes. Singapore became independent in 1965. The extremely high population density forced the Government to curb population growth. Within ten years, the crude birth rate of Singapore dropped from 34 per cent in 1965-1970 to 21.2 per cent in 1970-1975. The fertility of the people of Singapore went down to below replacement level after mid-1970s and has been at a low level since then. China, the Republic of Korea and Thailand all started their family planning

*State Family Planning Commission of China, Beijing, China.

programmes around 1970. The fertility of the Republic of Korea decreased to replacement level in mid-1980s. China and Thailand both reached below replacement level in the early 1990s. Table 1 gives the figures of these four countries. The questions are: What are determinants responsible for the dramatic change of population parameters? What are and will be the consequences of the low fertility for socio-economic and demographic development? Will the low fertility persist in the future? What should we do about the low fertility? The answers to these questions may bring us a very different future in the twenty-first century. Peace and development are still the first target for the international community. Population policy should be able to meet the needs of the socio-economic development goal and the desires of the people.

TABLE 1. CBR AND TFR IN FOUR ASIAN COUNTRIES

	China	*Korea, Rep. of*	*Singapore*	*Thailand*
		1970		
CBR *(percentage)*	37.0	31.5	22.1	40.4
TFR *(births per woman)*	5.8	4.5	3.1	6.1
		1980		
CBR *(percentage)*	17.6	21.4	17.1	28.9
TFR *(births per woman)*	2.2	2.6	1.7	3.7
		Circa 1990		
CBR *(percentage)*	21.5	15.7	17.7	20.5
TFR *(births per woman)*	2.4	1.6	1.9	2.2
		*1996**		
CBR *(percentage)*	17.0 **	15.9	16.9	18.2
TFR *(births per woman)*	2.0	1.8	1.8	2.0

NOTE: CBR: crude birth rate.
TFR: total fertility rate.
* 1996 ESCAP Population Data Sheet.
** State Statistics Bureau of China (after rounding).
Sources of data: General Indicators of Developing Asian and Pacific Countries.

The figures in table 2 indicate that in all these countries and regions, fertility was high in 1950s and early 1960s. In the late 1960s, fertility declined in Singapore, Hong Kong, Taiwan Province of China and the Republic of Korea (the so-called four little economic tigers in Asia). It is interesting to compare Singapore and Hong Kong. Both are urbanized areas. Singapore introduced a strong family planning programme dominated by the Government. In Hong Kong, it was a different story: non-governmental organizations played a key

role in implementing the family planning programme. The fertility level dropped quickly in Singapore soon after the family planning programme started. After a few years' delay, Hong Kong followed. However, both regions reached a very low fertility level within 15 to 20 years. It seems that fast economic development triggered the demand for family planning services so that people could budget their time for economic activities. The same phenomenon can be found in the coastal area of mainland China. The example of Shanghai explains the difference between urban and rural areas. In the 1950s the fertility of Shanghai was higher than that of whole country, but at the beginning of 1960s, the total fertility rate decreased very quickly. Even under the so-called "cultural revolution" when society was trapped in confusion, the fertility of Shanghai was still kept at a low level. The figures in table 3 make it clear that the cities took the lead in the view of fertility decline. The trend was soon followed by the rest of China. Socio-economic development created a solid base for fertility transition.

TABLE 2. TOTAL FERTILITY RATES IN SELECTED COUNTRIES AND AREAS OF EAST ASIA AND SOUTH-EAST ASIA

Country or area	*1965-1970*	*1970-1975*	*1975-1980*	*1985-1990*	*1990-1995*
China	5.1	4.5	3.1	-	1.9
Hong Kong	4.0	2.9	2.3	-	1.3
Republic of Korea	4.5	4.1	3.4	-	1.6
Indonesia	6.1	5.7	6.2	-	2.9
Malaysia	6.1	5.2	4.6	-	3.6
Singapore	3.4	2.6	1.8	-	1.8
Thailand	6.3	5.6	4.5	-	1.9
Japan	2.1	2.1	1.8	-	1.5

Sources of data: Compiled from United Nations publications.

It is obvious that in all four countries, family planning programmes and antinatality policies are the key factors responsible for the dramatic decline in fertility. The Government of Thailand adopted a pronatality policy. Since the early twentieth century, the Government had considered that a large population could help the country become richer and stronger. During the Second World War, the Premier of Thailand declared that with only 18 million population it was difficult to make a country powerful: a size of 200 million would be a proper target and 100 million could really benefit the country. The 1960 population census revealed that the average number of children ever born to married women reached 3.4 in Bangkok, 3.8 in other cities and 4.5 in rural areas. Thus, the population of Thailand would be doubled in 23 years if the growth rate of the late 1960s had been maintained. Finally, the Premier's Office formally announced in March 1970 its support of a voluntary family planning programme. The contraceptive prevalence rate of married women aged 15-44 increased from 15 per cent in the year 1969/1970 to 65 per cent in 1984 and further increased to 74 per cent in the 1990s. The non-governmental organizations have

made a valuable contribution to the success of the family planning programme in Thailand. Among the organizations, the Population and Community Development Association, Thailand is the most important one and Chairman Mechai Viravaidya has made a distinguished personal contribution.

TABLE 3. THE VITAL STATISTICS OF SHANGHAI AND WHOLE COUNTRY

Year	TFR (births per woman)		CBR (percentage)		CDR (percentage)	
	Shanghai	China	Shanghai	China	Shanghai	China
1950	5.6	5.3	22.8	37.0	7.7	18.0
1957	6.3	6.2	46.0	34.0	6.1	10.8
1961	2.9	3.3	22.4	18.2	7.7	14.2
1963	4.2	7.4	30.3	43.4	7.0	10.0
1964	2.6	6.1	20.6	39.1	6.1	11.5
1967	1.8	5.3	12.5	34.0	5.1	8.4
1968	2.9	6.4	14.9	35.6	5.3	8.2
1969	2.4	5.7	14.8	34.1	4.7	8.0
1970	2.3	5.8	13.9	33.4	5.0	7.6
1971	2.0	5.4	12.2	30.7	5.2	7.3
1980	0.8	2.3	12.6	18.2	6.5	6.3
1990	1.4	2.3	10.3	21.1	6.8	6.7
1996	1.0	1.8	5.6	17.0	6.4	6.6

NOTE: CDR: crude death rate.

Sources of data: Compiled from the Sampling Surveys conducted by the State Family Planning Commission of China (SFPC) and the State Statistics Bureau of China (SSB).

China has experienced a similar transition process. Traditionally, Chinese have preferred to live in an expanding large family comprising several generations. Usually, the oldest man was the head of household and controlled property and other resources of the family. Preference for sons was a strong social concept among the ordinary Chinese people. In the early 1950s, the Government of China concentrated on economic construction and health-care issues. Contraceptive methods were used only for health reasons. Very soon, serious employment and food supply problems made the population pressure visible to the Government. However, it took a long time for the pressure to be detected by the common citizens. Pushed by the painful experience of the famine period of the early 1960s, in 1964 the family planning office was established under the State Council of China and started to implement a family planning programme in large cities and selected rural areas. The reaction was quite good. Unfortunately, the storm of the so-called "Cultural Revolution" interrupted this normal procedure and brought about another baby boom to China. When the Government returned to family planning in 1973, the total population of China was

more than 800 million and curbing population growth became an urgent target. A policy promulgating late, well-spaced and fewer births was introduced and the majority of Chinese accepted this. Encouraged by the successful implementation in the 1970s, China enhanced its effort to reduce population growth. Static population and zero-growth targets were set up and late marriages, late births, and the idea of having fewer, healthier babies, only one child for each couple, was encouraged. Supported by the Government, more than 3,000 family planning clinics were built in rural areas. The total number of family planning workers reached 400,000 in 1996. According to the NGO statistics, there are 50 million people working as volunteers in their home towns. A large proportion of them are retired people. They play an important role in many small villages by making use of their respected position to teach young people.

In Thailand and China, no doubt the family planning programme is the principal reason for fertility decline. However, in Thailand the programme was mainly implemented by non-governmental organizations, and in China directly by the Government. Both ways are effective, based on each nation's situation, but, other factors also directly or indirectly affected the fertility transition in the two countries: education, socio-economic development, improvement in the health-care system and change in the way of living. Tables 4 and 5 give the basic indicators for those elements. The figures make it clear that fertility is closely related to social services indicators. The decline of mortality, particularly the decrease of infant mortality and child mortality, has strongly reduced the expected number of children of a society. Provincial data of China also show the same pattern.

Consequences of sustained below-replacement fertility in China

The low fertility level has had a series of favourable socio-economic consequences in China. The proportion of children aged 0 to 14 dropped from 36.27 per cent in 1953 to 26.73 per cent in 1995. Meanwhile, the dependency ratios had declined from 68.58 to 50.22. The immediate consequence of low fertility is to save money for nurturing children. By applying various analysis models, it has been estimated that more than 300 million births were averted from 1971 to 1996. According to economists, this trend saved about US$ 500 billion—an amount exceeding China's GNP in 1995. One third of this amount can be attributed to savings realized in the same period of time, while the rest will be reflected saving in the years to come. The input to output ratio was 1 to 17, which is, of course, a big saving for society. Some economists attribute 01 to 47 per cent of the consumption increase from 1971 to 1990 to the low population growth. The savings enable the different government levels to invest more money in productive sectors. It was estimated that at least 10 per cent of the national income growth was produced from savings derived from the low fertility.

TABLE 4. BASIC SOCIAL SERVICES INDICATORS

	China	*Korea, Rep. of*	*Singapore*	*Thailand*	*Indonesia*	*Malaysia*
Population with access to health services (percentage, 1985-1995)	92	100	100	90	80	-
Contraceptive prevalence (per cent)	83	79	74	74	55	48
Maternal mortality ratio (per 100,000 live births, 1990)	95	130	10	200	650	80
Mortality rate, infant under 5 (percentage, 1990-1995)	44	11	5	32	58	13
	47	15	7	39	72	25
Life expectancy (1990-1995)						
Female	70	75	79	72	65	73
Male	67	67	74	79	61	69
School enrolment ratio, female	81	98	86	66	77	79
Primary and secondary (percentage, 1990-1995), male	91	97	-	67	83	76
Adult illiteracy rate (percentage, 1995)						
Female	27	3	14	8	22	22
Male	10	1	4	4	10	11

Source of data: United Nations. Basic social services for all, 1997.

TABLE 5. INFANT AND NEONATAL MORTALITY IN CHINA
(*Percentage*)

Year	*Infant mortality rate*	*Neonatal mortality rate*
1944-1949	203.60	92.55
1950-1954	197.93	67.96
1955-1959	107.64	51.01
1960-1964	109.92	46.94
1965-1969	72.13	35.52
1970-1974	50.00	29.14
1975-1979	45.41	24.36
1980-1984	39.26	22.90

Source of data: Statistics of the Public Health Ministry of China.

The impact of low population growth on employment is also important to China and may be the same for other developing countries. In 1949, the labour force of China was 270 million. The number grew to 560 million in the third China census year, i.e., year 1982. Each year in the 1980s more than 17 million labourers were added to the labour market. This was a heavy pressure on the Government in respect of creating new job opportunities. From 1982 to 1990 census years, the labour force increased by 138 million. This increase is, of course, the echo of the baby boom of the 1960s. Even though economic development was tremendously quick, the number of new employees was only 125.7 million by 1990. The 1990 census data showed that 72.1 per cent were working in the primary sector, but only 15.2 per cent were working in the manufacturing sector and 12.7 per cent in the service sector. A large quantity of surplus labour exists in rural China. It is estimated that there are about 150 million surplus agricultural labourers in China. By the end of 2000, this figure will increase by 190 million to 200 million—a serious obstacle for farmers who want to invest in modern productive equipment. Compared to the standard employment structure of the world, the pattern of employment in China corresponds to that of a country with per capita GNP less than US$ 100. The extent of China's manufacturing sector corresponds to countries with per capita GNP of US$ 200. In urban areas, experts estimate there are about 20 per cent surplus employees. The serious underemployment problem leads to low economic efficiency in all industry sectors. The author expects that there will be a little more than 10 million unemployed people in urban China around 2000. However, the successful implementation of the family planning programme in China has greatly relieved the problem. The number of unemployed people could be three to four times more than projected if there were no such programme. In rural China, the surplus labour force would have doubled at the beginning of the next century if the family planning programme had not been implemented in such a resolute way. We could hardly imagine the kinds of socio-economic and demographic consequences for China and the world if 450 to 500 million surplus labour were added to a country already burdened with a population of 1.2 billion.

Low fertility benefits women and family economy too. It is clear that women in China favour the family planning programme. In traditional China, particularly in rural areas, women were considered to belong to their husbands. A woman's value was linked to her ability to bear an heir for her husband's family. There were many reports of women forced by their mothers-in-law as well as their husbands to bear more children. Since the 1950s, the situation has changed greatly. At present, there are 10.8 million female cadres in China working in different fields. Tens of thousands of women hold leading positions in all levels of Government. In rural areas, young women bear only one or two children. They have opportunities to learn new vocations and to participate in economic activities. More than 47 million rural women are employed in township enterprises. A large proportion of them have one child only. For the first time, women may take advantage of opportunities for higher education. In Jilin province of China, for example, tens of thousands of women were distinguished as female champions in different economic production fields. As more women become the primary earners and heads of households, the more power they will

have in deciding family affairs, including the number of children to have. In turn, the new style of living has changed the desire for the number of children. With higher status, women are less interested in bearing children, thereby slowing population growth. Both rapid economic growth and greater female economic participation have raised the cost of rearing children. More small families are seizing the chance to become rich. Consequently, such concrete benefits from successful family planning efforts provide examples for other women, particularly young women, because they will be able to enjoy a more modern lifestyle and more leisure time. A further consequence of low population growth is to alleviate poverty in China. Mr. Li Xiannian, the former chairman of the central Government, shocked the world in 1978 when he admitted that there were still more than 200 million people in China living below the poverty line. There are various reasons for such poverty: most of the people were living in so-called poor regions where the population size far exceeded the carrying capacity of the region. For instance, the "three Xi (west)" region in north-west China is a typically poor region where the annual rainfall is only 150 to 450 mm, while the annual water evaporation is 1,500 to 2,000 mm. The desert area increases from year to year. In the seventh five-year plan, the State Council defined 331 poor counties requiring special attention by the State. The provincial governments defined another 368 counties as poor regions requiring special treatment by the provincial governments. In 1985, the number of people living below the poverty line was reduced to 125 million. By the end of 1991 and 1996, this figure was again reduced to 80 million and 58 million correspondingly. One of the important determinants for this change was the rapid decline in population growth due to reduced fertility and organized out-migration. There are clear differentials in regional fertility and population growth patterns in these areas. High fertility is often observed in poor areas. In general, the total fertility level in poor regions is about twice the level in economically developed regions. High population growth has even forced people in certain regions of the upper reaches of the Yellow River to dig up grass roots for fuel, which causes more serious soil erosion and consumption of fuel resources. In these areas, urgent and special actions have to be taken to relieve the population pressure on natural resources and the environment. Reducing fertility level and outmigration is the only way to help these people and save the region.

However, there are also negative influences due to sustained low fertility such as ageing of population, higher sex ratio at birth etc. Effective actions have to be taken to solve these problems.

EXPECTATION OF FERTILITY CHANGES IN THE FUTURE AND RELATED POLICY ISSUES IN CHINA

Even though the family planning programme has led to a series of positive socio-economic consequences, the basic situation of China is still that of high population density and insufficient natural resources. The proportion of arable land of China to the world is less than 9 per cent. The arable land per person in China is 0.09 hectare which is much less than 0.81 of the United States of America and 0.3 hectare for the world on average. More than 300 cities in China suffer from a shortage of water supply. In rural areas, there are 50 million

people and more than 30 million livestock that cannot ensure themselves against the shortage in drinking water. Food supply, employment, housing, transportation, education and many other socio-economic problems all derive from overpopulation in China. Many scientists in China have studied the population problem from different angles and reached almost the same conclusion: the carrying capacity of the country is about 1.6 billion but from the point of view of economic development, 0.7 to 1 billion may be the optimum size of population. These figures may change over time along with the science and technology development, but no doubt China is approaching its population limitation. To guarantee that Chinese people live in a safe condition, the Government has no choice but to keep anti-natality policy. This policy will benefit the world too.

The successful implementation of the family planning programme set a good basis for China to maintain its low fertility level. Stable low infant mortality, increasing life expectancy and sustained economic development have had a firm psychological effect on the people, so that more and more people believe that the small family norm will benefit them in many ways. Surveys conducted in different regions have shown that even in rural areas, more than 80 per cent of fertile women do not want to have more than two children. A high proportion of them are even in favour of the one-child family. These young women were born in the period of implementation of the family planning programme. They received related knowledge in their school years and adopted a different lifestyle, other than that of their parents. They also know the benefits of a small family by their own experience. It is much easier to motivate them to accept family planning methods. Owing to a higher education level, they can also use the methods effectively.

Another factor in favour of low population growth is that the proportion of fertile women, particularly women aged 20 to 29, was reduced quickly due to the fertility decline of past years. Table 6 indicates that since the mid-1990s, the number of women aged 20-29 in China was gradually reduced. After 1998, the trend will accelerate. The number of women aged 23, which is the age corresponding to the highest age-specific fertility rate, has also declined. This is a demographic condition that favours low birth rate.

Table 7 gives the median variant of population projection. The projection is based on the following assumptions:

1. Socio-economic development will be continuing reasonably well, so that the desired number of children may not change dramatically in the next half century and fertility may be kept at the present level. However, the changing age structure of population will help China to reach zero growth of population.

2. Mortality in China will decline in the next century due to the improvement of medical science, health service and living standard. However, a high probability for life expectancy exceeding 90 years cannot be seen, although some scientists suggest that life expectancy may extend to 130 in the next century.

3. Sustainable development is a big concern to the Government. Synthetic actions will be taken to attract people to accept small families and make

farmers benefit from family planning programmes. Some projects, aiming at quality services, prosperous families, new family projects etc., are very successful in different provinces of China. This will consolidate family planning in China in the future.

4. Urbanization will help people to change their lifestyle and views on reproduction. Progress in education will also be a strong factor favouring modern views on population growth.

5. Population momentum will push China's population to grow in the next 30 to 40 years.

TABLE 6. FERTILE WOMEN IN CHINA: 1981-2000
(*Millions*)

Year	*Number of women aged 15-49*	*Number of women aged 20-29*	*Number of women aged 23*
1981	245.4	81.26	8.14
1982	252.0	83.68	6.88
1983	260.0	88.27	6.01
1984	268.5	90.85	6.18
1985	276.7	93.90	11.02
1986	284.5	96.70	13.39
1987	291.7	98.44	11.97
1988	298.9	102.10	12.18
1989	305.2	109.44	11.66
1990	310.4	116.32	11.17
1991	314.8	122.72	12.79
1992	318.9	123.72	13.25
1993	323.0	122.17	12.94
1994	326.8	121.17	12.63
1995	329.5	119.04	12.03
1996	332.6	116.87	11.83
1997	335.8	114.69	10.97
1998	337.3	111.06	10.05
1999	338.4	106.77	9.49
2000	339.4	102.06	9.01

Source: Public Health Ministry of China.

Table 8 illustrates the results of population projections done by different research agencies. All of these forecast that China will reach zero population growth rate by the middle of the next century. It is very unlikely that China will lift its curb on population growth in the years to come.

TABLE 7. MEDIAN VARIANCE OF POPULATION PROJECTION FOR CHINA

Year	Total population (millions)	Number of births	Birth rate	Death rate	Growth rate	Proportion of population aged 65+
			(percentage)			
1995	1211.21	20.63	17.12	6.57	10.55	6.25
1996	1223.88	20.67	16.98	6.56	10.41	6.38
1997	1238.09	22.39	18.20	6.66	11.54	6.51
1998	1251.60	21.87	17.57	6.71	10.86	6.67
1999	1264.40	21.31	16.95	6.77	10.18	6.81
2000	1276.53	20.80	16.37	6.83	9.55	6.95
2001	1288.07	20.36	15.88	6.88	9.00	7.08
2002	1299.12	20.03	15.49	6.95	8.54	7.20
2003	1309.78	19.80	15.18	7.01	8.17	7.30
2004	1320.10	19.63	14.93	7.08	7.85	7.39
2005	1330.16	19.54	14.75	7.16	7.59	7.49
2006	1340.07	19.57	14.66	7.23	7.42	7.59
2007	1349.94	19.70	14.65	7.31	7.34	7.67
2008	1359.85	19.93	14.71	7.39	7.32	7.75
2009	1369.86	20.21	14.81	7.48	7.33	7.84
2010	1379.95	20.49	14.91	7.57	7.34	7.96
2020	1468.66	19.97	13.63	8.57	5.07	11.05
2030	1520.84	18.70	12.31	10.08	2.23	14.67
2040	1538.25	18.95	12.32	12.05	0.27	19.08
2050	1528.60	18.10	11.84	12.84	-1.00	19.38

Source: Public Health Ministry of China.

4. Urbanization will help people to change their lifestyle and views on reproduction. Progress in education will also be a strong factor favouring modern views on population growth.

5. Population momentum will push China's population to grow in the next 30 to 40 years.

Table 8 illustrates the results of population projections done by different research agencies. All of these forecast that China will reach zero population growth rate by the middle of the next century. It is very unlikely that China will lift its curb on population growth in the years to come.

Table 9 gives some of the indicators from the median variant of population projection given in table 7. The ageing process will be accelerated after the 2020s. Owing to the tremendous size of the Chinese population, labour supply will not be a problem in any case. Of course, necessary actions such as finalization of social security systems, adjustment of the socio-economic structure etc. should be taken in time so as to meet the special needs of the population. Most possibly, China's population will reach zero growth rate between 2030 to 2040. The maximum population size will fall in the region of 1.45 billion to 1.61 billion.

TABLE 8. OUTPUT OF POPULATION PROJECTIONS BY DIFFERENT RESEARCH AGENCIES

Research agency	*Year to reach maximum population*	*Size of maximum population (billions)*
SFPC variance 1	2039	1.531
SFPC variance 2	2046	1.603
SSB	2050	1.599
Information Centre	2044	1.550
Information Institute	2040	1.548
CPIRC	2043	1.557
Beijing University	2041	1.569
Chinese People's Univ.	2031-2035	1.520

NOTE: SFPC: State Family Planning Commission of China.
SSB: State Statistics Bureau of China.
CPIRC: China Population Information and Research Centre.

CONCLUSIONS

Four stages of population policy may be identified in China.

1950s: No explicit policy. 1950s is the baby boom period for the world. The Chinese were busy reconstructing their families, and it took time for the Government to discover the population problem since it was more concerned with economic construction and social development, health care, education etc. No explicit population policy was announced in this period.

1960s: Family planning was introduced in selected cities and counties; one of the most important reasons was the rapid growth of population in the 1950s. Special offices were established in selected cities and counties such as Shanghai, Beijing and Tianjin to implement family planning and to get experience.

1970s: The family planning programme was generally introduced at the beginning of the 1970s: the principle of the programme was late marriage, fewer births and spaced births. One-child families were encouraged in different ways in different regions; two children were all right, three were too many.

1980s and after: Late marriage is encouraged, with late births, and fewer and healthier babies; couples are encouraged to want one child. In rural areas, a second child should be spaced at four or five years. Minority nations are also encouraged to plan families, but there are fewer regulations. Provincial governments are responsible for their minorities.

So far the family planning programme has been implemented quite well. More attention has been given to improving the quality of service to couples in recent years. Successful experiences of the programme are so called "three firsts", namely, education first, regular service first, and contraceptive use first; and "three combinations", namely, combination with local economic development, economic activities of the family and happy prosperous family life. Special emphasis is also given to women's projects, such as quick-rich cooperation team, gold bridge projects etc. All these projects provide women with

TABLE 9. ELDERLY POPULATION IN CHINA: SELECTED YEARS

Year	Population 60+ (10,000)	Population 65+ (10,000)	Age 60+ (percentage)	Age 65+ (percentage)	Sex ratio 60+ (percentage)	Sex ratio 65+ (percentage)	TFR	Life expectancy Male (years)	Life expectancy Female (years)	Median age (year)	Dependency ratio, 15-60 (percentage)	Aging index (percentage)
1950*	4 040	2 434	7.32	4.41	81.69	74.27	5.29	60.12	63.31	21.68	77.29	42.92
1960*	4 691	2 842	7.09	4.29	80.59	73.67	3.99	62.12	64.81	20.89	79.68	41.05
1970*	5 341	3 250	6.44	3.92	79.49	73.06	5.75	63.62	66.31	20.09	82.06	39.42
1980*	7 192	4 564	7.29	4.62	86.09	79.48	2.32	66.43	69.35	21.58	67.98	39.48
1990	9 874	6 416	8.64	5.61	91.08	83.69	2.31	67.00	72.00	24.42	56.77	41.45
2000	12 881	8 795	9.99	6.82	90.59	84.28	2.00	68.60	74.00	28.77	56.73	43.80
2010	16 817	11 086	12.08	7.96	88.50	82.39	1.95	70.60	76.50	32.79	49.86	46.63
2020	24 019	16 926	16.07	11.33	86.54	81.23	1.95	72.60	79.00	35.07	56.32	48.64
2030	35 708	24 299	22.89	15.58	85.48	79.38	1.90	74.60	81.50	38.50	70.11	50.72
2040	42 265	33 538	26.56	21.08	82.11	77.94	1.85	76.60	84.00	41.43	75.80	52.10
2050	47 070	36 208	29.52	22.71	80.12	74.03	1.80	78.60	86.50	42.75	83.89	52.68
2060	50 275	40 344	32.19	25.83	80.20	75.72	1.75	80.60	87.50	44.23	89.12	53.22

*Calculated from the data from *China's Population Compiled (1949-1985).*

information, technology and financial support to help them actively join the economy and have less time to produce children. The project seems to be very successful.

China's experience is an example showing that a sound development policy should be formed by taking population issues into consideration and vice versa. The fundamental base for national policy decision is the value system of a nation. Through thousands of years, the Confucian teaching has become the centre of the value system of oriental countries. Confucianism tells us that people should set the stabilization and prosperity of the country over individual interests, and the ruler of the country should treat his people kindly. Even today, the basic idea is that only when you have a strong and rich country will the interests of your family be safeguarded. The moral criterion of oriental society tends to encourage people not only work for themselves, but also exercise responsibility to the society by controlling their behaviour. This is the grass roots of the integrated population and development policy of China. The changing views of expectation on number of children have proven that the present population policy is accepted by the Chinese people.

From the point of view of socio-economic development, the goal of China's maximum population size in the long run is 1.5 to 1.6 billion, which will be reached in the middle of the next century. Under the constraint of the upper limitation of the population target, the goal for population size in year 2000 is below 1.3 billion. The economic development target for the middle of the next century is catching up with the intermediate developed countries. The immense population growth of China is a serious constraint on socio-economic development and improvement of people's livelihood. It has brought about great pressure on the country's employment, education, housing, transportation, medical and health care, and social welfare. There are also heavy population pressures on natural resources and ecological environment. In China, actions have been and will be taken to solve the problems:

(*a*) The family planning programme of China is a combination of the target-oriented and clients-oriented style with emphasis on the services. Successful examples may be found in all provinces of China. Improving the quality of family planning and maternal and child health care will also receive much more emphasis;

(*b*) High priority will be given to promoting women's status through different means, including improvement of their educational level, strengthening implementation of the Law on Protection of Rights and Interests of Woman etc.;

(*c*) Basic national policies on resources and environment protection will be actively implemented so as to ensure a sustainable development process. Appropriate industrial and technological policies should be formulated and implemented;

(*d*) The population programme will be linked with social welfare and other social programmes, such as those devoted to poverty alleviation, health-care services etc. Thus, the population plan is integrated with the development plan;

(*e*) Migration and urbanization will be promoted in a planned manner. Through urbanization, people will change their style of life and hence change their view on expectation of family size. Planned migration will lead to better population distribution and promote socio-economic development;

(*f*) Protection of human rights is an important principle for China to form her population policy. The concept of human rights is closely related to the cultural background and value system of a nation. Fundamental human rights should benefit both individuals and society.

China takes a positive and responsible attitude towards global population and development issues. The Chinese Government has set the country's population and development policies based on a culture that has been deeply rooted for thousands of years. However, China will do her best to enhance mutual understanding with other countries of different cultural background and value concept.

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THE FUTURE OF FRENCH FERTILITY: BACK TO THE PAST, OR A NEW IMPLOSION?

*Jean-Claude Chesnais**

Birth control is not an invention of contemporary times. Writing two centuries before Christ, Polybius said: "the birth rate throughout Greece has now declined to a very low level and the population has decreased greatly, such as the towns stand empty and the land neglected, although there have been no protracted wars or epidemics ... There are no more children born in Greece ... Today's men no longer want to marry or raise a family. At the very most, they will agree to one or two children". Other well documented cases are those of the Roman Empire or the Republic of Venice. Emperor Augustus had no child and adopted one. The Roman Army had to recruit foreigners, notably German soldiers and the territory of the Empire was finally occupied by immigrants.

If we consider the last two centuries, there are two striking cases: the first is that of Vienna after the collapse of the Habsburg Empire, when the net reproduction rate fell to the historically unprecedented level of 0.25 during the 1930s. The other and probably the most significant by its depth and duration is that of post-Napoleon French society (1815-1945); this peasant society practiced intensive family planning with a strong preference for the one-child system (preferably a son) in many regions. Sub-replacement fertility was a deeply-rooted phenomenon in French modern history. If we except a small fraction of birth cohorts, those which contributed to the post-war baby boom (1946-1973), stimulated by the uniqueness[1] of the family policy of the time, the birth deficit was a permanent characteristic of women born since the Napoleonic era. Women born at the end of the nineteenth century presented a net reproduction rate of only 0.7, thus a fertility gap of 30 per cent (table 1). France which, from the Middle Ages to the Revolution (1789), was by far the only super-Power of Europe, progressively lost its former supremacy in politics and language. The population explosion in the British Isles all through the nineteenth century produced the context for a new world order; and England became the first colonial power dominating nearly half of the planet on the eve of the First World War.

* Institut national d'études démographiques, Paris.

TABLE 1. NET REPRODUCTION RATE OF FEMALE BIRTH COHORTS: FRANCE
(*Per woman*)

Birth cohort	*NRR*	*Birth cohort*	*NRR*
1826-1830	0.95	1901-1910	0.79
1831-1840	0.96	1911-1920	0.89
1841-1850	0.98	1921-1930	1.07
1851-1860	0.92	1931-1940	1.12
1861-1870	0.86	1941-1950	0.99
1871-1880	0.81	1951-1955	0.95
1881-1890	0.74	1956-1960	0.91*
1891-1900	0.68	1961-1965	0.86*

NOTE: NRR: Net reproduction rate.
* Our estimates.
Sources: A. Landry, *Traité de démographie*, Paris, 1945, p. 332; P. Festy, La fécondité des pays occidentaux de 1870 à 1970, Paris, 1979: J. P. Sardon, *Cohort fertility in member States of the Council of Europe*, Strasbourg, 1990.

THE DEMOGRAPHY MIRACLE

After the shock caused by the Depression followed by the war years (1929-1945), there was a sudden rise in fertility, encouraged by a vigorous pronatalist policy. French fertility, which during a century and a half had been the lowest in the world, became suddenly one of the highest in the West. This inversion of the international ranking cannot be explained without reference to the massive reallocation of public resources in favour of child-rearing families. But the baby boom was finally a short historical parenthesis in a secular trend; the so-called "pronatalist policy" was progressively abandoned to pure political rhetoric and, as elsewhere, the generations of prosperity replaced the generations of deprivation. More hedonistic mentalities emerged and the golden age of family, religion and solidarity vanished after two decades.

This baby boom was often interpreted as a cycle; but this a misconception since the rebound was not general, but limited to a part of the West, and, above all, was followed by an unexpected steep drop. A flat and sometimes still declining fertility under the common reference of demographers—the replacement level—occurred. In the usual framework, this line (the replacement) was seen as the bottom line; this is explicit in the classical demographic transition theory, according to which the post-transitional stage is defined as a new "regime of equilibrium", and implicit in long-range population projections published first by Frejka (1973) then by the World Bank, and, until recently by the United Nations. The so-called "Easterlin hypothesis" did not work: the baby boom was unique; it did not repeat as predicted. The "timing effect" assumption did not work either: young couples tend to wait longer to have children, but they have many fewer children than their parents did. Thus, endogenous explanations are not valid. Demography cannot explain demography. If the fertility rate can be influenced by the relative size of young adult cohorts (Easterlin's view) or by age at family formation (timing scenario), these demographic elements

are short-sighted. The massive spread of sub-fertility in very diverse cultural settings (Europe, Northern America, Eastern Asia, mega-cities of the third world etc.) is a great demographic transformation. It is deep, long-lasting and transnational, and hence requires a global vision, and it reflects a change in mentalities, in public mood all over the developed—i.e., urbanized—world. And France could not be an exception, even if there are remains of the original pronatalist policy of the Second World War period.

AN OPEN FUTURE: CONFUSION AND DISCONTINUITY

Nobody knows what the future will be like. Will fertility recover or continue to decline? Will it stabilize and, if so, at what level? Will it describe long-term fluctuations and, in that case, along what mechanism? If we had to bet, we would say that fertility will remain below the replacement threshold and that the proportion of missing births will become the crucial variable or the main unknown parameter. This birth dearth would depend on local circumstances: relative economic conditions of young parents (especially mothers), institutional factors (protection of parenthood and childhood), ideological mood ("Zeitgeist" or spirit of the time), or social capital (civism, public organization etc).

The French Republic is founded on two key words: "Liberty" and "Equality". The realization of these aspirations in a context of stressful competition for money is harder for large families than for childless couples or for individuals. As in other detraditionalized societies, money is becoming the centre of life and most conversations deal with prices, gains, profits, not with God and not with topics like socialism versus capitalism etc. Money is the new ruling dictator, the universal religion of the present in regions like the West but also in the Far East, the former Soviet Union, China and so on. The power of financial capitalism has never been so important as at the present day when the value of national currencies or of money is not fixed by national leaders but by outsiders who speculate on their short-run self-interest; so-called policy makers have a narrow margin for action. The construction of supra-national entities like the European Union has a similar confusing impact; people tend to consider national interest as old-fashioned and have a blurred view of their own identity. Neighbours become friendly, and there is no more "enemy" (as Germany was once in France, or communism for half of the planet during the cold war of 1946-1991). The notion of demographic awareness becomes meaningless, except for a few minorities under siege. This impression of belonging not to France but to a vague, flexible and extensible Europe abolishes the legitimacy of a national population policy. The nature of the population problem is the same for the whole of Europe as much as for a single country like France, but the solution is much more complex: neither national political leaders, nor public opinion, nor the Eurocrats know who has to do what; the subject is hot and controversial. Decision makers tend to solve only narrow and immediate issues; they do not dare to discuss the main vital questions like the survival of their own civilization and legacy. Political correctness is also widely diffused; many intellectuals have replaced Marxism by a new, soft ideology, consisting of simplistic slogans: population ageing is not really a problem; immigration is not really a problem; the latter (immigration) is the proper response to the former (possible

depopulation). The "mediacraty" leaves no room for nuance and respect for both universalism and national interest; this is the triumph of Utopia (no State, no border) and extremism (no immigration) over realism.

Children are non-citizens; as a matter of consequence, they have been forgotten by the Welfare State. In France, for five decades, child benefits are adjusted only on the basis of the Consumer Price Index, not on productivity growth. The politically implicit logic is clear: if the pensioners, the sick or the unemployed share the benefits of economic growth, the children are not entitled to this privilege. There is no child lobby; children do not vote. Even now (1997), after half a century of sustained under-indexation of family allowances, inside the Commission des Comptes de la Sécurité Sociale, nobody dares to put the finger on this inconsistency, while representatives of all kinds of lobbies debate their own benefits or contributions for the next six months. As a consequence, the share of childhood policy among the total social expenditures is regularly diminishing from year to year. Democracy is, in fact, governed by a chaotic mosaïc of lobbies working against demography.

Many other factors converge in the same direction. The lack of flexibility of the French labour market is well known among economists; this rigidity has a huge cost, mainly paid by young women. The increase in female labour force participation is largely an illusion since the vast majority of these additional "active" women are unemployed or have only part-time or menial jobs. Such an ambiance is not propitious to optimism and to fertility. The new Government elected in the spring of 1997 is still conservative, since it took the decision to increase the minimum wage and to reduce firing rights or, in other words, to give more protection to people on the job (older workers) than to people out of the job (younger potential workers). Since 1968, the minimum wage has permanently increased faster than the mean wage (in 1997, the minimum wage corresponds to 60 per cent of the mean wage, an international exception); employers prefer to invest in productivity (or capital) than in costly and vindictive labour. France is the only country in the world where the number of jobs has remained quasi stable (or fixed) since the end of the nineteenth century. This passive—or Malthusian—view of employment (called "social treatment") of jobless people has a devastating impact on the mood and behaviour of the youth. Unemployability is a growing pattern. Huge numbers of youngsters prefer staying longer at home with their parents or having short-term contracts in order to alternate working and free periods. Doing so, they remain protected by their parents or by the State. They prefer security to responsibility. This is also part of a vicious circle: the demographic recession (fall in the number of young households) depresses internal demand and job creation.

Population rhetoric is confiscated by populist leaders of the extreme right wing who want to restore traditional values (no right to abortion, no career women etc.), preserve national grandeur and get rid of foreign workers. Very few responsible political leaders proclaimed they were pronatalist (Mitterrand did, as De Gaulle did, but he did not adapt his actions to his promise). It is impossible to imagine a consensus on this priority as was the case at the end of the last war. During the coming four decades, the number of potential retirees (who are the baby boomers) will double, thus creating a tremendous pressure on the

cost of labour and on employment perspectives. Competitiveness will be further threatened by the new international economic order or the emergence of the Asian demographic giants: the two "billionaires" (China and India).

A FURTHER DECLINE IS PLAUSIBLE

For all of these reasons, I would argue that a fertility recovery is not likely. A short review of the trends of the last half century shows a continuous decline (table 2).

TABLE 2. TOTAL FERTILITY RATE: FRANCE, 1946-1996
(*Average children per woman*)

Period	*TFR*
1946-1964	2.81
1965-1973	2.56
1974-1982	1.91
1983-1990	1.80
1991-1996	1.70

NOTE: TFR: Total fertility rate.

An assumption of 1.5 to 1.8 for the total period fertility rate seems reasonable for the coming decade; a further decline is then possible if there is no effort to facilitate the convergence between the desired number of children (2.1 or more, depending on the surveys) and the real one (1.7). If government authorities, local bodies, enterprises, non-governmental organizations mobilize to remove the obstacles to child raising, then fertility could rise. In this regard, there's much to be done, since the Family Welfare Index (FWI) has steadily declined since the 1960s. Such an index includes three pillars: financial transfers, space provision (housing, crèches, playgrounds, schools) time allocation (parental leave, flexitime, additional years of pension contribution); the total money value of these three components is then combined. France ranked first in the West during the two decades following the Second World War; then Scandinavian countries and the United Kingdom took the lead. If this relative deterioration continues, the French fertility is likely to fall further and reach the present EU average (1.4-1.5 children per woman). In the longer run, the bust can deepen under the pressure of the inversion of the age pyramid (prohibitive taxation, loss of dynamism).

OVERVIEW AND CONCLUSION: A PERMANENT DISEQUILIBRIUM

A fertility recovery is not impossible, but it would probably be limited, not sufficient to ensure the demographic equilibrium (replacement level), and the structural factors working against this assumption are so strong that it would require three unlikely conditions: the end of massive youth unemployment, a deep modernization of family policy in a feminist direction and a relinking of

individual fertility to social security benefits (especially pensions). The most plausible scenario for the decades ahead, according to the author is a new slow slide.

NOTE

[1]This uniqueness has something to do with the political history of the nation, namely the fear of becoming a German colony. The population contract gave a sizeable advantage to Germany; during a period of 75 years (1870-1945, France spent 10 years under German occupation). At the end of the third invasion, political leaders of all ideological sides decided to put an end to demographic weakness and hence to launch a vigorous pronatalist programme.

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THE FUTURE OF THE FAMILY AND FUTURE FERTILITY TRENDS IN GERMANY

Jürgen Dorbritz and Charlotte Höhn*

MAIN STATEMENT

There is no doubt that an increasing fertility trend in Germany cannot be expected, either in the near future or on a long-term basis. The total fertility rate (TFR) could stabilize at the present level in the most favourable case; that is, if the progressive population polarization into a family sector and a non-family sector and the individualization of living arrangements came to a halt. Another variant that is just as possible is a renewed fertility decrease after the year 2000, which will occur if the behaviour pattern "single and childless" continues to spread. A renewed fertility increase or even a stabilization of today's level would require that more families have three or more children. The pattern of having few children, developed in a long tradition, does not allow for such an assumption, however.

There are no arguments that could support a fertility increase in Germany. After taking the analysis of the demographic situation into consideration, it appears that the assumptions made in the United Nations population prospects in the medium variant (the most probable variant) concerning an increase in fertility in Germany cannot be substantiated.

BASIC THESIS

Social institutions have a behaviour-controlling effect. With respect to future fertility trends, this control function will be carried out by the marriage/family institution. For this reason, we propose the basic thesis, that future fertility trends are interrelated with the institutional changes taking place in marriage and the family. Should the social change that is taking place in modern industrial societies lead to a further deinstitutionalization of marriage, then a future fertility increase appears impossible. Deinstitutionalization of marriage means that there is a loss of obligation and commitment with regard to this living arrangement. With this, a broader differentiation of living arrangements will take place and individualized lifestyles will have a better chance to spread. When marriage and reproductive behaviour remain linked, as is the case in

*Bundesinstitut für Bevölkerungsforschung, Wiesbaden, Germany.

Germany, the spread of individualized living arrangements sets limits for a fertility increase.

INSTITUTIONAL CHANGE OR DEINSTITUTIONALIZATION?

There is wide agreement among sociologists and demographers that the institutional aspects[1] of marriage and the family have lost their importance to a great degree. There are differing opinions, however, as to which direction the institutional changes will take. In our opinion, assumptions concerning future fertility trends will depend heavily on the answer to this question.

The contributions to this discussion can be summarized in three theoretical concepts, at least for the German-speaking area.

1. *The thesis of the decay of the family*

Extensive deinstitutionalization can be observed in the area of marriage and the family. Deinstitutionalization means that marriage is experiencing a loss of obligation and commitment. To begin with, this does not automatically mean that people no longer marry or remain in a married state. Rather, deinstitutionalization means that the individual range of options for living arrangements becomes larger because they are not sanctioned by society (Hoffmann-Nowotny, 1987, p. 160 and 1997, p. 120). With this, living arrangements that are not based on marriage and which might have a stronger individualized character, have a greater chance of spreading. The consequence of this is the break-up of the mainstream "family" model with its structural and cultural anchors. This will be replaced by a multitude of changing and less stable living arrangements. Deinstitutionalization, as such, leads to a consistent individualization and pluralization of living arrangements (the individualized singles society).

2. *The thesis of the reduction of institutional quality*

Institutional reduction, that is, limited deinstitutionalization, means relaxed obligation when choosing a pattern of action for family formation (Tyrell, 1988, p. 145). Indications of this are that being married does not automatically result in living together, living together does not entail a married state, marriage and parenthood are drifting apart and the sequences of personal biographies are no longer standardized. Marriage, as the legal institution, that is, supported by society, is maintained, but it is losing its general standardizing effect. Alternative forms are accepted to a greater degree by society. The result is an expansion of individualized living arrangements that do not replace the institution of family, however.

3. *The thesis of institutional change*

In the process of specialization with regard to emotional and intimate functions, marriage/family has changed in meaning and function, but its meaning has not become less important (Nave-Herz, 1989, p. 220). The aspects of partnership and parenthood have even been upgraded institutionally. People choose between the types of partnership "marriage" and "informal union", the

latter at first taking over the function of marriage. There is no general trend away from the married state, rather the course of the phases leading up to marriage has changed. When couples live in an informal union on a permanent basis, this is seen as a rejection of the traditional bourgeois marriage ideal, but not a rejection of partnership life styles. Living arrangements that are consciously chosen as a counterpoise to marriage remain infrequent.

The above three models have differing consequences for future fertility trends:

Model 1 appears to lead to a further decline in fertility. An increasing, strong individualization is inevitably connected with a growing childlessness, and the expansion of this behaviour pattern leads to a decline in fertility.

Model 2 could be connected with a stabilization of the present low fertility rate. Limited individualization tendencies lead to population polarization. A population group with individualized living arrangements faces a group that prefers living with a partner in arrangements that include children as a rule. A clearly progressive fertility trend does not result from such a demographic situation.

Model 3, on the other hand, is open for a future increase in fertility. There is a general orientation towards partnership-based living arrangements that support the meaning of the institution. The formation of partnerships is linked with an orientation towards children—motivations leading to marriage usually arise owing to a desire for children or the birth of children. If the share of persons with individualized living arrangements remains small, childlessness remains limited, and the conditions for fertility increase appear favourable. A necessary requirement here, however, is that large-size families with several children become established in the demographic system.

In the following analyses we wish to assess which of the three models describes the demographic situation in Germany and which trend family formation takes.

FAMILY FORMATION IN GERMANY—THE DEMOGRAPHIC ANALYSIS

The trend of family formation in Germany/West Germany[2] with a focus on the post-war era, is characterized by four main tendencies.

1. *The general fertility trend*

At first we would like to examine the long-term trend of the total fertility rate (see figure I). When the German Reich was established in 1871, women had almost five children on average. The secular fertility decline began in the last quarter of the nineteenth century. Distorted through the influence of wars and crises, the total fertility rate quickly reached levels below population replacement (Höhn, 1991, p. 84). Occasional catch-up effects after the First World War and during the era of the Third Reich, as well as during the post-war baby boom of the sixties—the era of the "golden age of marriage", brought only

temporary changes, to the fact that fertility had been below replacement level since 1925.

The first fertility decline around the turn of the century is the more important one in Germany. This demographic transition was essentially completed in 1925. Since that time there has been a low fertility trend. The second, less important but more frequently discussed fertility decline took place between 1965 and 1975. This decline can be explained, in part, with the post-war baby boom. The post-war euphoria, based on West Germany's economic miracle and East Germany's socialistic take-off atmosphere, had led to this fertility increase. It was further enhanced by the almost complete entrance of generations into marriage, so that the sixties were also called the "golden age of marriage".

The second fertility decline in West Germany had levelled off around 1975 (see figure II). This ended a short, high fertility episode that was atypical from a historical perspective and which led to a low, yet stable fertility level. Up to 1975, fertility trends in both parts of Germany ran parallel. After this time, diverging trends were noted for the former German Democratic Republic (GDR). At first, a pronatalistic social and population policy after 1976 led to a temporary fertility increase, which clearly slackened off in the second half of the eighties. Fertility increased when people caught up with postponed births and realized births that had been planned for later. The short time-span of this fertility increase shows the uppermost limits of a pronatalistic population policy aimed at a sustained fertility increase. After 1990, social change with the accession to the Federal Republic of Germany led to a drastic fall in fertility (see the appendix for the "demographic shocks" in eastern Germany).

2. *Change of the parity-specific structure*

For assessing future fertility trends, it is not just the level of the TFR that is of interest, but rather the structural changes behind it. In particular, we must consider the parity-specific distributions, the ties between marriage and reproductive behaviour and its age patterns. Our opinion is that the change in parity structure plays an important role here (see table 1).

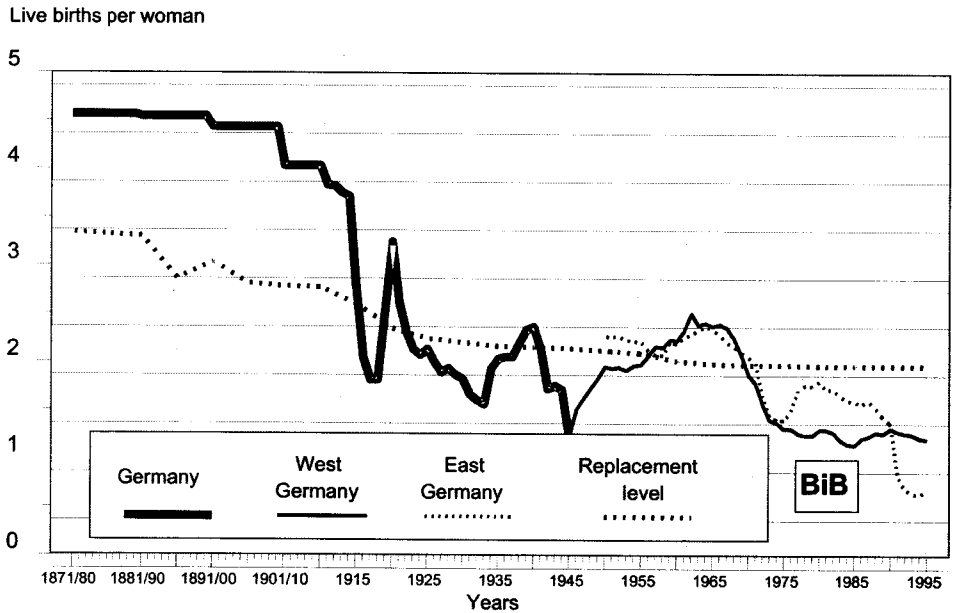
Parity distribution of live births showed two main trends in Germany/West Germany:

(*a*) The decline in final family size of female cohorts, born between 1940 and 1945, was due to a decline in the share of women, who had three or more children. At the same time childlessness was low, so that the two-child family became predominant;

(*b*) In the younger cohorts (after 1950) the share of second, third and following children remains unchanged. The two-child family continues to dominate. There is a decrease in the share of first children and an increase in childlessness, however.

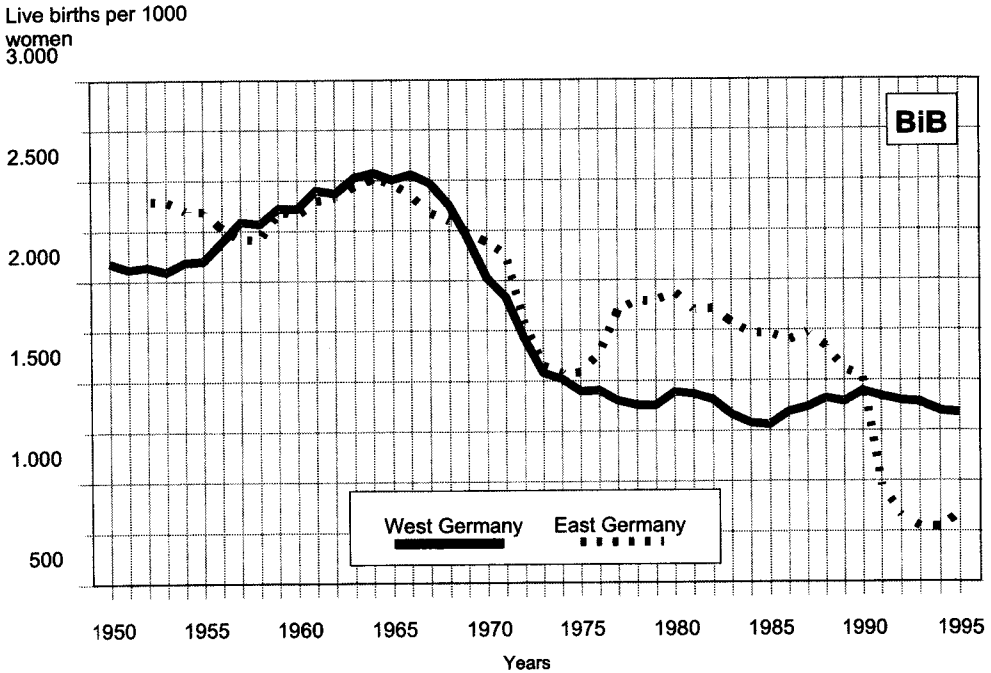
The second fertility decline after 1965 still involves a reduction in large families (3+ children). Yet we can already discern the influence of childlessness, that once again started to increase. In the younger cohorts that were born after 1950, the decreasing share of larger families is no longer important. We

Figure I. Total fertility rates: Germany, 1871-1995



Source: Federal Statistical Office: K. Schwartz (1991), (1997).

Figure II. Total fertility rates: Germany, 1950-1995



Source: Federal Statistical Office, Germany.

TABLE 1. WOMEN BY COHORTS AND NUMBER OF CHILDREN IN GERMANY: COHORTS 1901/05-1960

Cohorts	West Germany, number of children				Cohorts	East Germany, number of children			
	0	1	2	3+		0	1	2	3+
1901/05	26	26	23	25					
1906/10	22	26	26	26					
1911/15	19	28	28	25					
1916/20	18	29	29	24					
1921/25	17	29	29	25					
1926/30	14	28	31	27					
1931/35	10	24	33	33					
1940	10.1	23.6	39.4	27.0	1940	8.9	33.2	47.4	10.5
1945	13.3	26.9	29.4	20.4	1945	8.5	33.0	47.7	10.8
1950	14.9	27.2	39.5	18.5	1950	6.0	29.3	49.6	13.1
1955	19.4	24.3	38.5	17.8	1955	6.0	25.7	53.7	14.6
1960	23.2	21.6	37.4	17.8	1960	10.6	20.6	54.0	14.8

Source: Federal Institute for Population Research, Statistical Office of the former German Democratic Republic; K. Schwarz (1997), p. 26; J. Dorbritz and K. Schwarz (1996), p. 234.

can only observe an increase in childlessness, which has reached 23 per cent in the 1960 cohort. An increase to around 30 per cent is expected for younger cohorts.

A high share of childlessness is not a new phenomenon historically. Of women born at the beginning of the century, more than 20 per cent remained childless. They lived their fertile age span under extreme conditions, however, and the deaths of men during the First World War limited the number of men who could form a family. The high share of childlessness today—we speak of the new childlessness—has a different background. For the most part it is voluntary and closely connected to the changes in living arrangements. We must also consider that the historical development has weakened the social norm of "having children is a part of normal life," and hence social control.

3. *Desire for marriage*

When comparing the total first marriage rates for the cohorts 1930 to 1960, the propensity to marry has continually decreased (see figure III). Twenty to thirty years ago marriage was a matter of course. Over 90 per cent of the cohorts born in the thirties and forties married at least once in their lifetime. The first-marriage tables of 1960/62 for the old federal territory shows that in a group of 100 18-year-olds, only 5 per cent remained never-married. We can no longer expect almost complete marriage with regard to younger cohorts. Only 70 per cent to 80 per cent of the 1960 cohort will get married. The desire for marriage is clearly declining.

4. *Postponement of family formation*

Concurrently with the decline in the desire for children and marriage, a postponement of the first marriage and the birth of the first child has taken place (see table 2). In West Germany in 1960, people married on average at the age of 23.7 (women) and 25.9 (men). In 1996 the average ages were 27.7 (women) and 30.1 (men). The age of a married woman at the birth of her first child rose from 24.86 (1961) to 28.35 (1996) years.

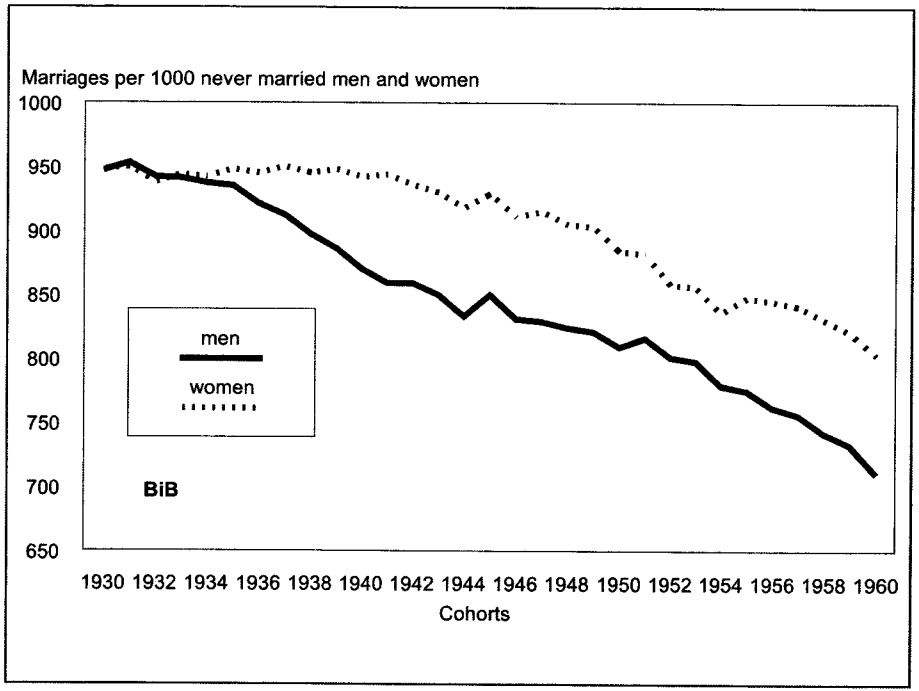
Postponement of family formation leads to two considerations that are important for the assessment of future fertility trends:

(*a*) High average ages at first marriage and at birth of children lead to very high shares of single and childless persons in the younger cohorts. If the pattern of late family formation consolidated, the established (partly estimated) share of never-married and childless persons would have to be modified. If this occurred, then we would merely expect these trends to weaken, but not to reverse;

(*b*) There is a close connection between age and not marrying: childlessness. The risk of remaining unmarried and childless increases with a continued postponement of family formation. At first, no conscious lifelong decision is made against marriage and children; rather there is a gradual postponement that consolidates into a lifestyle, in which, above all, there is no room for children. With this, one of the main motives for marriage disappears.

The shifting of family formation to an increasingly later age is a factor that has supported the decrease in the propensity to marry and the permanent low

Figure III. Total first mariage rates: Germany, cohorts 1950-1995



Source: Federal Institute for Population Research, Germany.

fertility level. Births and marriages that have been postponed at an early age will not be compensated for later. Since average ages continue to increase, we have a factor here that indicates we will not see a renewed increase in the desire to marry and have children.

TABLE 2. AVERAGE AGE AT FIRST MARRIAGE AND FIRST BIRTH: GERMANY, 1950-1996

	Age at first birth (married mothers)		*Age at first marriage*			
			West		*East*	
Years	*West*	*East*	*Men*	*Women*	*Men*	*Women*
1950	..	23.4[a]	28.1	25.4	24.6	23.2[b]
1960	24.9[c]	22.2	25.9	23.7	23.9	22.9
1970	24.3	22.5[d]	25.6	23.0	24.0	21.9
1980	25.2	22.1[d]	26.1	23.4	23.9	21.8
1990	26.9	24.9[e]	28.4	25.9	25.8	23.7
1996	28.4	27.3	30.1	27.7	29.0	26.7

[a]1952.
[b]1955.
[c]1961.
[d]All mothers.
[e]1991.
Source: Federal Statistical Office, Germany.

DISCUSSION OF THE RESULTS

There is no doubt concerning the main results of our demographic analysis; there is a decreasing wish to marry, at least in western Germany, which is associated with increasing childlessness. As the birth of children is not seen separate from marriage (illegitimacy ratio in western Germany in 1996: 13.7 per cent), this leads to a demographic situation where the population polarizes into a family sector and a non-family sector (vgl. Strohmeier; 1993: 13 / Höhn and Dorbritz; 1995: 159). Here we define family as the co-residence of at least one parent with at least one child. The core of the family sector comprises married couples with children and includes single parents and unmarried couples with children. The non-family sector primarily contains singles. Included there are also childless couples and childless informal unions, as well as those "living apart together". In concise terms, population polarization in a family and a non-family sector means that married couples with children form one pole, while unmarried and childless people form the other pole.

This polarization is especially marked in the cohorts that have entered the family life cycle since the eighties. The trend of shifting shares between both sectors, has led to an expansion of the non-family sector. This has occurred owing to increasing childlessness and a declining desire for marriage.

With this, the demographic situation in Germany can be relatively clearly classified under Model 2. The institution of marriage has been formally

maintained as a behavioural pattern offered by society, but it has lost its normative character.

The complete family has remained the dominant living arrangement. Deinstitutionalization can be recognized in the increasing trend of individualized living arrangements. Still, a pluralization of the different living arrangements has not taken place within the context of this development. The large majority of the population continues to live in only a few different living arrangements among which the individualized living arrangements are gaining in importance.

The constituent groups of the family and the non-family sectors can be found in table 3. Here the data of the micro census have been prepared age-specifically, according to partnership and children. This allows a description of the extent of population polarization. Living with children is the criterion of classification. Accordingly, in the age groups 30 to 34 approximately one third, and in the ages 35 to 44 approximately one fourth belong to the non-family sector. The last figure conforms to the figure that had been expected, based on the share of childless and unmarried people. If we look at the core groups, approximately 8 per cent—14 per cent singles and around 51-64 per cent couples with children—are at opposite ends in respective age groups.

SCENARIOS OF FUTURE FERTILITY TRENDS IN GERMANY

West Germany belongs to the countries where changes in the living arrangements in the form of a polarization are relatively advanced. This individualization and polarization of the living arrangements will have a lasting effect on fertility trends of the future. Based on demographic trends, it appears that we can exclude a sustained renewed increase of the total fertility rate. Two scenarios have a certain probability to occur:

(*a*) Should the polarization of living arrangements be caused by a temporarily limited increase in individualization, then the family and non-family sectors in Germany will more or less coexist in a stable side by side scenario. The continued dominance of the family sector will lead to a stabilization of the total fertility rate at its present level.

Fluctuations around the present level in a range between 1.2 and 1.6 appear possible here. It does not appear probable, however, that there will be a sustained fertility increase to the upper level of the range (1.6). The necessary requirement for this would be an increase in the share of three- and four-child families to compensate for the existing childlessness. Such a development appears to be quite unlikely, given the consolidated pattern, with its low average number of children.

(*b*) The polarization and individualization of the living arrangements continue to develop. Such a trend is situated in the demographic and social situation of Germany in the nineties.

TABLE 3. POPULATION AGED 18 AND OVER BY AGE GROUPS AND LIVING ARRANGEMENTS: WEST GERMANY, 1994
(*Percentage*)

Age groups	Total (1000)	Singles		One-parent families	Couples				Never married, living in the parents' household	Other
					Married		Consensual unions			
		Never married	Previously married		Without children	With children	Without children	With children		
		NFS	NFS	FS	NFS	FS	NFS	FS		
18-24	5 432	12.9	0.4	1.0	5.1	6.6	7.0	0.6	64.3	2.1
25-29	5 452	19.7	1.4	2.3	13.4	27.3	11.1	1.7	21.4	1.8
30-34	5 356	13.6	2.6	3.6	11.8	51.4	5.7	2.2	7.6	1.4
35-44	9 241	7.5	4.1	4.6	11.3	63.7	2.9	1.8	2.9	1.2
45-54	8 748	4.6	7.1	4.0	29.8	49.0	2.4	0.8	1.1	1.3

NOTE: NFS: Non-family sector.
FS: Family sector.
Source: Federal Statistical Office, Germany; Micro Census.

To be mentioned from a demographic point of view are the following factors:

High and increasing divorce tendency (1996: 35.3 per cent after 25 years of marriage)

Increasing childlessness that could exceed 30 per cent

The tradition since the beginning of this century of having small-sized families, and a consolidation of this behaviour pattern

A declining propensity to marry and remarry

Postponement of family formation

The main factor that could effect a further fertility decline is a possible further growth in childlessness (Hoffmann-Nowotny, 1997, p. 18). In addition to the course of demographic trends, a series of factors supports the assumption that we might see such an increase:

(*a*) A critical look at the conditions that apply with regard to compatibility of family and job underscores the decisions of women against having children. Professional careers are increasingly being given precedence over family formation, where this decision is supported by the male partner with regard to "child free" lifestyles;

(*b*) The preference for "child free" lifestyles without financial and time restrictions, or the avoidance of biographic commitments at a premature date, manifest themselves in a sharp increase of singles-households in the 20-35 age groups, or as the case may be, in a prolonged stay in the parental household ("Hotel Mama");

(*c*) The inability of family policy to promote births, whereby the family policy of the Federal Republic of Germany has never and will never follow such an objective. In our opinion, it is basically difficult (and expensive) and, at best, only possible in the long run to establish conditions which would make early family formation easier and more attractive;

(*d*) A reduced solidarity of the relationships between generations. To a large extent, provisions for the elderly are not the personal responsibility of each individual. In Germany, persons who remain childless can maximize their later old age benefits and factually avoid the solidarity involved in the generation contract. In an ageing population, on the other hand, the increasing costs of a government pension scheme reduce the financial scope of a family policy.

Should an expansion of the non-family sector go hand in hand with an increasingly widespread childlessness, then a fertility decrease will be the unavoidable consequence. A decline of the total fertility rate to a value between 0.8 and 1.2 could then be possible.

APPENDIX

The demographic situation in eastern Germany

The social change that started in eastern Germany as a result of accession to the Federal Republic of Germany—the complete exchange of the social system—created a "demographic shock" with regard to family formation and dissolution (see table 4 and figure IV). The total fertility rate fell from 1.57 (1989) to a value of .77 (1994). Even more drastic declines can be found in the total first marriage and divorce rates, while the share of births out of wedlock and the average ages at first marriage and at birth of the first child have increased.

TABLE 4. TOTAL FERTILITY RATES, TOTAL FIRST MARRIAGE RATES AND TOTAL DIVORCE RATES: EAST GERMANY, 1980-1996

Years	*Total fertility rate*	*Total first marriage rate*		*Total divorce rate*	*Illegitimacy ratio (per cent)*
		Men	*Women*		
1980	1941.8	787.0	813.8	32.0	22.8
1989	1572.3	685.0	759.6	36.9	33.6
1990	1496.0	575.1	637.0	22.3	35.0
1991	963.9	282.1	312.3	6.3	42.0
1992	830.4	279.2	317.8	7.5	41.8
1993	775.2	293.8	342.9	14.3	41.1
1994	772.9	317.8	379.3	18.0	41.4
1995	812.9	332.2	402.7	19.3	41.8
1996	926.5	333.6	408.9	21.4	41.8

Source: Federal Statistical Office, Germany; Federal Institute for Population Research.

N. Eberstadt (1994, p. 137) points out the uniqueness of the situation. "Such an abrupt and precipitous drop in fertility is unprecedented for an industrialized society during peacetime. In the past, human populations have on occasion experienced a sudden and dramatic reduction of childbearing of comparable proportions, but only during times of catastrophe, desperate privation and widespread loss of life."

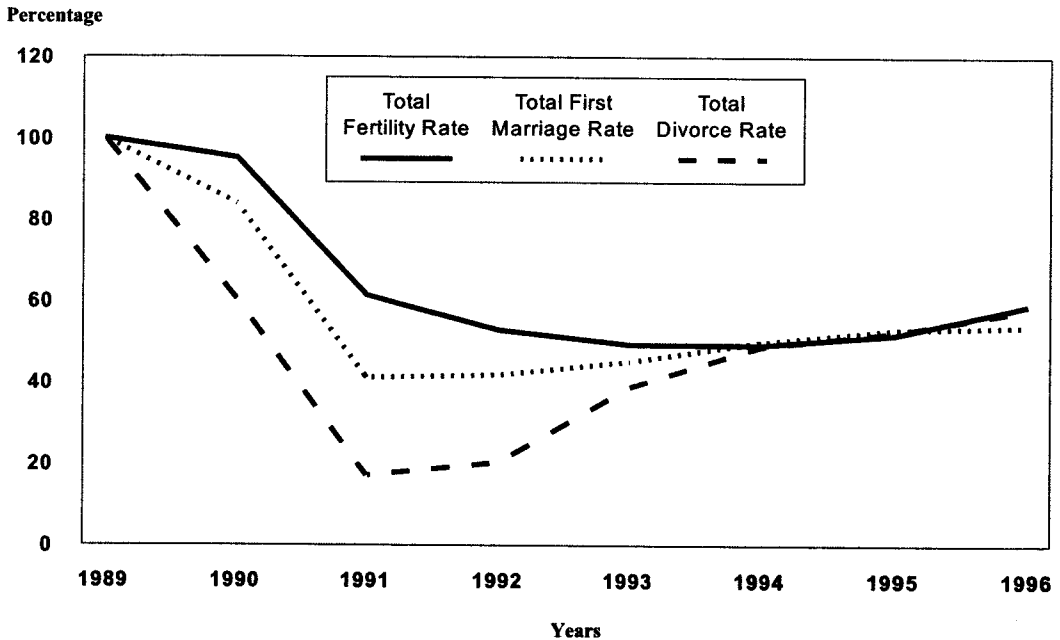
The "demographic shocks" can be explained by uncertainty of the future, and the fears and anxieties resulting from this with regard to a person's own future and the future of one's children. Social changes in eastern Germany, that had crisis characteristics for many people (the threat of unemployment and actual unemployment, a change in the system of social security, a loss of perspectives in one's life), led to concentrating on overcoming the actual social situation (Dorbritz, 1997, p. 263). Social change was countered with stability in the areas of life that can be individually controlled—births, marriages or divorces were renounced.

At the present time there is a gradual renewed increase in the rates of fertility, marriage and divorce (see table 4). On a long-term basis, we can assume that the behaviour patterns in the eastern and western parts of Germany will become more similar, whereby behaviour patterns that arise out of tradition (such as the high illegitimacy ratio) could turn out to be long-lasting. On the other hand, other "socialist" patterns—marriage and births of children at an early age—appear to be changing rapidly.

Demographic change could take place as a generation-specific process:

Younger people (in 1995 approximately up to the age of 25) will continue to grow into the western German age pattern, year by year, with later marriages and later births. Their behaviour disposition contains a possible polarization of living arrangements. Loss of importance with regard to marriage and children, a high dissatisfaction potential concerning the conditions under which to live with children, and a pronounced pessimistic view of the future, could be the basis that can bring about a polarization and individualization of living arrangements in eastern Germany.

Figure IV. Total fertility rates, total first marriage rates and total divorce rates: East Germany, 1989-1996
(1989 = 100 per cent)



Source: Federal Statistical Office, Germany; Federal Institute for Population Research.

Older cohorts (over 25 years of age) will not undergo a polarization of living arrangements because their biographic decisions had mostly been made by 1991. It appears typical for these persons that they will carry on living with the shock reaction with the symptoms of discrepancies between relevant values and actual behaviour. Partnerships and children have remained relatively important to them, but at the moment there is little evidence that the family formation phases that were interrupted in 1991 will be taken up again.

The case of eastern Germany, however, is not only interesting because we have a description of the influence of rapid social change on family formation. With regard to "low fertility", we can also look at it to ask how low the total fertility rate can sink today in a modern, socially stable society that has a high degree of social security and prosperity. Even though we cannot answer this question with any certainty, we would assume a total fertility rate of 0.8 as the lowest limit.

Notes

[1]In sociological terms social institutions are perceived as stable and sustainable patterns of human behaviour sanctioned by social control and/or individually.

[2]The special situation in eastern Germany since 1991, with its extremely low fertility due to the social change taking place there, is dealt with in an appendix. The deformation of the fertility trend since German reunification, which is more of a short-term nature, has only limited explanatory value when looking at future long-term fertility trends. For this reason, this trend will only be dealt with marginally.

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RECENT FERTILITY CHANGE IN IRELAND AND THE FUTURE OF IRISH FERTILITY[1]

James McCarthy and Jo Murphy-Lawless***

SUMMARY

This paper describes the substantial change in fertility that has taken place in Ireland over the last twenty years, analyses the evolving social context that has brought about such change, and provides two possible scenarios for the future of Irish fertility. Between 1975 and 1995, the total fertility rate in Ireland declined from 3.55 to 1.87, a decline of almost 50 per cent that effectively ended Ireland's position as the high fertility outlier in Europe, a position it had held at least since the beginning of the twentieth century. This decline in overall fertility was the net result of sometimes dramatic changes in more refined indicators of fertility and marriage behaviour. Both first marriage rates and marital fertility rates declined throughout the period. The same period was also marked by changes and refinements in reproductive and marriage laws, which have provided greater access to contraception, access to information about abortion, and, as of 1996, legalized divorce. The Irish fertility rate may continue to drop, as more women take advantage of new or more readily available options to prevent pregnancy and birth. Or, fertility may rise and level off slightly below replacement level, as demonstrated in countries of Northern Europe.

Throughout the twentieth century, Ireland has been widely recognized as a demographic outlier in Western Europe. The Irish demographic regime in this century can be characterized by high rates of out-migration, especially of women, late marriage, high rates of permanent celibacy, low rates of cohabitation, low rates of non-marital fertility, and very high rates of marital fertility. Although Ireland did experience some decline in fertility in the first half of the twentieth century, the decline was considerably less than those that took place elsewhere in Europe. In 1950, in spite of continuing late marriage and substantial permanent celibacy, Irish total fertility was still 3.3, among the highest in

*Center for Population and Family Health, Columbia University.
**Centre for Women's Studies, Trinity College, Dublin.

Europe. Throughout the 1970s, TFRs were still above three births per woman, and Ireland could still be described as the outlier in terms of European fertility.

However, Irish fertility began to change dramatically in the 1980s. Coleman (1992) and Murphy-Lawless (1987) have chronicled this rapid change; TFRs at the end of the decade of the 1980s were approaching replacement level, having been 3.2 at the start of the decade. Coleman (1992) and Murphy-Lawless (1995) were both confident that Irish fertility in the 1990s would drop below replacement level, converging with levels that had been achieved decades earlier in other Western European countries. Our goal in this paper is to examine recent fertility changes in Ireland into the 1990s and determine whether the Irish fertility rate will continue to fall below its current rate of 1.87 or rise towards replacement level. We propose to extend the analyses of Coleman (1992) and Murphy-Lawless (1995) into the mid-1990s, taking into consideration the social and economic changes that have accompanied Irish demographic change, namely: access to contraception, access to information about abortion, and the legalization of divorce, all of which have been at the forefront of political debate in Ireland for the last 15 to 20 years (Murphy-Lawless and McCarthy, 1997).

IRISH FERTILITY: 1975-1995

During the last two decades, from 1975 to 1995, fertility in Ireland fell by almost 50 per cent: the total fertility rate was 3.55 in 1975 and 1.87 in 1995. Data on each of these twenty years are presented in figure I. The greater part of the decline took place during the 1980s, when the TFR dropped from 3.23 in 1980 to 2.08 in 1989.

1. *Age-specific fertility*

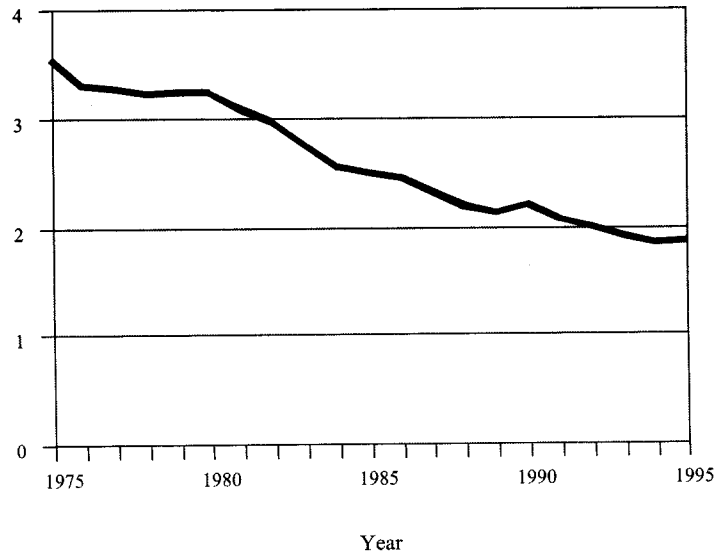
Table 1 sheds additional light on this decline by presenting patterns of age-specific fertility over the same period of time. The results show that fertility declined at all ages, with most of the decline concentrated in the middle part of the reproductive age span, between 20 and 39. Fertility among the youngest Irish women, those 15 to 19, changed least from 1975 to 1995, declining from 22.7 per 1,000 at the start to 15.4 per 1,000 at the end of the period. Throughout the entire period, fertility among young Irish women was considerably lower than that experienced by young women in other industrial countries; in the mid-1990s adolescent fertility was twice as high in England and Wales and four times higher in the United States. Fertility among women of all other ages declined considerably. Absolute levels of decline among women 40-44 and 45-49 were less, but only because fertility at these ages was already low in 1975. The greatest absolute declines took place among women 20-24 and 25-29; from 141 and 227 per 1000 to 51 and 106, respectively. In relative terms, this amounts to fertility in 1995 that is only 36 per cent and 46 per cent of what it was in 1975. Somewhat smaller, but still considerable declines took place among women aged 30-34 and 35-39.

TABLE 1. AGE-SPECIFIC FERTILITY RATES: IRELAND, SELECTED YEARS, 1975-1995
(Births per 1,000 women)

Age	Year				
	1975	*1980*	*1985*	*1990*	*1995*
15-19	23	23	17	16	15
20-24	141	125	87	66	51
25-29	227	202	159	148	106
30-34	173	166	138	128	127
35-39	105	97	75	65	61
40-44	38	30	22	15	13
45-49	2	2	2	1	1

When describing overall changes in Irish TFR, using data from figure 1, we observed that the decline in TFR has continued since 1990, but at a slower rate of decline than was observed through the 1980s. The more detailed, age-specific data presented in table 1 show interesting differences between the 1980s and the first half of the 1990s. Among women at both ends of the reproductive age span, that is those 15-19 and 30 or over, fertility declines have very

Figure I. Total fertility rates: Ireland, 1975-1995



clearly levelled off since 1990. By contrast, declines among women in their 20s have continued. Considering data from each of the years between 1990 and 1995 (data not shown) reveals some differentiation with this rather narrowly defined group. Among women 20-24, fertility continued to decline through 1994, before turning up slightly in 1995. There is the possibility, considering data points for 1993, 1994 and 1995, that the decline among women 20-24 is levelling off. However, substantial fertility declines among women 25-29 continued through 1995, and show no signs of slowing, let alone levelling off. The slowing, in the 1990s, of the overall fertility decline is clearly the result of patterns that differ by age; during the 1990s, women in their 20s (especially those 25-29) continued to have substantially fewer children, whereas both younger and older women have experienced almost level fertility in the very recent past.

2. *Changing Irish marriage patterns*

The concentration of fertility decline (over the entire period under study) in the age group of the 20s suggests the possibility that a traditional Irish fertility-regulating mechanism might be operating, namely changes in marriage patterns. Could the decline observed during recent decades be explained by changes in age at marriage? Data presented in table 2 lend some support to this explanation. There was a dramatic decline, in both absolute and relative terms, in first marriage rates among women aged 20-24, with rates declining from 151 per 1,000 in 1975 to 64 per 1,000 in 1990. Women aged 15-19 actually experienced a greater relative decline, from 23 to 4 per 1000; early marriage was rare in Ireland in 1975 and declined to almost non-existent by 1990. (By contrast, early marriage rates in England and Wales were three times higher in 1975 and five times higher in 1990.) Among women aged 25-29, first marriage rates declined early in the period under consideration, but then fluctuated and recovered some of the decline later in the period. However, even after the recovery later in the period under study, first marriages rates among women 25-29 in 1990 were more than 10 per cent below 1975 rates for women the same age. Among women in their thirties and forties, first marriage rates remained largely unchanged throughout the period. Overall, between 1975 and 1990, age-specific marriage rates declined among women younger than 30, and remained relatively constant among women 30 and older. Because rates among older women remained constant, and did not increase, while rates among younger women decreased, it is likely that these changes represent a movement away from formal marriage, as opposed to an increase in age at marriage. Had the changes been reflective of a change in age at marriage, one would expect to see decreases at younger ages balanced by increases at older ages.

TABLE 2. AGE-SPECIFIC FEMALE FIRST MARRIAGE RATES: IRELAND, SELECTED YEARS, 1975-1990
(*Marriages per 1,000 single women*)

Age	Year			
	1975	*1980*	*1985*	*1990*
15-19	23	21	9	4
20-24	151	126	86	64
25-29	183	152	155	161
30-34	91	80	88	86
35-39	37	36	40	43
40-44	16	14	12	14
45-49	8	8	8	7

(Age-specific first marriage rates are not available for very recent years. However, both the numbers of marriage performed in the 1990s and the marriage rate per 1,000 population declined slightly during this period, indicating that there is still some change in Irish marriage patterns occurring.)

3. *Marital fertility*

Data presented in table 2 suggest that changes in marriage patterns may well have contributed to the overall decline in fertility recorded in Ireland between 1975 and 1995. However, data in table 3 show that marital fertility also declined throughout the period, with lower rates at the end of the period among women in each age group. In fact, absolute declines in marital fertility were also greatest among women aged 20-24 and 25-29, the same age groups that experienced the greatest declines in first marriage rates. Smaller absolute declines were recorded in each of the other age groups included in table 3. The greatest relative declines in marital fertility took place among women aged 40-44 and 45-49; from 46 to 17 and from 3 to 1, respectively.

TABLE 3. AGE-SPECIFIC MARITAL FERTILITY RATES: IRELAND, SELECTED YEARS, 1975-1990
(*Births per 1,000 currently married women*)

Age	Year			
	1975	*1980*	*1985*	*1990*
15-19	635	554	503	570
20-24	407	347	298	286
25-29	310	277	226	236
30-34	205	193	159	158
35-39	123	111	84	74
40-44	46	34	25	17
45-49	3	3	2	1

Marital fertility rates for women aged 15-19, presented in table 3, need to be interpreted with particular caution. As we discussed above, marriage is now extremely rare among women aged 15-19 in Ireland, with the result that marital fertility rates at that age are volatile, and contribute very little to the overall fertility of 15- to 19-year-old women. There was an overall decline in marital fertility among women 15-19 during the period under study; in 1975 the rate was 635 per 1,000, compared with 570 per 1000 in 1990. However, in two years (1984 and 1989, data not shown), there were sizeable peaks in 15-19 marital fertility, producing rates well above the 1975 levels. Our caution in interpreting these rates is the result of the very small numbers of marital births to women aged 15-19, especially by the end of the period being analysed. For example in 1995, there were only 130 births in Ireland to married women aged 15-19, and 106 of these were to women aged 18 or 19, leaving only 24 births to married women under age 18. The small numbers in each of these categories can result in rates that vary considerably from year to year.

Another series of data on births provides a perspective on the dramatic changes in fertility that have taken place in Ireland over the last 20 years. The traditional Irish demographic regime that we described at the start of this paper included a combination of low marriage rates and high marital fertility. This combination produced large family sizes, and relatively high proportions of women reporting large numbers of previous births. In 1975, for example, 17 per cent of births in Ireland occurred to women who had four or more previous live-born children and 10 per cent occurred to women who had five or more previous births. By 1995, these percentages had declined to 7 and 3 respectively. There are now many fewer traditional, large, Irish families than in the past, even in the recent past.

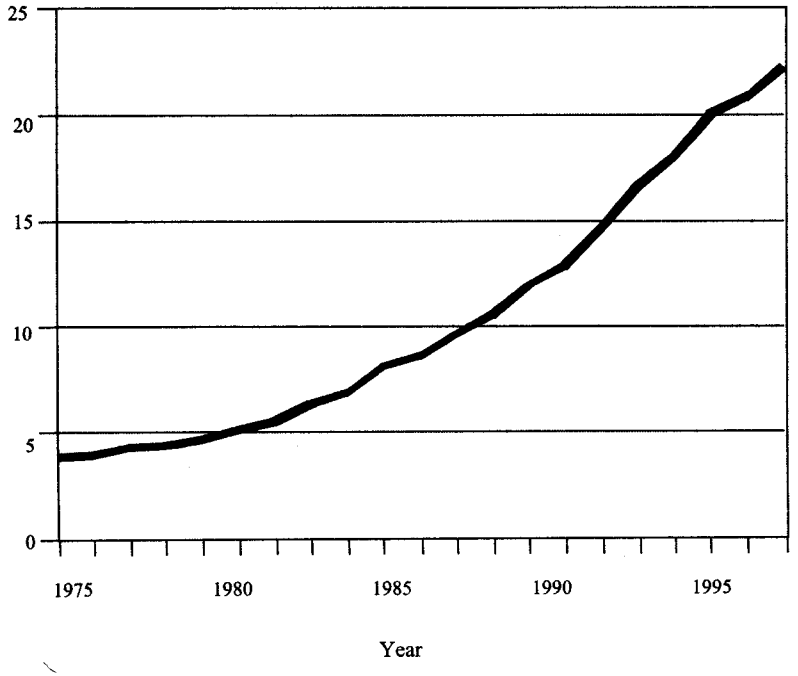
4. *Non-marital fertility*

Data presented in table 4 and figure II show that recent changes in Irish fertility have not been confined simply to declines in overall and marital fertility. Table 4 demonstrates clearly that there have been substantial increases in non-marital fertility rates among Irish women of all reproductive ages. (The denominators for these rates are all single, widowed and divorced women in each age group.) As a result of these increases in fertility rates among non-married women, along with decreases in marital fertility presented in table 3, the proportion of all births that occurred to women who were not married increased dramatically over the past 20 years. As data in figure II show, 3.7 per cent of births in 1975 were to unmarried women, compared with 22.2 per cent of births in 1995, a relative increase of six-fold. Although the proportion on non-marital births is still considerably lower in Ireland than in other industrial countries, the rate of increase has been considerable and shows no sign of leveling off.

TABLE 4. AGE-SPECIFIC NON-MARITAL FERTILITY RATES: IRELAND, SELECTED YEARS, 1975-1990
(Births per 1,000 single widowed and divorced women)

Age	*Year*			
	1975	*1980*	*1985*	*1990*
15-19	6	10	11	14
20-24	14	16	21	29
25-29	12	16	19	26
30-34	10	12	18	24
35-39	4	6	11	18
40-44	1	1	3	5
45-49	0	0	0	0.1

Figure II. Non-marital births: Ireland, 1975-1995
(Percentage)



This paper indicates that Ireland has clearly and dramatically given up its role as the demographic outlier in Western Europe. The decline of fertility in the 1980s has continued into the first half of the 1990s; total fertility in Ireland is now firmly below replacement level. This low overall fertility has come about as a result of delays in first marriage and declines in marital fertility, changes that were sufficient to outweigh substantial relative increases in non-marital fertility that have taken place at the same time. Demographic changes of this magnitude could not have taken place without equally dramatic changes in public attitudes and public policy, particularly towards women. Indeed, there have been major shifts in Irish society, Irish politics and the Irish economy during the past 20 years. In the present paper, we described, very briefly, the most important of these political, social and economic changes. A much fuller discussion of these issues can be found in Murphy-Lawless and McCarthy (1997).

During the decades covered in this report, issues related to marriage and reproduction were among the most salient topics debated in both public and private spheres in Ireland. Policy changes during these decades were especially dramatic. In 1975, the sale or importation of contraceptives was illegal in Ireland; in 1995 access to the full range of contraceptive methods was stated national policy in Ireland, with the Irish Department of Health committed to the development of "an accessible and comprehensive family planning service" in each region of the country (Department of Health, 1994). In 1975, abortion was completely illegal in Ireland and access even to information on abortion was almost totally restricted; in 1995, the right of Irish women to access information about abortion services in Britain and their right to travel to obtain abortions have been approved by popular referendum. Although no legislation has been approved to regulate the provision of abortion services in Ireland, a 1993 Supreme Court ruling, which still stands, concluded that a right to abortion in Ireland exists in situations of real and substantial risks to the life of the mother. In 1975, divorce was not legally available in Ireland and marital separations were uncommon; in 1996 a popular referendum established the right to divorce in Ireland, and the first legal Irish divorce was granted in January 1997. Prior to 1973, State support for unmarried mothers was extremely limited; in 1995, a lone parent allowance provides direct, albeit limited, financial support to all parents, including unmarried women, raising children on their own.

Socially and economically, Ireland has also changed substantially in recent decades. Increasing proportions of Irish youth are educated at the secondary and tertiary levels; membership in the European Union had produced both direct economic benefits as well as changes in outlook and world view; overall economic growth has produced substantial increases in income, at least for some segments of the population; the power and influence of the Catholic church is increasingly questioned. As a result of these many changes, Ireland in the 1990s is very different from Ireland in the 1970s, different in ways that are clearly important for the future of Irish fertility.

Considering all these changes in Irish society and Irish public policy, what can we say about the likely future course of fertility in Ireland? There are several ways to approach an answer to this question. We could make a straightforward extrapolation from recent demographic trends, along with a consideration of the paths followed by other industrial populations that have experienced substantial declines in fertility in the recent past, such as Québec, Spain and Italy. Coleman (1992) takes this approach and predicts that fertility in Ireland will continue to decline towards the levels achieved in these populations. Each of these recent changes could provide justification for predicting that fertility in Ireland will continue its downward trend, as more Irish women take advantage of either new options or more readily available options to limit their fertility. If, in time, all Irish women adopt the fertility behaviour of women currently in their twenties, we can expect further declines in Irish fertility. Coleman's (1992) analysis of Irish fertility through the late 1980s leads him to such a conclusion; he suggests that Québec, with current fertility at very low levels, might well serve as a model for the future of Irish fertility.

Predicting future fertility trends, however, is a task that has always confounded demographers. We must therefore base such predictions on more than simple extrapolations from recent demographic patterns. Wide-ranging issues and public policies also need to be considered. Hoem (1990), Hoem and Hoem (1996) and Chesnais (1996) suggest that policies related to the financial support provided by the State to families and mothers should be of particular importance in shaping the potential course of future fertility patterns in industrialized countries. In Sweden, where public policies support women entering the labour market and assist with childbearing and child-rearing with minimal disruption, Hoem (1990) observed a fertility rate of over 2.0, which was the second highest in Europe behind Iceland. Examining the same time period and comparing Sweden with Italy, Chesnais (1996) suggests that among advanced industrial countries, those that are characterized by overall higher status of women and by policies to ease potential competition between childbearing and economic activity may in fact be the countries that experience higher period fertility.

Since 1990, however, fertility in Sweden has dropped substantially, falling below 1.7 by 1995 (Hoem and Hoem, 1996). In their analysis of this most recent decline, Hoem and Hoem do not challenge the conclusions of their earlier work, nor that of Chesnais. Rather, they attribute the decline in period fertility in Sweden in the 1990s to increasing unemployment (especially in the public sector); and to cutbacks in the generous level of financial support for families. Although the absolute level of such support in Sweden remains higher than in most other countries, Hoem and Hoem (1996, pp. 14-15) suggest that Swedes in the 1990s experienced considerable "relative deprivation", which influenced their fertility.

Applying this hypothesis of State support to women as an aid in predicting the future course of fertility in Ireland raises interesting questions. In terms of twentieth century politics and policies, Ireland had been similar to Spain and Italy, countries in which women consistently experience relatively low status and in which women's roles are confined to the private, domestic sphere. In recent

decades, however, Irish public policy and public financial support towards women and their children have taken a form that is quite different from policies based on an ideology of women as wives and child-bearers only.

By the 1970s, Ireland began to provide a State welfare allowance for unmarried and deserted women to support their children. For deserted women, Ireland has since increased the size and range of payments to provide more State-backed employment and childcare options for women in the position of being lone parents. These allowances do have flaws: they have been developed incrementally in response to political pressures and perceived needs; and there are serious policy issues about the poverty trap associated with long-term social welfare (Miller *et al.*, 1992; Treoir, 1995; McCashin, 1996). Nonetheless, the commitment of the State to support women and children has not faltered, despite opposition to births outside marriage on moral grounds, which prevailed in the 1970s, and on economic grounds, which surfaced in the 1980s and 1990s and concentrated on the perceived breadth of benefits available to women raising their children outside marriage at taxpayers' expense (Hyde, 1996).

In 1994, 38,701 single parents, mostly unmarried or separated women, received weekly State benefits for themselves and a total of 60,950 children (Department of Social Welfare, 1995). Efforts have been made recently to retrieve financial support for children from absentee fathers. Despite the tough language, these efforts are acknowledged to be largely ineffective, and the State continues its role as main supporter (McCashin, 1996). It has been argued that the State's role in this respect has substantively supported women in other ways as well, enabling them to empower themselves and step aside from an essentially patriarchal requirement of marrying merely because they have continued with a pregnancy (Hyde, 1996).

The Irish Central Statistics Office has recognized the predictive power of each of these alternative scenarios, and has prepared two sets of fertility projections, one based on a "Northern European Model" and the other on a "Southern European Model" (Central Statistics Office, 1995). The Northern Model predicts that fertility in Ireland will quickly level off close to its current TFR of 1.87, or possibly even increase to over 1.9; the Southern Model is based on the assumption that fertility in Ireland will continue to fall, until TFRs are in the range of 1.5. Since each of these empirical models in fact reflects theoretical differences about the determinants of fertility in industrial societies, Ireland will continue to be an important site in which the value of alternative demographic theories can be assessed, even after the country has given up its long held position as the demographic outlier in Europe.

However, neither of these scenarios from the Central Statistics Office explicitly takes into account the possible influence that women themselves might have on shaping the future course of Irish fertility, both by controlling their own fertility in safety and by promoting and campaigning for public policies that influence, in turn, the contexts within which women and couples make fertility-related decisions. In Ireland, these contexts have most frequently been conflict-laden and deeply contradictory. For example, in 1985, when the sale of condoms to all people over the age of 18 was made legal, there was a prolonged public inquiry known as the Kerry Babies Tribunal, which investigated in

agonizing detail the circumstances of a young unmarried woman accused of infanticide. The eminent historian Margaret MacCurtain concluded that 1985 was a year "that had not been kind to Irish women". (MacCurtain, 1993, p. 207).

In the face of this and similar struggles, the women's movement in Ireland has matured and gained real political strength. The movement is now demanding more than ever that a women-centred analysis of policy decisions and women's input into social and health-care policies become part of the institutional framework of Government. Gender-proofing these institutional structures would help copper-fasten the State's overdue intentions to respect and secure women's reproductive freedom and physical well-being, as well as to actively support a diversity of forms of family life. These are moves that could fundamentally transform the meaning of motherhood in a country where woman as wife and mother has, for so long, been conflated. And thus these moves will be a key determinant of the future of Irish fertility.

DATA SOURCES

1975-1990: Annual reports on vital statistics (Dublin, Central Statistics Office).

1991-1995: Numerators (counts of births by marital status and marriages): from annual fourth quarter and yearly summaries of vital statistics (Dublin, Central Statistics Office).

1991-1995: Denominators (female population by age and marital status): from annual population and migration estimates 1988-1995, (Dublin, Central Statistics Office, 24 October 1995).

NOTES

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LEVELS AND TRENDS OF FERTILITY IN ITALY: ARE THEY DESIRABLE OR SUSTAINABLE?

Antonio Golini*

FERTILITY TRENDS IN ITALY

Over recent years Italian period fertility has reached the lowest levels ever seen in recorded human history. In particular, between 1993 and 1995 the total fertility rate was 1.26-1.17 children per woman, the lowest fertility rate in the world for a large population; in 1996 the record went to Spain, which recorded a value of 1.15. The Italian period total fertility rate fell below the replacement level starting in 1977 and has remained under this level continuously for twenty years.

The cohort fertility fell less sharply and for the 1965 cohort it is estimated that the value of completed fertility is now 1.59 children per woman. Italy has also been continuously in the below-replacement level since the cohort born in 1948 (1.96 children per woman) and therefore for nearly twenty generations.

Table 1 shows a comparison with the major European countries, and table 2 shows the long-term trends in Italian fertility. Data in this table show in particular that: (*a*) the proportion of fourth and subsequent children has fallen from 22.0 to 3.5 per cent of total births. This sharp fall accounts for 61 per cent of the total fall in the total fertility rate (the fall in third children accounts for 27 per cent, of second children 11 per cent and first-born children 1 per cent); (*b*) offspring of Italian women are increasingly the first-born child, considering that even the share of second children is beginning to fall; (*c*) the fall in the absolute number of births, reduced by approximately half in thirty years, has been severe and has contributed significantly to the fast and intense ageing of the Italian population.

* Department of Demographic Sciences, University "La Sapienza", Rome.

TABLE 1. COMPLETED FERTILITY FOR FEMALE GENERATIONS BORN BETWEEN 1944 AND 1964 AND TOTAL FERTILITY RATE, 1975-1995: ITALY AND SOME COUNTRIES OF EUROPEAN UNION

Country	Completed fertility female cohorts			Total fertility rate years			Country
	1944	1954	1964	1975	1985	1995	
Italy	2.10	1.85	1.59[a]	2.20	1.42	1.17	Italy
United Kingdom	2.21	2.02	1.87	1.81	1.79	1.71	United Kingdom
Sweden	1.96	1.90	1.90[a]	1.77	1.74	1.74	Sweden
Germany[b]	1.78	1.61	1.47[a]	1.48	1.37	1.24	Germany[b]
France	2.26	2.12	2.06[c]	1.93	1.81	1.70	France
Spain	2.38	1.95	1.52	2.80	1.63	1.18	Spain

[a]1963.
[b]Present borders.
[c]1960.

Source: Council of Europe, Evolution démographique récente en Europe 1966, for completed fertillity; and Eurostat, Statistiques démographiques 1996, for total fertility rates.

TABLE 2. ESTIMATES OF COMPLETED FERTILITY BY BIRTH ORDER FOR FEMALE GENERATIONS BORN BETWEEN 1924 AND 1963; PERIOD TOTAL FERTILITY RATE, AND LIVE BIRTHS: ITALY, 1952-1996

Female cohorts	Percentage distribution by birth order				Completed fertility	Total fertility rate	Live births (000)	Year
	1	2	3	4+				
1924	35.5	27.1	15.5	22.0	2.34	2.34	863	1952
1929	37.3	28.4	15.7	18.7	2.32	2.33	886	1957
1934	37.4	30.0	16.0	16.5	2.33	2.46	946	1962
1939	39.9	32.3	15.4	12.4	2.19	2.53	962	1967
1944	42.7	33.7	14.4	9.2	2.10	2.36	893	1972
1949	45.9	34.7	13.0	6.4	1.92	1.97	757	1977
1954	48.3	35.1	12.0	4.6	1.85	1.60	635	1982
1959	50.2	35.2	10.9	3.7	1.71	1.35	560	1987
1960	50.5	35.2	10.7	3.5	1.69	1.38	578	1988
1961	50.9	35.1	10.5	3.5	1.65	1.35	567	1989
1962	51.1	35.1	10.3	3.5	1.61	1.36	581	1990
1963	51.7	34.7	10.1	3.5	1.59	1.33	556	1991
						1.33	575	1992
						1.26	553	1993
						1.21	537	1994
						1.17	526	1995
						1.22	538	1996

Source: Istat-Central Statistics Institute, *La fecondità nelle regioni italiane*: Analisi per coorti, for completed fertility; various yearbooks for the other data.

Geographical fertility differences have always been relatively high (Sorvillo and Terra Abrami, 1993; Santini, 1995) and are still high today although all of Italy's 20 regions and 94 provinces have a period fertility and cohort fertility below-replacement level (tables 3, 4 and 5). Currently, the ratio in the regions between maximum and minimum fertility is 1.7 to 1 (1.9 to 1 in 1977), while it is 2.1 to 1 in the provinces (1.8 to 1 in 1977).

TABLE 3. PERIOD TOTAL FERTILITY RATE IN DIVISIONS; MINIMUM AND MAXIMUM VALUES AMONG REGIONS AND PROVINCES:[a] ITALY, 1977 AND 1994

Division Region Province	*1977*	*1994*	*Change*		*Total population at the end of 1994 (000)*
			abs.	*per cent*	
Italy	1.97	1.22	-0.75	-38.1	57 269
North	1.65	1.04	-0.61	-37.0	25 435
Centre	1.76	1.09	-0.67	-38.1	10 983
South and Islands	2.50	1.47	-1.03	-41.2	20 850
Minimum and maximum values among regions (according to the 1994 rank)					
Liguria (N)	1.41	0.93	-0.48	-34.0	1 664
Campania (S/I)	2.67	1.61	-1.06	-39.7	5 746
Minimum and maximum values among provinces (according to the 1994 rank)					
Ferrara (N)	1.52	0.79	- 0.73	- 48.0	357
Naples (S/I)	2.78	1.69	- 1.09	- 39.2	3 090

[a]Italy is divided into 20 regions which in turn are divided into 94 provinces.
Source: Our elaboration on *Istat* data.

TABLE 4. DISTRIBUBUTION OF REGIONS AND PROVINCES BY PERIOD FERTILITY GROUP: ITALY, 1994

Percentage distance from replacement level	*Fertility group*	*Number of*	
		Regions	*Provinces*
61 and more	up to 0.823	-	1
60-51	0.824-1.029	4	31
50-41	1.030-1.235	8	28
40-31	1.236-1.441	5	20
30-21	1.442-1.647	3	12
20-11	1.648-1.853	-	2
10-0	1.854-2.060	-	-
	Total	20	94

Source: Our elaboration on *Istat* data (*Istat*-Central Statistics Institute, *La fecondità nelle regioni italiane*. Analisi per coorti).

TABLE 5. ESTIMATES OF COMPLETED FERTILITY BY NUMBER OF CHILDREN IN DIVISIONS; MINIMUM AND MAXIMUM VALUES AMONG REGIONS: ITALY, COHORT BORN IN 1963

Division / *Region*	*Percentage distribution of women by number of children*				*Completed fertility*
	Zero	*One*	*Two*	*Three+*	
Italy	17.9	27.0	39.1	16.0	1.58
North	22.4	33.8	34.3	9.5	1.32
Centre	17.5	31.8	40.5	10.2	1.45
South and Islands	14.1	15.7	43.5	26.7	1.91
	Minimum and maximum values among regions				
Emilia-Romagna (N)	23.7	39.9	29.2	7.2	1.21
Campania (S/I)	12.2	13.5	43.3	31.0	1.99

Source: Our elaboration on *Istat* data (*Istat*-Central Statistics Institute, *La fecondità nelle regioni italiane*. Analisi per coorti).

In 1994, the province of Ferrara, recording Italy's absolute minimum, recorded a period fertility of 0.79, and since 1982 there have been values of under one child per woman. Its age structure has therefore deteriorated to the extent that in 1995 there were 1,962 births compared to 4,355 deaths. The entire region to which the province belongs, Emilia-Romagna, has such a low fertility rate that at the end of 1995 it recorded a population of 10.8 per cent of under 15 years and 21.3 per cent of over 65.

The province of Naples (pop. 3.1 million) shows the absolute maximum, recording a period fertility rate of 1.69 children per woman in 1994, while in the same year Sweden (pop. 8.7 million) recorded a fertility rate of 1.88. Old stereotypes therefore no longer hold true: the Naples area, with a fertility "celebrated" in many movies and allegedly characterized by cultural backwardness, has a fertility level much lower than the country supposedly famous for high levels of female emancipation and employment and sexual freedom.

Apart from the extremes, it should be stressed that in 31 provinces out of 94, period total fertility rate is between 0.82 and 1.03, thus below the replacement level of 51-60 per cent (table 4).

In Italy's central and northern regions the percentage of childless women (at the end of the reproductive period) is approaching 23-25 per cent, and in the longer term the only-child model as typical reproductive behaviour. Looking at these experiences and at other European ones, one might wonder whether there is a fertility threshold below which a population does not go and if the lowest fertility recorded in the Italian provinces can be considered a minimum one.

In the attempt to assess a possible minimum fertility rate, one can assume that 20 per cent or, in a more pessimistic perspective, 30 per cent of women in a cohort could remain childless and the remaining 80-70 per cent would

procreate, having just one child. In this very empirical hypothesis—without understanding how a set of reproductive behaviour evolves and how its components relate to one another—a completed fertility rate of 0.70-0.80 could be considered as a minimum for cohort fertility. With regard to a possible minimum period total fertility rate (PTFR), if the cohort total fertility rate is constant and the cohort mean age at birth is further postponed, e.g. from the current age of 30 to age 32, then PTFR first decreases and later increases. In this case, the minimum PTFR is about 9 per cent less than constant TFR of the cohorts which contribute to determining it, i.e., between 0.63 and 0.72. Therefore, one can say that 1994 period total fertility rates of Ferrara province in Italy and, for instance, of the former German Democratic Republic (0.80-0.77) are close to a possible minimum of period fertility. This is true even if the minimum fertility rate is calculated as the sum of the lowest fertility rates one can find for each age group. If one sums up the lowest rates of present fertility rates observed in any age group in the Italian provinces, the result is 0.75; the sum of the lowest fertility rates among countries is 0.72 (Golini, 1997).

Italy therefore not only has one of the lowest fertility ever recorded in human history, but in some areas a fertility near a possible absolute minimum.

DETERMINANTS OF BELOW-REPLACEMENT FERTILITY

This study will not refer to the numerous fertility theories focusing on what they have to say implicitly or explicitly about how low fertility can get. These theories have recently been thoroughly surveyed (Namboodiri and Wei, 1997) and could undoubtedly be cited to explain the low Italian fertility. However, reference will now be made specifically to problems and factors more closely related to the Italian situation.

Italy has one of the highest percentages of women using contraceptives. In present-day populations, the percentage of married women using contraception methods is rising very fast and in some cases the level of current contraceptive use is close to the maximum of 100 per cent. According to United Nations data (1992), China ranks first with 83 per cent, followed by the United Kingdom (82 per cent, 1993) (United Nations, 1966a). The last fertility survey in Italy (1995-1996) shows a rate of over 90 per cent (De Sandre *et al.*, 1997). Therefore, the percentage of undesired children has continued its downward trend and is perhaps close to zero. It is also very likely that the wanted number of children is also falling.

Average age at marriage is still rising, and for young Italians marriage is the chosen way for living together, with alternative forms of married life such as consensual union not being very widespread. Thus in 1995-96, at age 25, 60 per cent of women born between 1966 and 1970 are neither married nor in a conjugal union, while between women born twenty years previously this percentage was only 31 per cent. For men aged 30, nearly half (44 per cent) do not live with a wife or partner (table 6). Young Italians are therefore postponing the time for leaving their parents and beginning a conjugal union, with more time elapsing before they reach the personal and economic independence of adulthood. Since they have all the freedom they want in their original family as well as considerable economic support, they also postpone leaving their original

family since living alone makes the young people "poorer" because they incur expenses which they did not have when living with their parents. Psychologists have likewise affirmed that adults aged 25-30 who still lived a sheltered life in their parents' home may undergo a strengthening of fears they may have in facing life and its responsibilities alone.

TABLE 6. SHARE OF WOMEN AGED 25, AND OF MEN AGED 30, WHO DO NOT LIVE IN ANY KIND OF PARTNERSHIP, BY BIRTH COHORT: ITALY, 1995-1996
(*Percentage*)

Born in	*Women*	*Born in*	*Men*
1966-70	59.7	1961-65	43.6
1956-60	39.8	1956-60	35.4
1946-50	30.8	1946-50	24.0

Source: De Sandre, *et al.* (1997, p. 79).

The structural reasons for this slow transition are as follows: (*a*) the extension of education, with a growing number of young people getting a school-leaving certificate and then a university degree (the latter comes late in Italy, at an average age of 25-27); (*b*) continuing difficulty in finding a job, with youth unemployment being very high, totaling 29 per cent for men and 38 per cent for women in the 20-24 age group in 1996; (*c*) difficulty in finding the right size home at a cost which young people can afford.

There are likewise very few children born out of wedlock in Italy compared to rates in central and northern Europe. In 1995, they accounted for 8 per cent of total births in Italy; 32-35 per cent in France and the United Kingdom; and 52 per cent in Sweden. Children are therefore born in a marriage context and marriage is the way Italians prefer to live together. This is also true for the younger generations, even people under 30; in 1991, 89 per cent declared that marriage was the preferable family form (Palomba, 1996).

The typical path followed by young Italians is therefore to complete their education, look for a job, seek psychological and economic stability, look for a house, leave their parents' home, get married and have a child. In other European countries the path is different and considerably shorter. Especially in northern Europe, the marriage often follows the birth of a child or is induced by this event.

Reproduction therefore occurs at an increasingly higher age. Over the generations the number of children procreated by women up to age 30 has been falling significantly. If the estimates and projections in table 7 are correct, this would mean that women born between 1946 and 1950 gave birth to 77 per cent of children when the women of this cohort still were under the age of 30, while this rate fell to only 44 per cent for women born between 1971 and 1975. More than half of children born to the youngest generations seem to have been conceived to mothers aged over 30 and fathers aged over 33-35. Delayed parenting has become increasingly widespread even in Italian society because of social

and economic changes (improved education and greater difficulty in finding a job), population changes (population ageing), personal choice and even medical progress (e.g., *in vitro* fertilization for older women). We might also wonder whether this postponement of mean age of fertility may have a negative impact on the biological and physiological characteristics of the offspring. The only research on this topic seems to show that there is a strong inverse relationship between the father's age at reproduction and the daughter's (not the son's) life expectancy (Gavrilov *et al.*, 1997).

A number of structural factors were quoted above[1] which certainly influence the fertility level and number of births. These include the fall in the number of marriages, the delay with which men and women find employment, the higher age at marriage and at the birth of the first child and the very low contribution to the population growth by immigrants (who are mostly here as individuals and not as families).

As for the other factors, any assessment is more uncertain. One of the possible reasons is the speed with which women have acquired a new and improved status in a much shorter time than in other advanced countries. This has had both cultural and practical repercussions. A number of surveys show that many women seeking to establish economic security and self-fulfilment have not managed to overcome the difficulty of achieving a new psychological and cultural equilibrium enabling them to live their lives better as workers and mothers. Men, too, have failed to develop the right attitude and conduct with regard to the new status of women.

Meanwhile, women are investing more and more in education and vocational training, and the youngest generations have gone further than men in this respect. In 1996, among people aged 50-54, 23.8 per cent of the men and 16.8 per cent of the women had a school-leaving certificate or university degree, while for the 25-29 age group the rate was 43.4 per cent for men and 46.0 per cent for women. With regard to university degrees, the number of women graduates has been higher than for men for some years.[2] This not only means a different path in life, but also that women's job and career expectations have profoundly changed.

It should be noted that between 1972 and 1996 the number of jobs fell by 0.1 million for men and rose by 2.6 million for women. This change has been so radical and rapid that central and local government authorities have not been able to keep pace with it in terms of legislation, facilities and the organization of work and services, in order to cater to the new position of women. Just to mention two examples: the laws on part-time jobs and temporary work have not been properly formulated in order to make it easier for both women and men to reconcile job commitments and the requirements of bringing up children. These include the opening hours of public offices, schools and shops which are quite incompatible with normal working hours, because they are still the same hours laid down when the absolute majority of women never worked outside the home. Virtually the whole brunt of the failure to adjust laws and facilities—as well as men's attitudes and behaviour—has to be borne by women.

Among the causes of Italy's very low fertility, both on the individual and the collective level, we can identify a number of cultural features which to a

certain extent condition the Government's attitude towards any possible fertility support policy. One initial factor may be the last remnants in the collective memory of the Italian governing elite regarding the measures adopted by fascism to increase Italy's fertility and thereby produce more manpower and more military might for the totalitarian regime.[3] A second factor may also be the fact that the Italian political and intellectual elite have tended to blame the country's most serious domestic problems of the past few decades to "excessive" fertility: low economic development, very high emigration abroad, high unemployment levels and even excessive overcrowding in the classrooms. The third factor concerns the new environmental and global awareness which is rapidly spreading in Italy, as elsewhere. Some believe that Italy is an overcrowded country (with a population density of 190/km^2) which means that low fertility and the consequent possible decline in the population would reduce pressure on the environment. Others hold that low fertility could usefully contribute as a counterbalance to the excessive population growth in the southern regions of the world, albeit to a very small extent.

The speed with which the country has moved from poverty to affluence may also have created a distortion in the value system and in individual and family priorities, in which consumption is overrated (and may be seen as conflicting with having children).

There is little or no interest in the question of fertility that under current rules of the *INPS* (National Institute for Social Security) collects many billions of lire from private-sector workers in statutory contributions specifically for family allowances while only paying out about 10-15 per cent for this purpose. The surplus is used to write down part of the *INPS* deficit for other benefits.

Family allowances for children, which in the sixties and seventies accounted for 5-10 per cent of a worker's wage for couples with 2 or 3 children, have now practically disappeared in Italy, with the result that the economic burden of bringing up children falls mostly or wholly on the parents. Couples with 2 or 3 children have seen their standards of living decline considerably in comparison with childless couples.

The 1991 poll survey also shows that the Italians believe that the fall in the birth-rate is first of all due to women's need to work, and then to the high economic cost of children. However, the main causes also include the desire to live better than in the past and the growing desire for independence and personal fulfilment (Palomba, 1996).

FUTURE FERTILITY EXPECTATIONS

With the increasing diffusion and implementation of safe, cheap birth-control methods, childbearing in Italy is linked increasingly to the willingness of the individual partners and the couples. Expectations of having one child or more children are therefore very important. When asked how many children they wanted to have, the 1995-1996 survey showed that women expected to have an average of 2.1 children, with no substantial differences between the youngest and oldest (table 7). However, there were some major geographical and generation differences. For women aged 40-44 in the north the expectation was 1.7 children per woman, compared to 2.5 in the south. For women aged

20-24, expectations were much more standard, with the wanted number of children being 2.0 in the north and 2.2 in the south (De Sandre *et al.*, 1997). There were also significant differences according to educational levels. University graduates expect to have fewer children, especially those over 40. But "it is known that this information is seriously 'rationalized' on the basis of the respondent's personal experience; older respondents will give an answer taking into account the number of children they have already had and the additional number they still hope or believe they will have after the survey. The younger respondents, on the other hand, will give an answer that is closer to their 'ideal' " (Scoenmaeckers and Lodewijckx, 1997, p. 13).

TABLE 7. COMPLETED FERTILITY OF WOMEN UP TO THE INDICATED AGES, AND NUMBER OF CHILDREN ULTIMATELY WANTED, BY BIRTH COHORT: ITALY, 1995-1996

Women born in	*Number of children born up to age*				*Number of children ultimately wanted*
	30	*35*	*40*	*45*	
1971-75	0.59[a]	1.05[a]	1.28[a]	1.33[a]	2.1
1966-70	0.75[a]	1.22[a]	1.44[a]	1.50[a]	2.1
1961-65	1.03	1.50[a]	1.73[a]	1.78[a]	2.1
1956-60	1.12	1.48	1.71[a]	1.76[a]	2.0
1951-55	1.37	1.70	1.84	1.89[a]	2.0
1946-50	1.58	1.92	2.02	2.04	2.1

[a]Projected.
Source: De Sandre *et al.* (1997, pp. 156 and 163).

The 1991 survey showed that among childless married couples only 54 per cent declared that they intended to have at least one child; only 37 per cent of married couples with one child declared that they wanted to have another one, with this rate falling to as low as 1 per cent for couples who already had 2 or 3 children. In any case, 53 per cent said they did not want any more children because they had achieved the wanted number of children. For the others, the main reasons given included "the heavy responsibility", "reasons connected with the relationship between the partners" and "economic costs" (Palomba, 1996). The 1995-1996 survey also showed how in the couples' lifetime the number of children fell compared to expectations because of the growing awareness of all the costs (psychological, economic, organizational etc.) that having a child or another child involved; even because inequalities in the sharing of domestic tasks also persisted (De Sandre *et al.*, 1997).

The reasons behind the gap between expected (or ideal) and real fertility are therefore complex. They include the external environment with cultural, economic and organizational factors, reasons concerned with the interaction between the partners, individual reasons especially linked to the status and aspirations of women who are increasingly well educated and more aware of their demands on life; finally, male attitudes and behaviour, which have failed to adjust to these aspirations.

All the opinion polls leave no doubt whatsoever that the public at large is very much aware of the main population problems and the most marked

demographic trends; it is an issue to which the media frequently turn their attention. Fewer births, an ageing population, foreign immigration, health and mortality are the "domestic" issues on which public opinion is focused. However, an awareness that the birth-rate is falling sharply, and that a very small number of young people is not good for the country, counts little with respect to the procreation decisions taken by individual couples or individual women. People are convinced that their own procreation decisions should be made in relation to their interests alone: other couples can deal with the collective interest.

The fall in the number of births, population ageing and foreign immigration are undoubtedly issues frequently covered by the Italian press, which shows a considerable interest in population issues. The leading editorialists do not take a uniform view of the present trends, particularly with regard to the decline in the number of births. Some journalists emphasize the risks of this decline, while others emphasize the possible benefits, and in any case the fact that societies normally manage to find ways of redressing the balance.

Until a few years ago Italian politicians completely ignored population issues, partly because demographic phenomena were substantially stable, and could therefore be managed on a routine basis. However, there was also a tendency not to attribute any social or community value to demographic facts, as a result of ideologies and opinion lobbies as well as the already cited memory of the fascist population policies that were still very vivid in the minds of the politicians (and also among the public). All these phenomena were therefore pushed wholly into the private sphere, losing any relevance in terms of the community as a whole.

At the end of the sixties and in the seventies important new legislation was introduced on issues that have always had—and still have—an impact on the population in demographic terms (liberalization of contraceptives, the legalization of abortion, the introduction of divorce, the reform of family law). These measures, which were advocated, supported and reaffirmed by a majority in Parliament and in the Italian population, were designed and implemented exclusively to assert and safeguard individual rights. They were not evaluated or coordinated in a broader context related to a comprehensive population policy, nor was any of the social or fiscal legislation enacted subsequently. Many decades of this policy have supported the conviction that a child is something valuable exclusively for the couple and not for the community as well.

Only very recently has the politicians' attention been drawn by the steep fall in births, the rapid ageing of the population and the heavy influx of foreign immigrants; instead of just the personal relevance of individual demographic events (marriage, birth, abortion, divorce, migration, death), they have begun to consider the impact of all the demographic events on the entire community and on the country as a system. The result is that a survey conducted in 1993 on the policies and programmes of the four main political parties, at the time revealed a great concern about population problems on the one hand, and on the other substantial political projects all designed to sustain the population and especially the family (which is particularly disadvantaged in Italy) (Golini, 1994a).

However, family policy is something that still has to be formulated and implemented, despite the new and positive attitude of the Italian politicians

towards the problem of the family; nevertheless, no strong family support policies seem likely in the short term, mainly because of the serious budget problems facing the Italian Government.

Currently, there are no indications that fertility is likely to rise, at least in the short-to-medium term.

CONSEQUENCES OF SUSTAINED BELOW-REPLACEMENT FERTILITY

In the medium-to-long term, the only clear consequences of a sustained below-replacement fertility are of the demographic type. As a direct consequence—according to the hypotheses on the future of fertility[4]—the Italian population will fall more or less significantly and at the same time will also age more or less significantly. As an indirect consequence, the profound change in the age structure will trigger a negative "momentum" likely to have negative effects for several decades in the future.

Let's look at the direct consequences. Assuming a constant fertility rate, between 1997 and 2047 they will be as follows: (*a*) the total population would fall by 16.3 million with an annual change rate of -0.7 per cent, but this would be the balance deriving from the fall of the under-60 population of 21.5 million (a rate of -1.3) and an increase in the over-60s age group of 5.2 million (a rate of +0.7); (*b*) the working-age population would fall to less than the number of people aged over 60; (*c*) the proportion of people aged over 60 would reach 45 per cent of the total population; (*d*) the ratio between people aged over 80 and children aged under 5 would be approximately 5 to 1 (today it is 0.9 to 1). These are just some of the figures, with a more complete picture contained in table 8.

And now the indirect consequences. There would be a sharp fall in and significant ageing of the female population at reproductive age (table 9). In the case of constant fertility rates, between 1997 and 2047 the number of women aged 20-44 would fall below 6.0 million, with an annual change rate of -1.6 per cent; the proportion of women aged 20-29 in the 20-44 female age group would fall from 41 per cent to 34 per cent. One of the consequences would be a very low number of births and an increase in the excess of deaths as compared to births, even if fertility rose to 1.8 children per woman. In this case, for the 2042-2047 period, there would be 485,000 births and 807,000 deaths. The rate of this negative "momentum" is also shown by recent United Nations projections according to which the high variant, with a fertility rate as high as 2.19 children per woman in 2040-2050, estimates 486,000 births and 760,000 deaths (United Nations, 1996b).

TABLE 8. PROJECTIONS OF POPULATION BY LARGE AGE-GROUP AND THREE HYPOTHESES OF FERTILITY: ITALY, 1997-2047
(*Thousands of people*)

Age group	*Fertility*	*Population*		*Change*		*Per cent distribution*	
		1997	*2047*	*abs.*	*per cent rate*	*1997*	*2047*
	D		3 212	-8 607	-2.6		8.8
0-19	C	11 819	5 392	-6 427	-1.6	20.6	13.1
	R		10 136	-1 683	-0.3		20.1

Age group	Fertility	Population 1997	Population 2047	Change abs.	Change per cent rate	Per cent distribution 1997	Per cent distribution 2047
	D		14 860	-17 672	-1.6		40.9
20-59	C	32 532	17 434	-15 098	-1.2	56.6	42.4
	R		22 033	-10 499	-0.8		43.7
	D						50.3
60 +	C	13 110	18 304	+5 194	+0.7	22.8	44.5
	R						36.3
	D		36 376	-21 085	-0.9		100.0
Total	C	57 461	41 132	-16 329	-0.7	100.0	100.0
	R		50 473	-6 988	-0.3		100.0
	D		615	-2 112	-2.9		1.7
0-4	C	2 727	1 163	-1 564	-1.7	4.7	2.8
	R		2 412	-315	-0.2		4.8
	D						15.7
80 +	C	2 366	5 694	+3 328	+1.8	4.1	13.8
	R						11.3

NOTES: Level of fertility and life expectancy at the end of period:
D=decline of fertility: TFR=0.90; C=constant: TFT=1.27; R=recovery: TFT=1.80.
Life expectancy—M: 79.1; F: 85.5.
No migration.
Source: A. Golini and A. De Simoni, unpublished projections.

TABLE 9. PROJECTIONS OF FEMALE POPULATION IN REPRODUCTIVE AGE BY LARGE AGE-GROUP, AND THREE HYPOTHESES OF FERTILITY: ITALY, 1997-2047
(*Thousands of people*)

Age group	Fertility	Population 1997	Population 2047	Change abs.	Change percentage rate	Percentage distribution 1997	Percentage distribution 2047
	D		1 143	-3 232	-2.6		3.1
20-29	C	4 375	1 607	-2 768	-2.0	7.6	3.9
	R		2 416	-1 959	-1.2		4.8
	D		2 373	-3 952	-1.9		6.5
30-44	C	6 325	3 076	-3 249	-1.4	11.0	7.5
	R		4 336	-1 989	-0.8		8.6

NOTES: Level of fertility and life expectancy at the end of period:
D=decline of fertility: TFR=0.90; C=constant: TFT=1.27; R=recovery: TFT=1.80.
Life expectancy—M: 79.1; F: 85.5.
No migration.
It should be considered that fertility rate is very low and rapidly declining for age-group 15-19 and is close to zero for age-group 45-49.
Source: A. Golini and A. De Simoni, unpublished projections.

In the light of the current trends, the basic problem to solve is whether in the medium-to-long term current trends will produce desirable and/or sustainable demographic consequences in the population and in society.

In my view this problem cannot be faced in terms of the actual size of the desirable and sustainable population, since no answers would emerge from a debate of this sort. Determining the size of the desirable and sustainable population, i.e., defining an *optimum* level, is a task which has long occupied demographers, sociologists, economists and systems experts, but they soon abandon these attempts because the answers closely depend on changing contingencies and unpredictable future events. In order to try to get an answer, the problem has to be approached form two points of view: the speed of change in the whole population or population segments, and the *change of equilibrium in age structures* of the population.

What speed of change in the population could be defined as desirable and/or sustainable? Looking at the empirical experience in many countries with long-settled populations,[5] it can be pointed out that institutions and society undergo a crisis when a growth rate of total population or of a population segment exceeds a certain threshold, when in the medium term, say 10-20 years, the speed of change is too fast. Perhaps a change rate with a 1.5 or 2 per cent annual increase or decrease, implying the doubling or halving of the population over 35-40 years already means an excessive speed since it causes "distortion" in age structure with consequences quite far into the future, as well as requiring society to double or halve extensive physical facilities (housing, schools, hospitals etc.), economic sectors (agriculture, industry, services and all supply and demand in general) and employees (bureaucracy, teachers, physicians, nurses etc.) within the same time-span.

The other way to approach the problem is that a population could or even must have an equilibrium between different population segments. In order to ensure a harmonious individual and community development from the psychological, cultural, social and economic point of view and to ensure sufficient social cohesion, I think that one can say that the numerical ratios between the different generations should not be altered too much.

In my view the current and prospective Italian demographic situation is neither desirable nor sustainable if we examine it according to the criteria of the speed of change and of the equilibrium between generations.

With regard to fertility, this seems to apply for current trends, whether fertility continues to fall slightly or remain steady. The population aged under 20 would fall at a rate of 1.6-2.6 per cent, while the oldest old would increase at a rate of 1.8 per cent.

The percentage of over-60 population, 22.8 per cent in 1997, would rise to 36 per cent in 2047 if fertility showed a recovery of up to 1.8 children per woman and as high as 50 per cent if fertility showed an even slight drop.[6] Even with the optimistic hypothesis of a rise in fertility, ageing would continue with a speed of increase which society would find hard to face. One could imagine that society could manage to absorb a 45 per cent proportion of over-60s from an economic, social, cultural and psychological point of view. Matters are

different, however, if this share, now 23 per cent, were to double in 30 or in 60 years. The speed of "absorbing and adapting" by society in 30 years would be double that in 60 years. In France, for example, the fact that the number of over-60s might exceed that of the under-20s around 2015, i.e., about 20 years after Italy, means that there is a much more gradual ageing process and therefore a much greater possibility of intervening with flexibility and planning measures which are both more timely and less traumatic.

The change in the numerical balance between generations has been too sharp and too fast in Italy to enable both society as a whole and the political elite (characterized by very long and complex decision-making processes) to realize what happened and what is happening and to react suitably. This is especially true when we have to face long-term consequences of phenomena like ageing which advance silently and practically "underground" (without, for example, triggering public protests like unemployment).

With regard to the socio-economic desirability and sustainability of current demographic trends, we might wonder whether Italy can stand up to a reduction by nearly half of its working-age population in only 50 years (table 8), which would occur if fertility remains unchanged. This would lead to a serious deterioration in the relationship between the old and very old on the one hand and adults on the other. Over-60s are expected to increase in the coming years by approximately 104,000 per year (of whom 67,000 are over-80s); on the contrary, unlike in the past, this rise would be accompanied by a significant fall in the working-age population (302,000 per year if fertility remains unchanged).

The resulting major change in the ratio between the retired and workers would inevitably be a source of serious crisis for the social security system which, if it remains as it currently is, would collapse when today's young generations retire.

On the other hand, the expected fall in the working-age population could solve the serious unemployment problems which currently plague Italy and the rest of Europe. In the coming years the European countries could once again reach a favourable demographic and economic situation. Labour-saving technologies and processes based on computerization, introduced first of all on industry and then in the services sector, are suited to a fall in the working-age population; it can be recalled that at the end of the nineteenth and in the early twentieth century, industrial expansion, which required a large labour force, took advantage of the major population rise in that period.

Despite this, these demographic events cannot be assessed in wholly positive terms. The fall in the working-age population also means serious ageing of the labour force, with a sharp increase in workers aged over 45-50 and a sharp decrease in those aged under 30-35, i.e., the workers who, because of their age and training, are most in demand for jobs and roles calling for the use of new technologies.

In my view, there is another important factor, seldom taken into consideration, of international competition. We have to wonder whether a labour force which is declining in number and subject to ageing can face up to competition from labour forces in other countries with a significant working-age population

increase and a large number of young people, such as India and China, where, moreover, there has been and will be an enormous increase in educational standards.[7] We have to wonder whether Italy, and the entire European Union, will be able to achieve a real cultural and structural revolution in the field of extended education, employment and the overall economic and social organization in order to face up to these trends.

Is it desirable to have 18 million people over 65 and 2.5 million children under 10?[8] What type of psychological and social climate will these children have to face?

The expected population fall will lead to a phenomenon never seen before, with children becoming extraordinarily rare. In order to consider the demographic impact of the sharp fall in fertility, scholars have generally considered the psychological and social climate facing older people, without wondering about that of children. The equilibrium between the elderly and adult generations has been considered, but not the equally important equilibrium between the elderly and children or between children and children.

In Italy, assuming a constant fertility until 2047, there would be 1.2 million children aged under 5 and 5.7 million people aged over 80, with a ratio of approximately 1 to 5. If we consider the over-60s, the ratio would rise to 1 to 16. Each child would be surrounded by a large number of older people to take care of him, overcoming him with care and attention and ready to satisfy any physical and emotional desires.

We should wonder about the emotional climate in which these children would grow up and the emotional resources they could count on. This is all the more important if we consider that they would virtually all be only children. The children would therefore be largely deprived of playmates of their own age group. According to studies on child psychology regarding the order of birth, having siblings helps significantly in maturing in early and later childhood, while there are disadvantages in being an only child. Sibling rivalry has been shown to be a process which satisfies basic emotional needs and as well as for reaching a proper balance between individual and social needs, essential for stimulating creativity and team-work skills. It has also been said that prompt and complete satisfaction of needs lowers the child's independence threshold, with basic insecurity causing problems of social interaction and domination to emerge.

Therefore, the population dynamics under way in Italy for some years are neither desirable nor sustainable because of the speed of change and the numerical balance between the elderly, adults and children. We should also take into consideration other aspects, such as the problem of the role of life and death in society (linked with the number of births and deaths), and the problem of health-care changes related to population dynamics (Golini, 1996).

When fertility is well below replacement level, one of the most important questions is how long this rate is sustainable for the population concerned. With a fertility like the one in Italy over recent years, the population would, of course, actually disappear in the very long term.

On the other hand, according to the experience of some European countries, in the short-to-medium term (say 10 to 20 years) a very low fertility rate seems to be sustainable, provided that society is capable of facing both the extensive, rapid ageing of the total population and the labour forces, and the negative "momentum" which has been cited above.

The answer is more complex if we refer to the medium-to-long term, say about 30-40 years. The challenge of adaptation is much harder and the negative "momentum" could become so severe that the population might not have the endogenous capacity to recover from the negative demographic trends (i.e., a large excess of deaths over births, and therefore a large reduction in its size; the extensive ageing of the total population and the labour forces) and their impact on the economy and society.

Table 10 shows a simulation of the possible demographic effects of a very low fertility rate persisting for 20, 40 or 80 years before returning to replacement level. The simulation is based on the Italian population in 1994 and shows the different effects on the size and age profile of the population according to the length of the period in which fertility is well below replacement level. The effects differ widely according to whether the duration is 20 or 40 years, while the ones for 40 and 80 years differ much less. For the Italian population in 1994, 40 years of further very low fertility seems to be the period beyond which the effects would be extremely serious.

TABLE 10. POSSIBLE EFFECTS OF A SUSTAINED BELOW-REPLACEMENT FERTILITY ON SIZE AND AGE PROFILE OF POPULATION, BY LENGTH OF LOW FERTILITY PERIOD BEFORE RECOVERY UP TO REPLACEMENT LEVEL: ITALY

Length of low fertility period	*Index numbers of population size after 150 years (size of year zero = 100)*				*Ratio between people aged 60+ to 0-19*		
	0-19	*20-59*	*60+*	*Total*	*At year 0*	*Maximum*[a]	*At year 150*
20 years	75	58	86	68	99	198	114
40 years	29	22	34	26	99	339	114
80 years	25	19	28	22	99	380	114

[a]Reached in different years.

Source: Our elaborations.

The simulation is a projection of the 1994 population of Italy, with a TFR equal to 1.2 for 20, 40 or 80 years ahead, before its recovery up to 2.1; a slight decline is assumed in mortality, and no migration. It must be taken into account that Italian fertility has already been below 2.1 since 1977 and below 1.3 since 1993.

One can imagine that the replacement which fails to occur naturally and the empty slots in the age structure could be compensated by foreign immigration.

While Italy and the European Union should maintain an open-door immigration policy for ethical reasons, to gain advantages and out of sheer necessity (Golini, 1995), the number of immigrants admitted every year should be determined in function of the speed and effectiveness of their integration. The role of

immigration cannot be a determining factor from the demographic point of view because of the serious distortion of the population age structure. Italian society today is already suffering from difficulties with approximately 50,000 immigrants per year and a foreign community of approximately 1.0-1.2 million. It can be calculated that in order to achieve a steady level in the Italian population in the very long term, a continuous influx of several hundred thousand immigrants per year would be required, but this scenario does not seem to be socially sustainable.

The immigration problem, involving acceptance by the host population and a fruitful cooperation between the host and immigrant population, lies in the relatively slow pace of integration. Because of this, higher immigration levels cannot be proposed because of the constraints of the capacity of the host society to welcome immigrants and treat them as citizens.

POLICY AND PROGRAMME OPTIONS

Fertility seems to be the only factor where substantial changes capable of changing the Italian population profile could take place, given the excess of low fertility. However, for a change to have any substantial impact, fertility would have to rise to 1.7-1.8 children per woman. How could such a recovery be achieved? What technical and demographic framework would be required in order to achieve this change?

Assuming that current fertility, the female population of northern Italy would stabilize with the only child model while more than one woman out of five would be childless.[9] In order to achieve a fertility rate of 1.7 children per woman, the percentage of women with three children would have to rise from 5 per cent to 21 per cent, with an increase in the currently very small number of families with four children. In other words, one woman out of four would have to have at least three children. At the same time, the number of women with one or no children would have to fall. Currently, the demographic conditions for this do not apply. It is all too easy to point out that for 5 per cent of women to have four children, 10-15 per cent would already have to have three (but they total only 5 per cent). It likewise seems highly unlikely that with 33 per cent of women having two children there could be 21 per cent having a third child. It is therefore unlikely, if not impossible, to postulate a relatively rapid rise in fertility. In the medium term, the demographic conditions do not apply for a recovery in Italian fertility (whatever the social and cultural context involved) up to British or French levels, i.e., 1.7-1.8 children per woman.

Just how complex it is to interpret (and even more so to make forecasts) women's and couples' procreation choices can be seen if we consider the continuous changing and adaptation of women's path in life and its interaction with her partner's decisions. Decision-making regarding demographic behaviour of a couple has highly complex dynamics and it is hard to forecast how it will evolve from a social and psychological point of view. We might at least wonder whether in Italian society today women's interests are not intrinsically in contrast with those of children and society. I think we can answer affirmatively, and in this case the natural result is the fall in the number of children. We then have to wonder how to reconcile conflicting interests—those of individual

women and individual couples on one hand and the community as a whole on the other hand—and which political and cultural measures to adopt.

First of all, changes must be made in the conditions which are unfavourable to the procreation choices of women. Different social policies and a different type of social organization (especially with regard to the labour market and services) are required, as well as different attitudes and behaviour on the part of men, who must be induced to fully share the burden of domestic work.

In the second place, the structure of the Welfare State must be changed, since it now provides strong incentives to couples with very few or no children. These couples, during their working life, enjoy a higher standard of living (as well as benefits such as more free time) compared to couples with two or three children. They then enjoy the retirement benefits paid by the children of the couple who made sacrifices earlier. Finally, a proper education, and labour and housing policies are required so that the stages leading to the independence of young people are not so long; they should actually be shorter (Livi Bacci, 1997).

However, the politicians and the Government have only recently been concerned with the current and future problems the country is facing due to the very low fertility rate. The process leading to concrete, effective policy measures to change the current trends will probably be long and difficult.

NOTES

[1]This section is largely based on Golini, 1994b.

[2]According to the latest available data, there were 46,273 male (10.1 per cent of 26-year-olds) and 51,784 female (11.4 per cent of 26-year-olds) university graduates in 1994.

[3]For the population policy of the fascist government see Ipsen, 1996.

[4]The hypotheses involve three different fertility trends, a further slight fall in the mortality rates (the same for all three fertility hypotheses) and zero migration (see also note under table 8).

[5]Reference is made to countries with a long-settled population since they have a demographic, environmental and economic situation differing considerably from that in more recently populated continents.

[6]It should be stressed that these estimates do not take migration into account; this factor will be analysed below.

[7]Even now, various European and American companies utilize Indian software houses for accounting management and for creating software programmes. Some American companies utilize Chinese companies to launch communications satellite. In just 30 years between 1995 and 2025, the working-age population in India and China should rise from 1.1 billion to 1.6 billion people, an average annual increase of 17 million. On the other hand, not just Italy but also the whole European Union is facing a fall in the working-age population.

[8]In 2047, assuming a constant fertility rate.

[9]Reference is made to northern Italy because this is the area with the lowest fertility (in 1994, 25 million inhabitants had a total fertility rate of 1.04) and because it is a precursor of the social and demographic trends in the rest of the country).

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BELOW-REPLACEMENT FERTILITY IN JAPAN: TRENDS, DETERMINANTS AND PROSPECTS

Ryuichi Kaneko[*]

THE DEMOGRAPHIC SITUATION IN JAPAN, A RAPIDLY AGEING SOCIETY

Nowadays, the environment surrounding the Japanese economy and society is undergoing a profound transformation marked by changes in the demographic background caused by low fertility in the past. The most notable is the prospect that the population of Japan will soon be decreasing after the turn of the century. According to the latest population projections, the population of Japan will reach its peak in the year 2007, and decrease thereafter (figure I). It would probably be the first experience in its history to have a continuous and long-lasting loss of population by sustained below-replacement fertility.

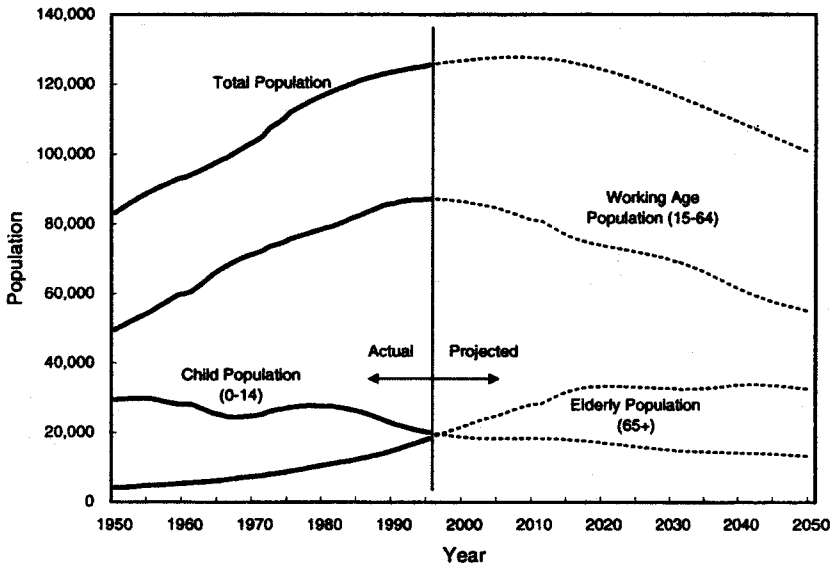
Population in the working age group 15 to 64 have already started decreasing since 1996 (figure I). In the past, particularly in the post-war period, the population growth in this age group both in an absolute and relative term has played an important role for the economic development of Japan, providing an abundant working force. Since such an advantageous demographic condition has not been sustained, the Japanese economy must adjust to the newly emerged situation of labour shortage.

Another turning point in Japanese demographics occurred in 1997, when the elderly population aged 65 and over exceeded the child population aged under 15 (figure I). Today, the proportion of elderly is reported to be 14.5 per cent from the 1995 census, which is slightly lower than the average of the developed countries in Europe. But reflecting the changes mentioned above, Japan will be among the most aged society soon after the turn of the century, overtaking many European precursors in just a decade or two.

In fact, its rapid speed is one of the most salient features of population ageing in Japan. It took only 24 years in Japan for the proportion of elderly to go from 7 to 14 per cent, while the other developed countries enjoyed much longer periods: United Kingdom 46 years, Germany 42 years, over 60 years in United States and Canada, 82 years in Sweden, and 114 years in France.

*National Institute of Population and Social Security Research, Tokyo.

Figure I. Trends of total population, and population by three age brackets



NOTE: Projected trends are from the medium variant.

Source: "Census of Japan", Management and Coordination Agency; "Population projections for Japan, National Institute of Population and Social Security Research.

All these demographic features are the outcome of changes in births and deaths in the past, since international migration to Japan has been insignificant. While an aspect of mortality is crucial to understanding the population change, it is beyond the scope of the present paper, which focuses on the recent below-replacement fertility. Before doing so, however, it is necessary to look back to the post-war trends for a more comprehensive understanding.

POST-WAR FERTILITY TRENDS IN BRIEF

The rapid population ageing of today's Japan, as described above was mainly caused by the rapid fertility transition experienced during the period of the post-war baby boom in 1947-1949 and the subsequent drastic decline in both the number of births and total fertility rate (figure II). During the three years of the baby boom, which is uniquely short, the number of births reached about 2.7 million annually, and the total fertility rate (TFR) was around 4.4. Within the next eight years the number of births in Japan went down by 42 per cent, and by 53 per cent in TFR, and the transition was completed by 1957. Hence, the fertility transition in Japan is quite unique in its speed in addition to the fact that it was the first demographic transition experience outside the Western world.

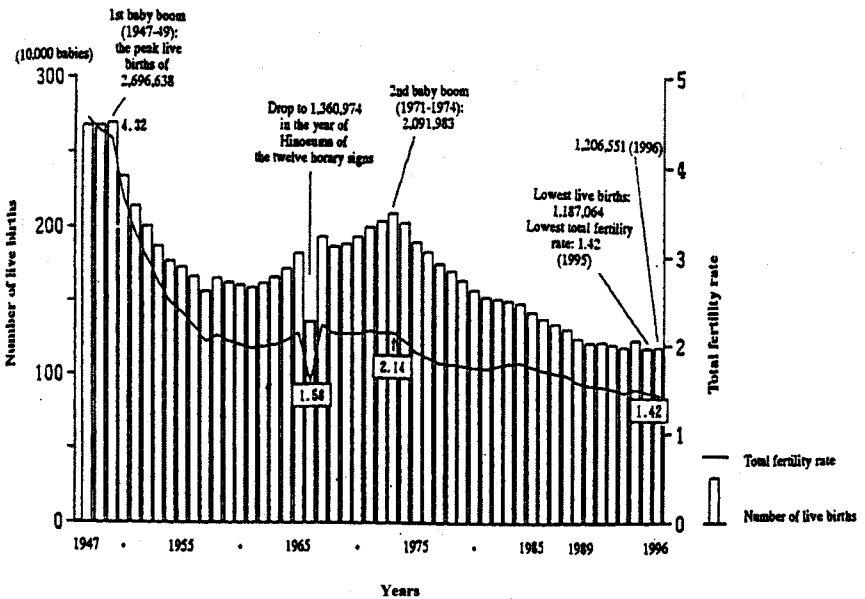
Fertility reduction in this period was mostly by reduction in marital fertility. With the disordered post-war economy and rapidly growing population from both massive repatriation and the acute baby boom, the Japanese people became very much aware of population problems confronting shortages of food, job and housing. In the meantime, married couples began to avoid having too many children, initially through induced abortion, which was legalized during the baby boom (1948), and subsequently through rapidly prevailing family-planning measures.

After the quick transition, TFR was stabilized around the replacement level until the mid-1970s, while the number of births gradually increased, corresponding to an increase in population among the reproductive ages. During this period the only exception was the abrupt baby bust in 1966, the year of Hinoe-uma (fiery horse): This is a superstition that girls born in this year are likely to have misfortune. About a quarter of normal annual births were either shifted to other years or were lost in this year. This unusual demographic phenomenon indicated that people had acquired highly efficient measures and skills of fertility control by that year.

In the early 1970s, another baby boom was experienced which was an echo of the post-war baby boom. Again, directly after the new baby boom, there was a long-lasting decline in the number of births and fertility rate. Since this was a departure from the replacement level, the population of Japan was destined to decline in the near future as well as age even more seriously than had previously been anticipated. The details of this fertility trend are examined in the next section.

In summary, the post-war years of more than five decades may be divided into three periods in terms of birth and fertility trends. The first period is the fertility transition consisting of the post-war baby boom (1947-1949) and the subsequent rapid fertility decline (1950-1959). The fertility reduction in this period

Figure II. Trends of number of births, and total fertility rate



Source: "Vital Statistics", Ministry of Health and Welfare, Japan.

is characterized by a reduction in marital fertility. The second is a period of post-demographic transition (1960-1974) with relatively stable fertility, which was around the replacement level. The third is a period since 1975, of below-replacement fertility showing a slow but still falling trend.

RECENT FERTILITY DECLINE AND TRENDS OF ITS COMPONENTS

Fertility decline since mid-1970s

In the third phase mentioned above, the number of births started to decrease right after the end of the second baby boom in the mid-1970s (figure II). Certain decreases in the number of births were expected in this period because smaller generations born during the post-war fertility transition were taking over the leading role of childbearing in place of the previous larger generations including the post-war baby boomers.

However, the TFR, which ought not to be affected by such a change in age structure, started to decline in the same period (figure II). This obviously indicates that people had started to change their reproductive behaviour toward lower fertility.[1]

TFR indicated a short upturn during 1982-1984 around the level of 1.8, but a basic downward trend has continued until today. The lowest-ever TFR was recorded in 1995, at 1.42 (although TFR in 1996 was announced at 1.43, the corrected figure for excess birth due to leap year was 1.42, which was the same as in 1995).[2]

The net reproduction rate (NRR) was 0.69 in 1996; in other words, fertility in Japan is now below replacement by 31 per cent. That means that the Japanese population is reduced by 31 per cent with every generation, providing that the present fertility rate remains constant. This is translated into an annual growth rate of -1.3 per cent, adopting the mean generation time (29.5 years) in the same year.

This long-lasting reduction and these lowest-ever figures in fertility draw wide public attention nowadays, particularly since the so-called "1.57 shock" in 1990 (TFR in 1989 was less than the unusual lowest figure of the Hinoe-uma year, and public attention was drawn mainly by the mass media). The Government coined a new term "shoshika" which means a reduction in the number of children, or "child bust".

Although the recent trend of declining fertility in Japan bears some similarity to those of Western countries in terms of basic declining patterns and socio-economic backgrounds, clear distinctions are apparent. One of the prominent disparities is found in illegitimate births. The proportion of illegitimate births to all births has remained at around 1 per cent for more than three decades, and was 1.2 per cent in 1995. In other words, almost all births occur in wedlock in Japan. This low prevalence of illegitimacy is considered to be a reflection of low prevalence of cohabitation among youth, which is another major distinction from Western societies. The proportion of never-married women aged 18 to 34 currently cohabiting is reported to stand at 1 per cent, according to a survey taken in 1992 (Institute of Population Problems, 1994).

Since births are firmly combined with marriage, fertility change in terms of TFR in Japan can be effectively separated into two parts: changes in prevalence of legal marriage, and changes in fertility within those marriages.

To see the overall contribution of these two aspects in relation to the fertility decline, decomposition analysis of changes in TFR is useful. According to the result, 157 per cent of the decline in TFR between 1975 and 1990 is attributed to changes in the proportion of people married in various age groups, and hence -57 per cent is attributed to changes in marital fertility (Kono, 1995). The negative value of the latter can be interpreted that marital fertility rose over the period, contributing to a rise in TFR. In other words, the entire decline in TFR between these years can be attributed to a decline in the proportion of women of childbearing age who are currently married; and, in addition, if it were not for the increase in marital fertility, it would make the decrease in TFR even lower.

Therefore, it is clear that the immediate demographic cause for fertility decline since the mid-1970s is the drastic drop in the proportion of women currently married of childbearing ages.

Marriage trends

Though the divorce rate shows a clear indication of an increase, the proportion of divorced and widowed among women aged 25 to 34 amounted to only 2.8 per cent even in 1995. Therefore, for the drastic decline in the proportion of those married, an increase in the proportion of women never married was responsible. The proportion never married in the female population has indeed risen conspicuously since the mid-1970s, and continues to rise (table 1). The proportion among women aged 25 to 29 in particular has doubled in these two decades (figure III).

TABLE 1. TRENDS IN PROPORTION NEVER MARRIED, BY AGE: JAPAN, 1970-1995
(*Percentage*)

Age	*Female*					
	1970	*1975*	*1980*	*1985*	*1990*	*1995*
15-19	97.8	8.6	99.0	98.9	98.2	98.9
20-24	71.6	69.2	77.7	81.4	85.0	96.4
25-29	18.1	20.9	24.0	30.6	40.2	48.0
30-34	7.2	7.7	9.1	10.4	13.9	19.7
35-39	5.8	5.3	5.5	6.6	7.5	10.0
40-44	5.3	5.0	4.4	4.9	5.8	6.7
45-49	4.0	4.9	4.4	4.3	4.6	5.6

Source: Population Census of Japan, Bureau of Statistics, Management and Coordination Agency.

This sharp rise is reflected in the gradual increase in the marrying age. Figure IV shows the post-war trend of the mean age at first marriage, which indicates a linear rise in both male and female curves since 1975. This timing of

rises in the marriage age coincides with the timing of the fertility decline. Figure V shows the changes in age pattern of the first marriage rate. The graphs at various years indicate considerable shifts of age at the first marriage toward older, as well as a remarkable fall in rates in the early twenties.

Based on these data, it seems clear that the recent fertility decline in Japan was mainly caused by the postponement of marriage among the never-married youth, which leads to a massive reduction in the married population of childbearing ages, at least on a temporary basis.

Trends in marital fertility

As for marital fertility, there have been very few changes observed so far. Figure VI reveals that the average number of children born to a couple married for between 15 and 19 years has remained at 2.2 since the 1970s. Although the completed number of children reflects the birth frequency in the past, say 15 years, both the ideal and expected number of children, which includes the attitude toward birth among young couples, have also remained constant over the same period.

Not only the number of children but also the mean intervals between marriage and first birth, or subsequent two births, have remained more or less stable until now.

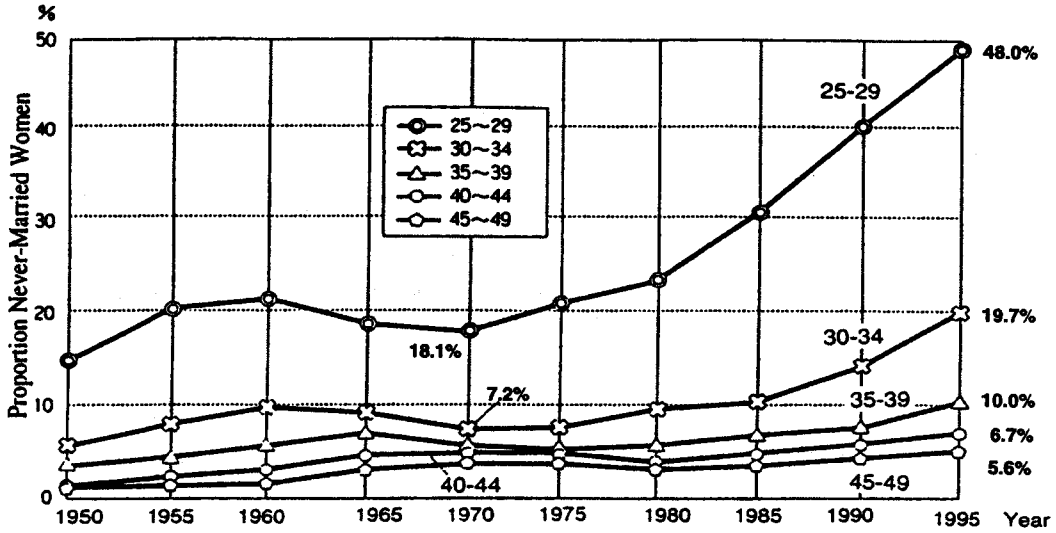
Therefore, it is obvious that marital fertility changes have not been responsible for the recent fertility fall since the mid-1970s.

But it should be pointed out now that there are some signs of the change appearing. First, the annual number of births continues to hover around 1.2 million, while that of first marriages has gradually increased since the late 1980s, from 710,000 in 1988 to 800,000 in 1996. The increase in the number of marriages is mainly due to the arrival of larger cohorts, including the second baby boomers, to join the ranks of the marriageable population. The discrepancy of trends in marriage and birth implies certain changes in birth behaviour in the early years of marriage. In fact, the national fertility survey in 1992 indicates a slight decline in fertility for couples married less than 10 years (IPP, 1993).

In addition, a barely visible decline in the total marital fertility rate, the sum of marital fertility according to marriage duration, has been found since the late 1980s (table 2). It implies either a birth-timing shift towards longer marriage and/or an overall reduction in marital fertility which eventually reduces completed fertility in the future.

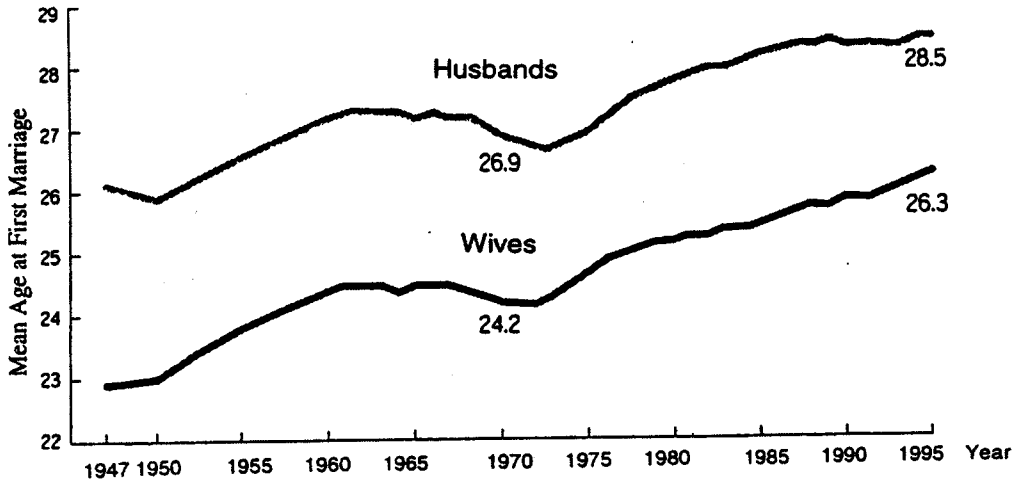
In any case, the changes themselves are not clear so far, and a continuous monitoring on progress needs to be kept.

Figure III. Trends of proportion never-married women in reproductive ages



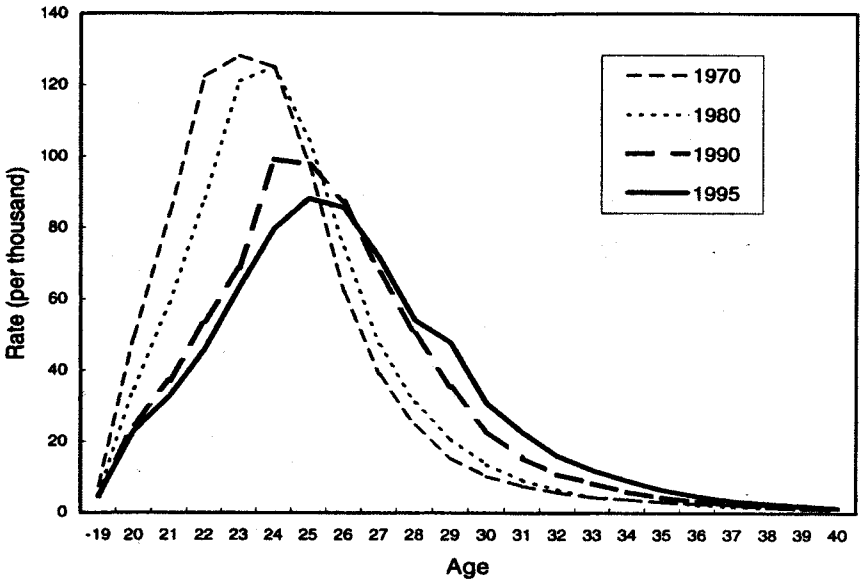
Source: "Census Report", Statistic Bureau, Management and Coordination Agency.

Figure IV. Trends of mean age at first marriage, by sex



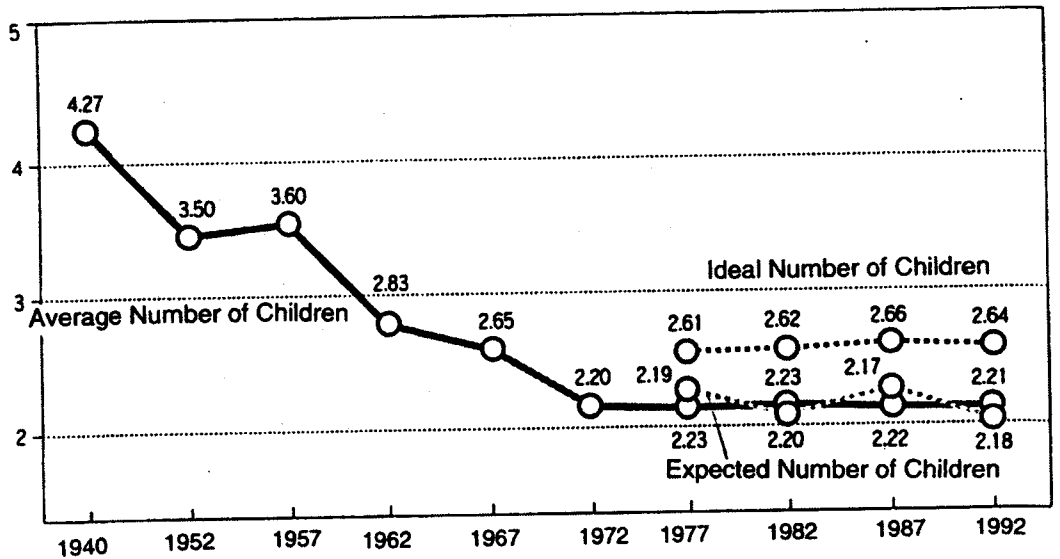
Source: "Vital Statistics", Statistics and Information Department, Ministry of Health and Welfare, Japan.

Figure V. Age pattern of first marriage rate



Source: "Vital Statistics", 1970, 1980, 1990, 1995, Ministry of Health and Welfare.

Figure VI. Average, ideal and expected family size per married couple



Source: "National Fertility Survey", 1-10th surveys, National Institute of Population and Social Security Research.

TABLE 2. TRENDS OF TFR AND TMFR: 1975-1990
(*Percentage*)

Year	*TFR*	*TMFR*
1975	1.91	2.23
1976	1.85	2.15
1977	1.80	2.15
1978	1.79	2.13
1979	1.77	2.14
1980	1.75	2.15
1981	1.74	2.16
1982	1.77	2.14
1983	1.80	2.16
1984	1.81	2.13
1985	1.76	2.17
1986	1.72	2.10
1987	1.69	2.11
1988	1.66	2.04
1989	1.57	2.05
1990	1.54	2.04

NOTE: TMFR (Total Marital Fertility Rate): sum of fertility rates by marital duration.
Source: TFR: Vital Statistics, Ministry of Health and Welfare.
TMFR: Tenth National Fertility Survey, Institute of Population Problems, Ministry of Health and Welfare.

DETERMINANTS AND BACKGROUND OF TRENDS IN MARRIAGE

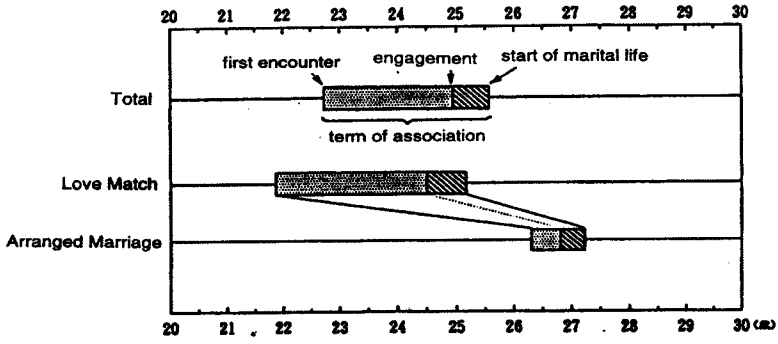
An analysis on determining factors of marriage timing

As examined above, changes in marriage behaviour are mainly responsible for the fertility decline in recent years. In order to see what has been happening to marriage in Japan, an attempt is made to approach it from two aspects, namely its timing and eventual prevalence. First, let's take a closer look at the timing traits of the contemporary marriage process.

Marriage is seen as a process from the first meeting of future partners to the onset of living together or getting married (for example, see figure VII). In spite of a sharp rise in the mean age at the first marriage, the mean age at the first encounter of couples married since the mid-1970s has been rather stable. In other words, the mean length between the encounter and marriage has been prolonged. According to the national fertility survey (IPP, 1993), there has been a 77 per cent increase in the mean age at first marriage between women married in the mid-1970s and those married around 1990; this is attributed to the prolongation of the marriage process (figure VIII). Analysis of the increase in the mean age at first marriage among female birth cohorts indicates similar results (table 3).

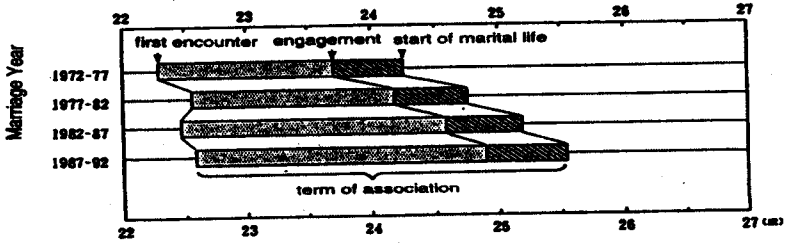
Next, changes in population structure by socio-economic characteristics are considered to have an effect on the rise in the marriage age. For instance, an increase in those with higher educational achievement among young women is

Figure VII. Average process to first marriage of Japanese women, by marriage type



Source: "The 10th National Fertility Survey, 1992", Institute of Population Problems, Ministry of Health and Welfare.

Figure VIII. Average process to first marriage, by marriage year



Source: "The 10th National Fertility Survey, 1992", Institute of Population Problems, Ministry of Health and Welfare.

supposed to push up the mean age at marriage, since women with a higher level of education tend to get married at a later age on average. In this connection, an increase in the marriage age is separated into two parts: an increase caused by changes in the population composition by educational level, and the residual.

Table 3 exhibits the results of such a decomposition analysis by multiple socio-economic variables, including educational level. An increase of 56 per cent in the mean age at first marriage between two five-year female cohorts, born in 1945-1949 and in 1950-1954, is explained by the change in the cohort structure according to educational level, providing that other listed factors remain constant. It also shows that out of 56 per cent of the educational contribution, 50 per cent works through delaying the timing of the first encounter, and the remaining 6 per cent through prolonging the marriage process (Kaneko, 1995).

TABLE 3. CONTRIBUTION OF SOCIO-ECONOMIC COMPOSITION CHANGES TO MARRIAGE DELAY BETWEEN FEMALE COHORTS: A MULTIPLE DECOMPOSITION ANALYSIS

	1945-1949 to 1950-1954			*1950-1954 to 1955-1959*		
Cohorts in birth years	*Increase of MAFM*	*Increase of MAFE*	*Increase of MLAT*	*Increase of MAFM*	*Increase of MAFE*	*Increase of MLAT*
Timing shift (month)	3.45	0.30	3.15	5.93	1.73	4.20
(proportion in per cent)	100.0	8.7	91.3	100.0	29.1	70.9
Total contribution	28.3	-53.7	82.0	42.3	10.8	31.5
Socio-economic variables:						
Educational attainment	56.0	50.3	5.7	30.6	27.3	3.3
Occupation	3.1	4.9	-1.8	15.4	15.2	0.2
Type of encounter	-33.0	-120.9	88.0	-9.5	-35.5	26.0
Parental co-residence	0.4	1.8	-1.4	-1.0	-1.5	0.5
Number of siblings	-0.9	-4.0	-5.0	0.1	-1.4	1.4
Father's occupation	0.7	3.1	-2.4	-0.4	-0.9	0.5
Mother's work status	-15.2	-11.8	-3.4	-2.1	0.1	-2.2
Mother's age at marriage	25.3	23.0	2.2	9.3	7.5	1.8
Residual	71.7	62.4	9.3	57.7	18.4	39.3

NOTE: MAFM: mean age at first marriage; MAFE: mean age at first encounter; MLAT: mean length of association. Values above indicate contributions of each variable to increase of MAFM, MAFE and MLAT.

Source: Kaneko (1995), *Jinko Mondai Kenkyu (Journal of Population Problems)*, vol. 51, No. 2, p. 28.

The total contribution of changes in socio-economic variables listed in table 3 to the shift of marriage timing is 28 per cent between cohorts 1945-1949 and 1950-1954, and 42 per cent between cohorts 1950-1954 and 1955-1959. The effect for the former cohorts is smaller than that of educational level only, because some factors work in the opposite direction to pull down the marriage age. As for the latter cohorts, such a negative effect is weak so that a shift in marriage age as high as 42 per cent are accounted for by changes in socio-

economic variables, in which educational level plays the leading role. In addition to the educational level, occupational changes (toward white collar) in the latter cohorts are observed to exert some effect on the delay of marriage.

The cohorts under concern have got married mainly from the early 1970s to early 1980s, a decade in which Japan saw the onset of a long-rising trend in the mean age at marriage. As seen above, compositional changes of the female population by socio-economic characteristics such as a rise in educational level are found to have substantial effects on marital delay, at least in the early half of the period of marriage change. As for the other half of the period, it would be premature for the analysis because relevant cohorts are still in progress of the marriage process.

Nevertheless, it has been observed that more than half of the change in marriage timing is left unexplained by socio-economic factors in the analysis. According to further analysis, by introducing some attitudinal variables toward marriage and family formation, the unexplained residual is reduced considerably without reducing the contribution of socio-economic factors. This implies that changes in the attitudes, along with cohorts, are responsible for the rise in the mean age at first marriage, and the changes have occurred irrespective of socio-economic characteristics such as the level of educational achievement.

A factor that is working against the rising trend of marriage age is the change in composition of marriage types: love match and arranged marriage. Since the processes of arranged marriages start much later in life and do not last as long as those of love match, a decrease in arranged marriages in percentage necessarily causes early marriage with a longer waiting time as a result. The proportion of arranged marriages has decreased at a constant rate from about 70 per cent around the wartime to 12.7 per cent in 1991 (IPP, 1993; Ministry of Health and Welfare, 1992). The previous analysis indicates in fact that changes in composition of two types of encounter (increase of love match) have negative effects on the delay of marriage through moving up the timing of encounter (table 3).[3] This implies that if it were not for a change in marriage types, an increase in the mean age of marriage would have been more drastic than that actually observed.

Attitude toward marriage among unmarried youth

Though the change in the timing aspect of marriage behaviour accounts for a substantial increase in the proportion of youth never married followed by the drastic fertility decline in Japan, the other aspect of the same phenomenon, the eventual prevalence of marriage among cohorts who delay their marriage, is even more crucial to the future development of fertility. Since expression of the prevalence aspect belongs to the future behaviour of today's unmarried people, relevant information we could obtain now is on attitudes toward future marriage among unmarried youth.

According to recent surveys, more than 90 per cent of never-married women aged 18 to 34 intend to marry eventually (IPP, 1989, 1994). The traditional norm of universal marriage may be maintained in some way, or at least the value of marriage in the life course is still widely recognized even among youth that seem to refrain from marriage. Indeed, about 70 per cent of them

selected "of some merits" in their getting married. The results from two surveys separated by five years yielded almost the same results. These indicate that young women still regard marriage as beneficial.

Do these results imply that there will be wide prevalence of marriage among those women by the end of their reproductive span? There exist several other results that make us suspicious of this question. The major merits of marriage selected by them are among categories related to personal or emotional gains, such as attaining a peaceful state of mind, while marriage intended for economic or social advantage, which is somewhat more urgent, has decreased. Above all, 90 per cent of the same respondents approve the merits of their present single life in the past repeated surveys. The percentage is even higher for those who have male mates. These results seem to imply that the constitution or temperature of desire for getting married eventually is changing, while its universality still remains.

In fact, among never-married women who have the intention of marrying in the future, those who chose "will marry by a certain age" against "do not care for marriage until meeting the ideal partner," decreased from 54 per cent to 49 per cent between two surveys with a five-year interval. This may imply that pressure to marry before certain age limits seems to have lessened somewhat, and that the proportion of those never married at the end of reproductive ages would increase as much as those who would have not met an "ideal partner" even though all these women had the intention of marrying. If this is the case, the supply condition of suitable mates within the marriage market should play a crucial role in determining the final level of marriage prevalence.

What is the present supply condition? According to the same surveys, some 40 per cent of never-married women aged 18 to 34 do not have a male mate at all, even as a friend, and the situation has remained similar for at least a decade since the question was first posed. The figure is incomparably high in comparison with Western countries.[4]

A high proportion of unmarried females who have no male mate may indicate that any effective system for matchmaking, such as dating, as seen in Western societies, or traditional arranged meetings such as Japan once had, is not working in Japan today. In fact, a major reason for currently being single given by respondents aged 25 to 34 was "have not met a suitable mate" (55 per cent). The supply-side condition of the marriage market in contemporary Japan seems tight because of a lack of opportunities to become acquainted with members of the opposite sex, which could be a restrictive factor for the future prevalence of marriage.

A socio-economic background of marriage trends

The background factors that relate to marriage behaviour are numerous. They are often classified by the supply and demand systems that we partly employed above. As the supply conditions of marriage partners mirrors the demand circumstance among those members of the opposite sex, we here focus on some of the demand-side factors. As long as choice of marriage is rationally done, balance of costs and benefits of getting married is relevant. When marriage behaviour changes, environmental factors related to either costs or

benefits, and/or subjective criterion for costs and benefits must be changed. We here examine some of the background factors from these two viewpoints separately.

Among environmental changes in cost-benefit factors of marriage behaviour, changes in women's role and status are among the most basic factors. Levels of educational attainment for females have been improving at a faster rate than for males, resulting in a higher enrolment rate in high school and college, including junior college, among females today (table 4). In the meantime, women's labour force participation rates have also risen, and wage differentials between the two sexes have reduced in the course of a transformation toward a more service- or white-collar-oriented industry.

TABLE 4. TRENDS OF HIGH SCHOOL AND COLLEGE ENROLMENT RATE, BY SEX
(*Percentage*)

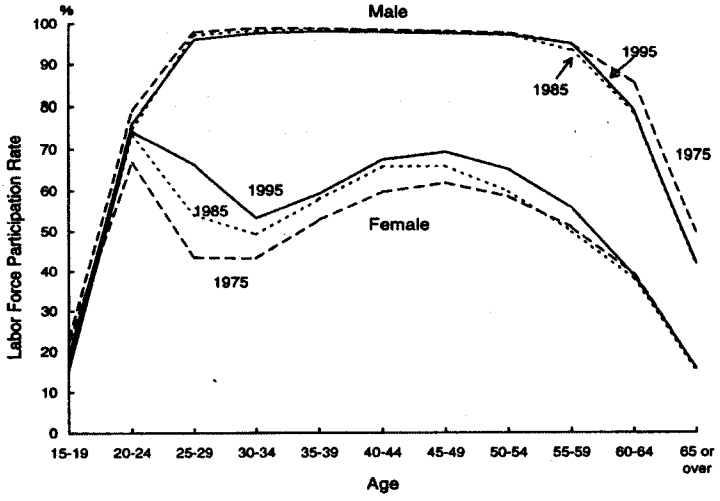
Year	*High school*		*College and higher*	
	Male	*Female*	*Male*	*Female*
1965	71.7	69.6	25.3	13.3
1970	81.6	82.7	32.4	19.2
1975	91.0	93.0	45.5	34.1
1980	93.1	95.4	44.0	34.9
1985	92.8	94.9	45.1	37.0
1990	93.2	95.6	41.1	40.5
1995	94.7	97.0	51.4	53.0
1996	94.8	97.1	52.6	53.7

Source: "Monbu-sho School Survey, 1996", Ministry of Education.

While the above changes have done much to contribute to the improvement of women's economic and social status in recent decades, not much changed are other circumstances such as the conventional norms of division of labour by gender in household or corporate working traditions that require regular staff for prolonged service. Housework and childcare continue to be the tasks of housewives, whether they work outside the home or not. Most women, when graduated from school enter the labour force in contemporary Japan. Some of them, however, quit their careers after marriage or childbirth, though they may return to the labour force, mostly as part-time workers after a period of child-rearing. This behaviour makes the age pattern of the female labour force participation rate M-shaped in Japan (figure IX), indicating that working with small children is very difficult for women. Therefore, highly-educated working women, whose job is likely to be advantageous, may hesitate to get married (Atoh, 1994).

A survey revealed that wives spent an average of 4 hours and 17 minutes a day on housekeeping and childcare if they worked outside the home, and 7 hours 19 minutes if they stayed at home, while husbands spent only 19 minutes or 24 minutes respectively whether their wives worked outside the home or not

Figure IX. Labour force participation rates, by age and sex: Japan, 1975, 1985 and 1995



Source: Population Census of Japan, Bureau of Statistics, Management and Coordination Agency.

(Management and Coordination Agency, 1991). There was observed virtually no difference in husbands' contribution to housework whether their wives worked outside or not. The reason behind this is apparently that the man's working life is dominated by firms and corporations. It is reported that Japanese men work an average of 7 hours and 15 minutes on weekdays, excluding commuting time (1990), while American men work 5 hours and 45 minutes (1985) (NHK, 1994). This pattern is considered to have been created during the high-growth period of the Japanese economy before the 1970s, taking advantage of the division of labour by gender within the household. These residual environment factors may conflict with new situations surrounding new generations of women.

As for tendencies in the second aspect, subjective criterion of marital choice, little data are available on this subject. However, the decomposition analysis of delayed marriage, with multiple variables referred to above, show that attitudinal shifts have played an important role in changing the marriage pattern. The generations born in the post-war period are characterized by the high standard of living they have enjoyed since early childhood due to the

increasing income of their parents, and fewer siblings. They are so highly educated that their earning power, or opportunity costs, are much higher than those of the preceding generations for both sexes. The gap is wide particularly for women, because of the sexually segregated low educational investment among women of the previous generations. These advantages that the post-war young generations possess ought to affect their way of thinking, or values. Since the younger generations are mostly able to establish their own economic independence, at least potentially, individualistic values in which their own resources are allocated to their own aims may seem more advantageous. In addition, for them, the immediate necessity of marriage is reduced owing to the diminishing economic and social utility of marriage, which is increasingly being substituted by other facilities and opportunities. Accordingly, factors of marital choice became limited by personal or psychological matters.

In fact, as stated before, the surveys show that the conceived merits of marriage among unmarried youth are shifting toward personal or taste-related matters. At the same time, the particular downside of marriage as conceived by unmarried youth is "loss of freedom in behaviour and lifestyle", followed by "loss of wide friendships" and "loss of economic margins". "Carefree life without own family" was also the reason given by young men. It seems that by getting married unmarried people are afraid of losing an advantageous, individualistic lifestyle.

To the extent that the rising standards of marital lives and partners among youth can explain the aggregate changes in marriage behaviour, it is possible that the prevalence of marriage in the future may remain low or become even lower, even if circumstantial factors such as women's social status remain constant.

PROSPECT OF FERTILITY TREND AND ITS INFLUENCES

Prospect of fertility from the latest population projection

The Government announced a new population projection for Japan in January 1997. The major difference from the previous projection lies in the fertility prospects. The final level of TFR has been lowered from 1.80 to 1.61 in the medium prospect, reflecting observed differences between the actual and the projected since the release of the previous projection (table 5, figure X).

The future course of annual TFR was projected by setting several parameters that stand for fertility components relevant to the contemporary trend of fertility in Japan. Among them, the most important three are the mean age at first marriage for female cohorts (MAFM), the proportion of never-married women aged 50 (PNM50), and the average completed family size for married couples (ACFS).

MAFM stands for timings of marriage and subsequent births of female cohorts. Two major effects from the trend of MAFM are considered. First, it acutely affects period TFR by concentrating low (or high) parts of age-specific fertility rates from various cohorts to a certain period when it rises (drops). The effect of rising MAFM is considered to be responsible for the present excessively low fertility as compared with cohort fertility. Therefore, as MAFM

converges to a certain level and ceases to rise, the period TFR is expected to show an upturn as observed in figure X.[5] The three convergence levels of MAFM for the projection variants are shown in table 5. The second effect of MAFM on fertility is on ACFS corresponding to rise in MAFM. Because it shifts birth timing, the completed level of family size either decreases or increases depending on the direction in which MAFM moves MAFM in relation to the female age pattern of physical potential of reproduction. Some loss of ACFS is calculated in the projection as seen in table 5, according to actual data of ACFS by age of first marriage.

PNM50 stands for marriage prevalence at the end of the reproductive span of female cohorts. Since births are assumed to occur exclusively within marriage in the projection, PNM50 directly affects cohort fertility in a proportional manner. Although no increase beyond 5 per cent has ever been observed in PNM50 in Japan, it is assumed to increase in the projection, say to 13.8 per cent in the medium variant (table 5). A major reason for this assumption is the rising proportion of younger people never married. The anticipations and backgrounds on marriage prevalence examined in the previous sections are also relevant to the assumption.

Finally, ACFS stands for marital fertility. Though observed ACFS has been stable as noted before, some loss corresponding to a rise in MAFM is anticipated in the assumption (table 5).

For each of these parameters, values to yield somewhat lower fertility are assumed in the new projection as compared with the previous round. As a result, in the medium variant for instance, annual TFR initially decreases to a lowest-ever value of 1.38 in year 2000, then gradually increases to converge to 1.61 in 2030 and after (figure X).

In the meantime, the number of births in the medium variant is expected to increase slightly over the years until 2003 due to the echo effect of the second baby boom in the early 1970s, although the upsurge is too moderate to be named as another baby boom. Afterwards, the number goes down monotonically, resulting in two thirds of the present number in 2050, half of the number of deaths at that time.

Influences of long-lasting below-replacement fertility

Population decline and population ageing are obviously the two major direct consequences of the long-lasting below-replacement fertility. As illustrated in the opening section, the total population of Japan will start to decrease after the year 2007, eventually arriving at barely 100 million by the year 2050 in the medium projection (table 5). The long-range projection foresees that the population will continue to decrease to 67 million in the year 2100, little more than a half of the present population (54 per cent).

The proportion of population aged 65 and over, which was 14.5 per cent in 1995, will leap up to the world's highest in the first quarter of the twenty-first century, reaching 27.4 per cent by the year 2025. Around 2050 it will reach the highest level of the century, 32.3 per cent, or every third person (table 5). The dependency ratio, a ratio of child and elderly population to working age

TABLE 5. ASSUMPTION AND HIGHLIGHTS OF THE LATEST POPULATION PROJECTION: JAPAN

Assumptions

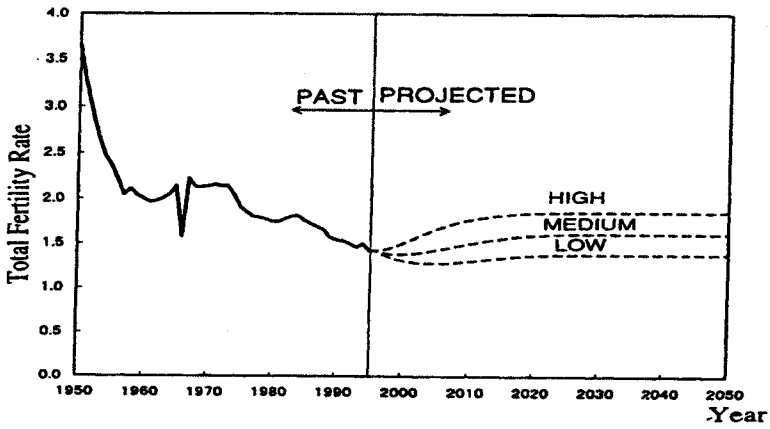
Projected Population		Medium variant	High variant	Low variant
Fertility	Mean age at first marriage(cohort)*	24.2 ↓ 27.4	24.2 ↓ 25.7	24.2 ↓ 28.9
	Proportion never married(cohort) *	4.6% ↓ 13.8%	4.6% ↓ 8.3%	4.6% ↓ 17.9%
	Average family size (cohort) *	2.18 ↓ 1.96	2.18 ↓ 2.12	2.18 ↓ 1.76
	Total Fertility Rate	1.42[1995] ↓ 1.38[2000] ↓ 1.61[2030-]	1.42[1995] ↓ (no bottom) ↓ 1.85[2030-]	1.42[1995] ↓ 1.28[2005] ↓ 1.45[2030-]
mortality	Life expectancy	male : 76.36[1995] → 79.43[2050] female : 82.84[1995] → 86.47[2050]		
Sex ratio at birth		105.6 (average over 1991-95)		
International migration		constant with average net immigration rates by age and sex over the period of Oct. 1990 to Sep. 1995.		

Highlights of the Results

Population (thousands)	1995	125,570	125,570	125,570
		↓	↓	↓
	《 peak 》	127,782 [2007]	129,563 [2011]	127,050 [2004]
		↓	↓	↓
	2025	120,913	125,201	117,484
		↓	↓	↓
	2050	100,496	110,962	92,309
Proportion Aged 65 and Over	1995	14.6%	14.6%	14.6%
		↓	↓	↓
	2025	27.4%	26.5%	28.2%
		↓	↓	↓
	2050	32.3%	29.2%	35.2%
Dependency Ratio (65 and over)	1995	43.9% (20.9%)	43.9% (20.9%)	43.9% (20.9%)
		↓	↓	↓
	2025	68.0% (46.0%)	69.5% (44.8%)	66.3% (46.9%)
		↓	↓	↓
	2050	83.0% (59.1%)	80.6% (52.8%)	85.4% (65.2%)

*Upper figures are from the latest cohorts. Lower figures (after arrows) are from cohort born in 1980.

Figure X. Trend and prospects of total fertility in Japan



Source: "Population Projection for Japan: 1996-2100", National Institute of Population and Social Security Research.

population, will also increase as a result of both the increase in the elderly population and the decrease in the working age population. The child dependency ratio will somehow be stable over the entire projection period ranging from 21.3 per cent to 24.0 per cent.

These schemas about future population in Japan basically hold in any of three projection variants, though the levels to which figures may reach differ considerably. Population in the year 2050 ranges from 92 to 110 thousand, and the proportion of the population aged 65 and over ranges from 29.2 per cent to 35.2 per cent.

Population ageing also advances within each age group. The proportion of population aged 75 and over among the population aged 65 and over will increase from 39 per cent in 1995 to 57 per cent by the year 2025. This implies that unit costs of social security for the elderly population will increase as time goes on, since older-elderly people are more expensive in terms of medical care and nursing. In addition, it should be noticed that the population of the working ages 15 to 64, or more specifically the population in the labour force, is also rapidly ageing, presumably entailing such a consequence as decline in productivity and adaptability of the labour force as a whole.

Indirect consequences of low fertility in Japan on its future economy and society are brought about mostly through decreasing population and population ageing as mentioned above.[6] Their major categories are (*a*) the decline and ageing of the labour force population; (*b*) reduction of market consumption; (*c*) increase in the cost of social security; and (*d*) reduction of savings and investment.

Government policies toward curbing extremely low fertility

The Japanese Government is deeply concerned about the contemporary below-replacement fertility that would cause population decline and exacerbating population ageing. The Government is prepared to exert countermeasures in two different directions: measures to tackle the problem of low fertility itself, and measures to cope with consequences of the low fertility.

As for the former, the Government, with the initiative of the Ministry of Health and Welfare, established the so-called Angel Plan in 1994, with the hope that it would serve to brake the excessive reduction in the number of children through family policy measures without infringing upon individuals' rights of reproductive choice. Under this plan, comprehensive measures are being promoted, such as: (*a*) support for simultaneous child-rearing and work; (*b*) support for child-rearing at home; (*c*) arrangements for housing and living environments; (*d*) actualization of a relaxed education and a healthy maturation; and (*e*) reduction of child-rearing costs. In addition, urgent measures are being taken under this plan to meet diversified childcare needs such as infant care and care at night-time.[7]

The plan does not include any measure to affect marriage directly. Since the immediate cause of fertility decline is changes in marital behaviour as explained throughout this article, the effects of the plan are to be more or less indirect. They try to be effective as a countermeasure to low fertility through two steps: first, to increase the appeal of marriage by reducing its costs particularly in child-rearing, and secondly, to increase the number of children for married couples to ideal numbers conceived by themselves, which is known to be substantially higher than those realized (see figure VI). It is true that direct measures to promote marriages are too delicate to be enforced as government interventions, but measures that form an environment in which the youth earnestly seeking partners are able to find them without a hitch should be one of requisites.[8]

As for measures to cope with consequences of low fertility, i.e., to cope with all consequences of the rapidly changing age composition and declining population, comprehensive reforms of Japanese economy and society as a whole are needed. In this connection, the six grand reform packages that cover virtually every field of its economy and society are proposed in the prime minister's political agenda,[9] one of which is the structural reform package of the social security system that is relevant to medical care, pension, and welfare. For instance, the so-called Golden Plan established in 1989 and revised in 1993 as a New Golden Plan, the Ten-year Strategy to Promote Health Care and Welfare for the Elderly, is presently ongoing. This plan was made with a view to establishing a long-term care service system allowing elderly people the necessary

long-term care to be independent as much as possible and to continue living in their familiar homes and communities. As for the expenses of long-term care for the elderly, the mandatory nursing insurance system, providing nursing care for ailing elderly people, is likely to be enacted in the ongoing session of the Diet.[10]

NOTES

[1]Contributions of compositional change in childbearing ages and of behavioural change can be estimated by decomposition analysis of change in the crude birth rate (CBR) between 1975 and 1990. The result shows that half (53 per cent) of the reduction in CBR is attributed to changes in age structure, and the rest is for changes in behaviour. A combination of these two factors has made today's child population exceedingly small in Japan.

[2]Trends of birth and fertility according to region go mostly in parallel to that of Japan as a whole, and the differentials seem to be somewhat fixed these days. The range of TFRs of 47 prefectures in 1996 was 1.07 (Tokyo) to 1.86 (Okinawa), or 0.79; while excluding Tokyo and Okinawa, it was 1.30-1.73, or 0.43.

[3]If the effect is examined a little closer, it is observed that an increase in love matches has two effects in different directions. It advances the timing of the first encounter with a future spouse, while at the same time it prolongs the term from encounter to marriage. Since the former effect is dominant, the overall effect contributes to an earlier marriage.

[4]According to The Fifth World Youth Survey in 1993, the proportion of men and women aged 18 to 24 who have friend(s) of the opposite sex is 48 per cent in Japan. Corresponding values are 84 per cent in Sweden, 86 per cent in the United Kingdom, 82 per cent in the United States, 84 per cent in Germany, and 85 per cent in France (MCA, 1996).

[5]This is sometimes called the catch-up effect, because it is produced by the resumption of formerly postponed births.

[6]Kono (1992) discussed comprehensively the consequences of fertility decline in Japan.

[7]The Council on Population Problems of the Government of Japan issued on 27 October 1997 a report entitled "On the basic viewpoint regarding the trend towards fewer children—a society of decreasing population; responsibilities and choices for the future", in which the below-replacement fertility is seen as an inevitable issue, and determinants, consequences and feasible countermeasures of the issue are thoroughly investigated for the first time by a Japanese governmental body. A provisional English translation of the outline of the report is available at the web site of the Ministry of Health and Welfare, *http://www.mhw.go.jp/english/index.html*.

[8]According to the Tenth Japanese National Fertility Survey in 1992, the proportion of never-married youth under age 35 who have no association with any friend of the opposite sex is 47 per cent in male, and 39 per cent in female. These figures are substantially high as compared with those seen in the Western countries (around 80 per cent according to the World Youth Survey). Besides, in the same survey in 1992, the most frequent answer to a question about the reason for staying single is "have not met a suitable mate" (54 per cent of males aged 25-34, and 55 per cent of females of the same age).

[9]The six grand reform packages that are proposed in the Prime Minister's political agenda are Administrative Reform, Fiscal Structural Reform, Social Security Structural Reform, Structural Reform for the Japanese Economy, Financial System Reform, and Educational Reform.

[10]The nursing insurance system was enacted in the Diet in December 1997.

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Population Bulletin of the United Nations, Nos. 40/41—1999

FERTILITY TRENDS IN RUSSIA AND THE EUROPEAN NEWLY INDEPENDENT STATES: CRISIS OR TURNING POINT?*

*Sergei V. Zakharov***

In the paper the analysis of latest demographic trends in the context of long-term population development is limited to six countries of the former Soviet Union: Belarus, Estonia, Latvia, Lithuania, the Russian Federation and Ukraine. Three Baltic and three Slavic countries together cover the most of the territory of the European part of the former Soviet Union. At the end of the Soviet era their demographic trends have differed in many respects; however, concerning the stage of population development the countries referred to are closer to each other than with the former Soviet republics in Central Asia, or Transcaucasia as well as Moldova.

DEPOPULATION: RESULT OF REFORMS OR CONSEQUENCE OF LONG-TERM DEVELOPMENT?

At the beginning of the 1990s there was a major change in the balance of births and deaths; all the countries under study, one after another, entered into a period of population decrease. Natural increase turned negative in 1991 in Estonia, Latvia and Ukraine; in 1992 in Russia; in 1993 in Belarus; and in 1994 in Lithuania. In the Baltic countries negative natural increase was accompanied by the negative net migration observed since 1990. According to official statistics, by 1995 population had decreased by about 5 per cent in Latvia and Estonia, approximately 1 per cent in Ukraine and Lithuania, and 0.3-0.4 per cent in Russia and Belarus. Despite the fact that the migration statistics could prove deficient and that some short-term migration flows could change in the near future, the established negative natural population growth will ensure continuous depopulation in these countries for the coming decade at least.

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*Part of this research has benefited from collaborative work with Dr. Kalev Katus from Estonian Interuniversity Population Research Centre while re-drafting a paper entitled "Demographic adaptation to socioeconomic changes in the USSR successor States", presented at the IUSSP XXIIIrd General Population Conference in Beijing, October 1997. I should like to express my sincere gratitude to him for providing some important data and helpful comments on fertility trends in the Baltic States.

**Centre for Demography and Human Ecology, Institute for Economic Forecasting, Russian Academy of Sciences, Moscow, Russian Federation.

Mass media has linked the new trend in population growth unambiguously to the political, social and economic transition and/or disintegration of the Soviet empire and the societal system in general. The population growth rate has been often turned from a demographic phenomenon into a political one. The issue of "social price of the reforms" in the form of direct "population loss" leaves neither TV screens nor the pages of newspapers of any political preference. The bigger the country, the deeper the concern seems to be. Also, researchers, sociologists and economists more frequently, demographers less frequently, have engaged in counting the numbers of "unborn babies" as well as "premature deaths" as a result of the inappropriate course of the socio-economic and political reforms. Following Alexander Zinovev, some authors have named the current stage of reforms "catastroika" (Ellman, 1994). In the last five years in the post-Soviet political environment, the general population trends are hardly ever called anything else but "population crisis" or even "demographic catastrophe". The sociologists point to the fact that alarm on demographic trends has developed to an extent not witnessed earlier in the public consciousness; and this has been facilitated by rather unprofessional commentaries on the dynamics of population indicators in the mass media. People are concerned with low fertility and high mortality as well as issues related to various ethnic groups, family and household types etc.

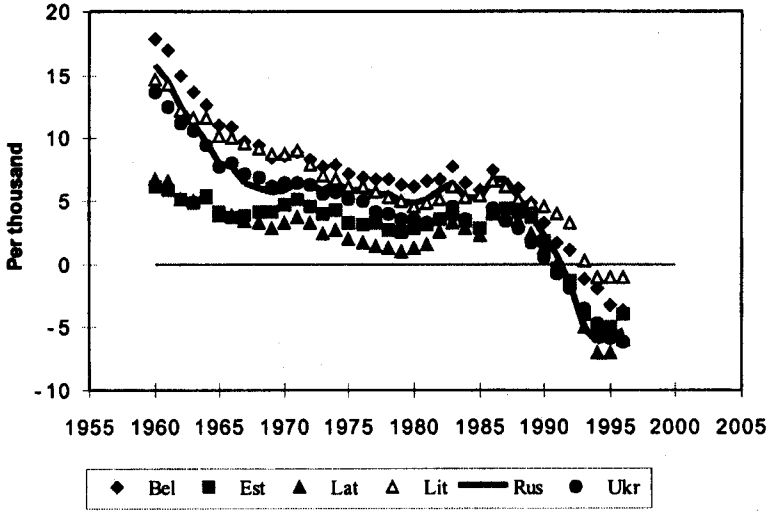
Is there any solid ground to expect that social and economic reforms can really result in a turnabout of demographic trends, and in particular, initiate depopulation as a new phenomenon for most of the countries under discussion. In previous periods depopulation of that magnitude has been experienced only during wars, famine or epidemics. For journalists, policy makers and many other non-demographers this rather new population situation seems to be quite naturally linked to the societal transformation, which is also unique in its kind. Easily understandable to the wide audience, the proposed linkage serves as a good instrument for populist policies with various purposes. Symptomatically such linkage is more typical of the three Slavic countries than of the Baltics, Estonia and Latvia in particular. Having experienced severe social transformations earlier in this last century, with more intensive and prolonged demographic implications than in the current societal transition, the causation of demographic change is probably not so commonly underlined in these societies.

The linkage of recent depopulation as well as the discontinuity of demographic trends, with the ongoing social and political reforms, should raise scepticism. Actually, there is no need to be a demographer to look for causes in the demographic sphere rather than in the socio-economic environment. Furthermore, relevant data are better available and the demographic information has proved to be much more reliable and comparable in time than are economic and social indicators, particularly in transition periods. It should be also noted that no principal changes in vital registration have taken place in the countries under consideration, making the comparison easier also in space (Anderson, Katus, Silver, 1994). Naturally, for a demographer it is almost habitual to look at the depopulation stage as a specific result of long-term population development which, *inter alia*, should not be linked to current political and social changes. What needs to be analysed and explained is (*a*) why population development

goes through the principal changes specifically in the 1990s, and (*b*) whether there is any specific outcome because of the temporal coincidence of this process with societal transformation at the same time.

Already the first glance at the population growth rates force us to admit that the trend towards the reduction of natural increase has been present for at least three decades (figure I). Concerning Estonia and Latvia, the actual depopulation of native population was already a reality in the 1970s and only the direct as well as the indirect impact of immigration avoided a decline in total population. In Slavic republics and in Lithuania the population was characterized by continuous increase; however, the natural growth was supported mainly by the relatively young age structure, while fertility had fallen slightly under the replacement level on an average for the period. Such a situation would not have secured positive population growth in the long run. The Soviet population projections foresaw the inescapability of depopulation in all the countries under discussion with the most probable onset of it at the turn of the twentieth and twenty-first centuries. For Latvia, Estonia and Ukraine the change in population growth was expected earlier than for Lithuania and Belarus; the Russian Federation was characterized by large regional differences in the process. In

Figure I. Rate of natural increase: Russia and European newly independent States, 1960-1995



Source: (1997) The Demographic Yearbook of Russia 1997. Moscow: Goskomstat of Russia, p. 51; (1998) Naselenie SSSR 1987. Moscow: Goskomstat of the USSR, pp. 127-143; (1990) Demographicheskii Ezhegodnik SSR 1990. Moscow: Goskomstat of the USSR, pp. 99-106; Recent Demographic Developments in Europe. Council of Europe. Strasbourg, 1995.

view of this, it may be indisputably concluded that the emerging depopulation in all these countries was an expected phenomenon for the demographers. It is also noteworthy that the convergence trend in population growth accelerated in the named countries between the 1970s and 1990s as the timing differences from the demographic transition period gradually started to diminish in importance.

The problems and potential implications of under-replacement fertility and slowing population growth in the Soviet Union were regularly discussed since the 1970-1980s in scientific conferences as well as beyond the scholarly community. These activities were supported by the Communist Party and governmental leaders to whom pronatalist ideology was a long-established tradition. The totalitarian State regarded quantitative growth of human resources, particularly in the labour force, as a specific means to escape economic problems as well as a source of continued expansion of military and geopolitical power. Therefore, all the last congresses of the Soviet Communist Party addressed the issue of "effective population policy" which was expected to improve the demographic situation. As a result, in the beginning of the 1980s an extensive pronatalist policy was introduced, followed by the strict anti-alcoholic campaign in the middle of the decade.

Those attempts could be evaluated from the modern perspective as a source of additional destabilization of demographic development in most of the countries under observation. First, the 1980s were characterized by the increase in fertility. Together with the impact of beneficial female age structure the number of births increased by 7 per cent in Ukraine, by 11-13 per cent in Russia, Estonia and Belarus, 15 per cent in Lithuania and 19 per cent in Latvia. There have been intensive discussions whether the fertility increase was due to the pronatalist policy measures or the fertility wave just coincided with the introduction of demographic policy; however, the increase of period fertility indices were rather substantial in all the countries. Also, not having its proof of causal linkage, mortality demonstrated a sharp decrease, coinciding at the time with the anti-alcoholic campaign, particularly in the Russian Federation (Shkolnikov *et al.*, 1996) and the other two Slavic states. Within one year (1986) the number of deaths decreased by 7-9 per cent in European newly independent States as compared to the previous year. In such a course of events, the growth trend of population was supported at both ends.

Looking back, there is every reason to confirm that the social policy of the 1980s did not balance population development but changed the schedule of demographic events at the cohort level. Particularly, the timing of births was brought to younger ages, and birth intervals were shortened. Also, the decrease in mortality proved to be a rather short-term trend without a connection to real improvement in the state of population health. Demographic behaviour did not change principally under the social policy, and theoretically, it could not change within such a short time interval. As a result, the referred social policy measures of the 1980s increased the 1990s advance of depopulation by intensifying the compensation effect with negative signs in all countries.

It could be concluded that negative population growth of the 1990s in all six countries was a result of long-term population trends, aggravated by

shortsighted policy intervention in the 1980s. In this perspective the problems induced by social and economical transition do not appear to be as relevant in changing population trends as they are often described. Those commentators who associate "population crisis" exclusively with the economic crisis are deceived by the inability to distinguish between long-term and medium-term population trends. Social and economic transition has doubtless left its impact on the demographic processes, which will be discussed partly in the following sections, but surely it does not appear to be a major cause behind the depopulation. Moreover, whatever the impact of the current societal transition, it can be adequately demonstrated only in the long run rather than immediately, during the transition itself.

MARRIAGE AND FERTILITY: EASTERN OR WESTERN PATTERN

Historical background

In the Russian Empire the timing of demographic transition, and particularly fertility decline, was largely differentiated. From a geographical viewpoint the transition began in the north-west and spread towards the south-eastern regions of the Empire. In Estonia and north-western Latvia the parity-specific fertility decline started in the middle of the nineteenth century. This was up to 40 years earlier than in Lithuania, Ukraine and Belarus. In Russia, where the decrease started at the turn of the last century, six sub-regions could be outlined (Katus, 1994; Zakharov, 1994). The results of the Princeton Project point at the heterogeneity of the Russian Empire in fertility transition, and each of its specific regions had more common features with other nations and countries outside the Empire than between themselves (Coale, Anderson, Härm, 1979; Coale, Watkins, 1986). Ansley Coale defines Estonia and Latvia as part of a Scandinavian pattern of fertility transition, while the development in Belarus, Lithuania and Ukraine, as well as the European part of Russia, is linked much more to Central Europe (Coale, 1994).

Another differentiating feature between the countries under observation goes even deeper into history, and probably also explains to a large extent later differences in the timing of fertility transition. The considered phenomenon is the European marriage pattern (Hajnal, 1965; Sardon, 1991a). The Baltic countries appeared to be on the Western side of the Hajnal line with their relatively old age at first marriage and high proportion of never-married females in a cohort. This was accompanied with somewhat lower infant and child mortality already before the demographic transition. Russia, Ukraine and, partly, Belarus were characterized by a universe as well as rather early age at first marriage, i.e., by the Eastern pattern. Taking into account the different marriage patterns it is obvious that the completed fertility varied essentially between the Baltic and Slavic countries before the demographic transition, despite the absence of family planning practice in all the countries at that time. Russia experienced the highest fertility (seven or more children per woman), and Estonia the lowest (less than five children per woman). It is interesting to point out the somewhat intermediate position of Lithuania among the six countries. Judging the course of fertility transition, Lithuania's closer connections with the Slavic countries

are apparent; however, the spread of the European marriage pattern incorporates Lithuania into "Baltoscandia". Despite the fact that the European marriage pattern was developed later in Lithuania, the phenomenon could be clearly determined together with its specific impact on fertility levels. Fertility development in Lithuania turned closer to Estonia and Latvia during the first half of the twentieth century (Katus, 1994; Stankuniene, 1989).

Different marriage patterns and the earlier beginning of the demographic transition in the Baltic countries facilitated variation among the six countries of the former Russian Empire, reaching its peak at the end of the nineteenth and the first decades of the twentieth century. Later on the differences started to decrease (Vichnevski and Zakharov, 1995; Zvidriņš, 1995). Despite the dissimilar political and economic systems in the Baltic and Slavic countries in 1918-1940, differences in fertility development rather diminished than increased. The impact of general regularities of the demographic transition, thus, proved to be stronger than the diversity in ideological and economic regimes. After the Second World War, the Baltic countries were incorporated into the Soviet Union, but particularly the completion of fertility transition in the Slavic countries contributed to the growing convergence of fertility and marriage patterns between the six countries which obtained characteristics of a dominant trend. Likewise the same trend elsewhere in Europe, also the Baltic countries were characterized by gradual disappearance of the European marriage type: the mean age at first marriage experienced a long-term decrease, followed by the same trend in fertility timing. The universal disappearance of the European family pattern certainly gave its support to the convergence tendencies between the Baltic and Slavic countries. Additionally, the immigration to the Baltic countries, particularly intensive in the case of Estonia and Latvia should also be mentioned as a feature favouring the convergence of marriage and fertility developments. By the mid-1960s, the transition to low fertility was completed in all of the referred countries and the development of post-transitional fertility decreased the variations in levels of fertility to the minimum compared to the preceding 100 or 200 years.

Post-transitional fertility and inadequate social policy

By the beginning of the 1980s, differences in fertility level between the concerned countries became minimal, with the variance of TFR within the range of 1.85-2.05. The following decade demonstrated general stabilization of levels, however, with a certain upward trend. The discussed period was characterized by maximum homogeneity among the six countries. On the one hand, growing homogeneity was anticipated as the different timing of fertility transition had become history and the post-transitional fertility development had continued for at least 20 years in all countries. For this reason, the convergence tendency has united not only the observed six countries but most of the European nations and other developed nations as well (tables 1 and 2, figure II). On the other hand, the similarity of fertility development among the six countries has not been based only upon the universal trends in Europe at the time but has been strengthened, in addition, by the shared deviation from those trends (Zakharov and Ivanova, 1996). Some of the common European developments

concerning marriage and fertility, summarized into the conception of the second demographic transition (Cliquet, 1991; Lesthaeghe, 1992; Van de Kaa, 1980), have not occurred in the countries under observation. At the same time, other developments of the same character could be followed also in all or in some of these countries making unfeasible a simple explanation about the non-existence of the second demographic transition in the former USSR.

TABLE 1. TOTAL PERIOD FERTILITY RATE IN RUSSIA AND SELECTED DEVELOPED COUNTRIES

	1950	*1960*	*1970*	*1980*	*1985*	*1990*	*1995*
Russia	**2.79**	**2.52**	**1.99**	**1.89**	**2.05**	**1.89**	**1.34**
Australia	3.06	3.45	2.86	1.92	1.89	1.91	1.85*
Austria	2.09	2.69	2.29	1.65	1.47	1.45	1.40
Belarus	2.97	2.67	2.31	2.03	2.09	1.91	1.39
Belgium	2.35	2.56	2.25	1.69	1.51	1.62	1.55
Bulgaria	2.94	2.32	2.17	2.05	1.95	1.73	1.24
Canada	3.37	3.81	2.26	1.75	1.67	1.71	1.66*
Czech Republic	2.83	2.09	1.93	2.07	1.95	1.89	1.28
Denmark	2.57	2.57	1.95	1.55	1.45	1.67	1.80
England and Wales	2.18	2.68	2.40	1.88	1.78	1.84	1.79
Estonia	2.41	1.96	2.16	2.02	2.11	2.04	1.32
Finland	3.16	2.71	1.83	1.63	1.64	1.78	1.81
France	2.93	2.73	2.47	1.95	1.81	1.78	1.70
Federal Republic of Germany (west)	2.10	2.37	2.01	1.45	1.28	1.45	1.34
Greece	2.60	2.28	2.34	2.23	1.68	1.43	1.40
Hungary	2.60	2.02	1.98	1.92	1.83	1.84	1.57
Italy	2.49	2.41	2.43	1.69	1.41	1.29	1.17
Japan	3.65	2.00	2.13	1.74	1.74	1.54	1.50*
Latvia	2.27	1.94	1.96	1.86	2.08	2.02	1.25
Lithuania	3.23	2.56	2.37	1.99	2.11	2.03	1.49
Netherlands	3.10	3.12	2.57	1.60	1.51	1.62	1.53
Poland	3.71	2.98	2.23	2.28	2.33	2.04	1.61
Portugal	3.08	3.01	2.76	2.19	1.74	1.51	1.41
Spain	2.48	2.86	2.85	2.22	1.63	1.33	1.24
Sweden	2.28	2.20	1.92	1.68	1.73	2.13	1.74
Switzerland	2.40	2.44	2.10	1.55	1.52	1.59	1.47
United States of America	3.03	3.61	2.48	1.84	1.84	2.10	2.01
Ukraine	2.53	2.23	2.07	1.95	2.06	1.85	1.38

*1994.

Source: Database of Centre for Demography and Human Ecology, Moscow (CDHE) (updated in 1997).

TABLE 2. COMPLETED FERTILITY IN RUSSIA AND SELECTED EUROPEAN COUNTRIES

Birth cohort	***Russia***	*England and Wales*	*France*	*Federal Republic of Germany*	*Italy*	*Spain*	*Switzerland*	*Sweden*
1909-1913	**2.95**	1.82	2.29	2.06	2.69	2.84	2.05	1.90
1914-1918	**2.59**	1.99	2.41	2.12	2.52	2.65	2.19	2.00
1919-1923	**2.28**	2.05	2.51	2.05	2.35	2.55	2.22	2.04
1924-1929	**2.22**	2.20	2.61	2.08	2.28	2.53	2.21	2.08
1930-1934	**2.17**	2.37	2.61	2.20	2.31	2.63	2.19	2.14
1935-1939	**2.04**	2.39	2.51	2.10	2.23	2.65	2.16	2.10
1940-1944	**1.93**	2.28	2.33	1.86	2.12	2.53	1.93	2.01
1945-1949	**1.84**	2.11	2.15	1.75	1.99	2.37	1.82	1.98
1950-1954*	**1.90**	2.01	2.10	1.63	1.85	2.15	1.73	1.97
1955-1959*	**1.87**	1.89	1.94	1.60	1.75	1.83	1.69	1.90

*Estimate taking into account the most recent period rates for ages over 35.

Source: J.-P. Sardon (1991b), pp. 28-29; Evolution démographique récente en Europe. Council of Europe (1996), pp. 51-52; for Russia, author's estimates based on the 1979 and 1989 censuses and annual birth statistics by single-year age group of mother and birth order.

The mixture of universal features of post-transitional fertility together with the specific characteristics of the six countries could be shortly summarized as follows.

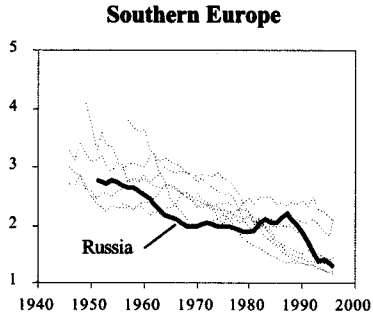
First, relatively early marriage with closely linked reproductive behaviour: female mean age at first marriage was around 22 years, mean age at first birth only slightly higher. This feature has been a result of long-term juvenation of marriage and fertility in the Baltic countries, and stability or ageing (if taking into account a longer period) in the Slavic countries. Nevertheless, in the 1980s homogeneity between the six countries has been high without the evidence of an emerging new ageing trend. Vice versa, in the Slavic countries the additional juvenation could be followed pushing the period fertility indices higher compared to the corresponding cohort indicators. The proportion of never-married women in cohorts has remained at a very low level. No noticeable changes in the universe marriage pattern have occurred (table 3).

TABLE 3. PROPORTION OF NEVER-MARRIED WOMEN UP TO AGE 50 AND OLDER: RUSSIA, SELECTED BIRTH COHORTS

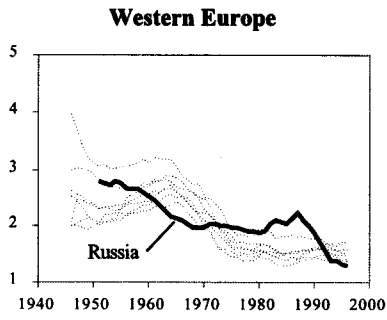
Birth cohort	*Percentage**	*Birth cohort*	*Percentage**
1909 and earlier	3.3	1930-1934	4.0
1910-1914	4.2	1935-1939	3.3
1915-1919	5.2	1940-1944	3.5
1920-1924	6.5	1945-1949	4.5
1925-1929	5.3	1950-1954	4.9

*The lowest estimates derived from the censuses in 1979 and 1989, and the micro census in 1994.

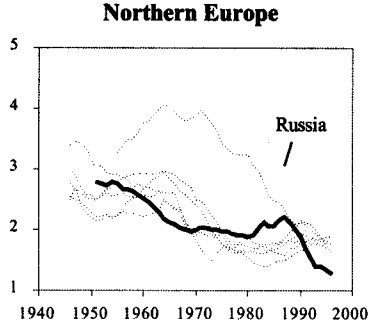
Figure II. Post-war trends in total period fertility rate against the background of different groups of developed countries: Russia, 1946-1995



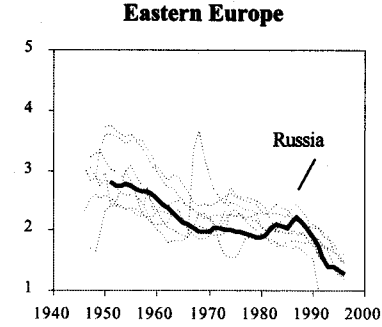
2.1. Cyprus, Greece, Italy, Malta, Portugal, Spain



2.2. Austria, Belgium, France, FRG, Luxemburg, Netherlands, Switzerland



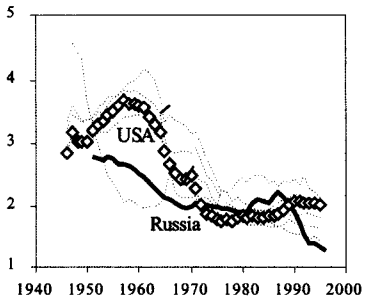
2.3. Denmark, England & Wales, Ireland, Finland, Norway, Sweden



2.4. Bulgaria, Czech Rep., Ex-GDR, Hungary Poland, Romania, Slovak Rep.

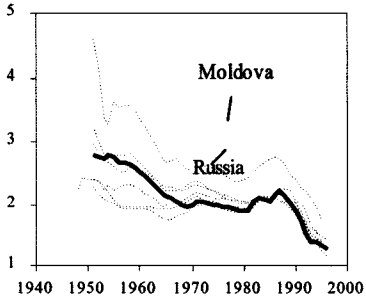
Figure II *(continued)*

Non-European industrialized countries



2.5. Australia, Canada, Japan, New Zealand, U.S.A.

Ex-USSR European Republics



2.6. Belarus, Estonia, Latvia, Lithuania, Moldova, Ukraine

Source: Database of the Centre for Demography and Human Ecology (1998).

Second, the desirable number of children has been rather stable at the level of somewhat higher than 2.0 and the expected number has been somewhat less. Actual implementation of individual and family desires has been approximately 90 per cent of the level on an average, resulting in relatively high fertility in the European context. On an average the fertility level was only slightly under the replacement level and even higher in some European countries during the specific time intervals, particularly at the end of the 1980s. Distribution of females by the number of ever-born children was characterized by growing concentration, around two children; the proportion of women having given birth to one child or four and more was decreasing (table 4). The proportion of childless women has remained low at the level of approximately 7-8 per cent of the birth cohort and 3-4 per cent of the first marriage cohort (tables 5 and 6), explained mostly by infertility rather than by voluntary childlessness. At the same time the proportion of women with three children, and particularly the trend of this proportion, has varied between the discussed countries. The study of the parity-progression ratios, as well as probability of childbearing by parity in cohorts, shows that fluctuations in TFR in the 1970s to 1980s were determined chiefly by variations in the probability of giving birth to a second child, which was especially clearly demonstrated during the active implementation of the pronatalist policy. The same picture, for example, could be seen in the former German Democratic Republic (Barkalov and Dorbritz, 1996).

TABLE 4. PERCEPTION OF IDEAL FAMILY SIZE ACCORDING TO NATIONALLY REPRESENTATIVE SAMPLE SURVEYS: RUSSIA, 1969 AND 1996
(Percentage distribution of answers)

Number of children in a family	*1969**	*1996***
No children	1	4
One child	2	14
Two children	45	54
Three children	38	17
Four children and more	12	5
It is difficult to say	2	6
Total	100	100

*Survey conducted by the Department of Demography, Institute for Statistics, USSR Central Statistical Office. *Source*: V. A. Belova (1975) Chislo detei v sem'e (Number of children in a family). Moscow: Finansi i Statistika, pp. 84, 93.

**Survey conducted by the Russian Centre for Public Opinion and Market Research (VCIOM).

Source: *Human Development Report, 1997.* Russian Federation. United Nations Development Programme (1997), p. 30.

TABLE 5. DISTRIBUTION OF WOMEN BY NUMBER OF CHILDREN EVER BORN ALIVE BY AGE 50: RUSSIA, DIFFERENT BIRTH COHORTS
(Percentage)

Parity	*Birth cohort*					
	1905	*1915*	*1925*	*1935*	*1945*	*1955**
0	10.5	11.9	13.2	9.1	8.5	7.2
1	13.4	19.0	22.8	24.1	30.2	26.4
2	16.3	22.7	29.6	39.0	43.3	48.1
3	15.0	16.8	16.2	14.8	11.1	13.2
4	11.8	10.6	7.8	5.4	3.1	2.9
5	9.8	7.3	4.6	3.5	1.8	1.3
6	6.6	4.3	2.4	1.6	0.7	0.5
7 and over	16.0	6.9	3.0	2.1	0.4	0.0
Unknown	0.6	0.5	0.4	0.4	0.4	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Average number of births	3.5	2.7	2.2	2.1	1.8	1.9

*Estimate. Females from the 1955 cohort gave birth, on average, to 1.87 children by age 38.

Source: Author's calculation based on the 1979 and 1989 censuses and annual birth statistics by single-year age group of mother and birth order.

TABLE 6. DISTRIBUTION OF WOMEN BY NUMBER OF CHILDREN EVER BORN: RUSSIA, DIFFERENT MARRIAGE COHORTS*

First marriage cohort	*Percentage of women giving birth to a specified number of children*					*Mean number*
	0	*1*	*2*	*3*	*4 and more*	
1945-1949	5.3	15.4	35.2	21.6	22.5	2.658
1950-1954	4.8	18.2	42.2	19.2	15.6	2.384
1955-1959	4.1	20.4	46.9	17.0	11.6	2.234
1960-1964	4.3	24.9	50.4	13.0	7.4	2.019
1965-1969	4.0	25.8	52.4	12.0	5.8	1.957
1970-1974	3.3	23.9	54.5	13.2	5.1	1.976
1975-1979	3.4	20.9	56.9	14.1	4.7	1.991
1980-1984	4.4	26.3	55.6	10.8	2.9	1.830

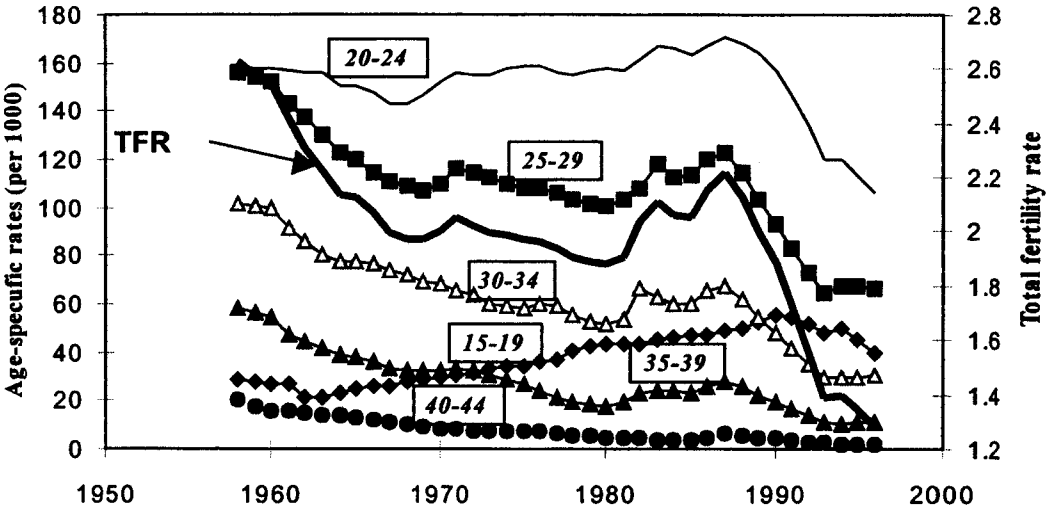
*For women staying in a first marriage at least 10 years.
Source: Microcensus 1994.

Third, the completion of family formation has been relatively rapid and has taken place early in a woman's life cycle. For example, up to 60 per cent of female cohorts completed their fertility by 28 years of age. There has been an exceptionally short interval between the beginning of marriage and birth of the first child, less than one year on an average. In Slavic countries and in Lithuania it was common to expect the pregnancy immediately after the marriage, and a growing proportion of marriages have been initiated by the pregnancy. In Latvia and particularly in Estonia, cohabitation as a form for the first union has reached levels comparable with the Scandinavian countries and an increasing number of births were occurring outside marriage not only here but in all the countries under consideration. For those having marriage before a birth, the average protogenetic interval decreased up to six months, stressing the key role of pregnancy as the primary event in new family formation apart from traditional marriage. In all six countries, birth intervals between the first and second as well as the second and the third birth were also relatively short, moving the end of reproductive activities into younger ages of the mother. Probably, the extremely young age at completed fertility could partly explain the unusual coexistence of relatively high fertility and very high divorce rate in the countries under observation.

Fourth, family planning was carried out by rather old-fashioned methods, with a primary means to avoid unwanted birth being an induced abortion. As a result the total abortion rate counted as high as around 2.5 and exceeded the fertility rate. Correspondingly, the use of modern contraceptive methods, pills, IUD and even condoms, has been low in the European context. Extremely low use of any means of contraception is characteristic of the first sexual intercourse. On one hand this was a result of poor and partly related family planning education; on the other hand, the availability of modern contraceptives was more than deficient. A very high rate of unwanted pregnancies was accompanied by high teenage pregnancy level and corresponding teenage fertility. The contribution of mothers aged 15-19 in total fertility rate varied from 7 per cent in Lithuania up to 12 per cent in the Russian Federation and Ukraine.

In order to understand the specific nature of the post-transitional fertility and marriage development uniting the six countries one should also consider the pronatalist family policies introduced in the early 1980s in the former Soviet Union. The impact of this policy becomes even more important when interpreting the sharp fertility decrease in the 1990s (figure III). The family policy from 1981 was based on privileges for mothers with small children and for families with three or more children. In the opinion of the author, the most important measure of these policies was the partly paid maternity leave: one year initially, extended to three years later, and particularly the dwelling policy. Those as well as other means maintained the juvenation trend of marriage and first birth. Accordingly, the cohort marriage and fertility schedules were pushed towards accelerated family formation. The female mean age at first birth, mean age at first marriage, and the protogenetic and intergenetic intervals reached very low levels, particularly in the Slavic countries (table 7). The probability of second births galloped up, which, nevertheless, was not the indicator of change in the desired completed fertility but just a result of compressed timing of births. The fertility schedule in the six analysed countries appeared relatively young in the European context even before the beginning of the mentioned family policy. This policy seems to have had its impact in avoiding the onset of ageing tendencies in marriage and fertility common to Europe at that time. In some countries, like Estonia, rather weak fertility ageing could be traced in the native-born population; however, it was totally wiped out in general population by the definite juvenation trend among the population of immigrant background. It is obvious that timing shifts similar to those witnessed in the 1980s have their limits; compensatory decline in number of births and decrease in all period marriage and fertility indicators are naturally to be expected some time later. Specifically, the end of the 1980s and beginning of the 1990s happened to be a period of that kind. Incidentally, it coincided with the start of societal transition having an additional effect on the ageing tendencies in marriage and fertility. It could be concluded that the Soviet family policy in the 1980s had an inappropriate timing, and if having a real impact on population development, it has only strengthened the demographic waves.

Figure III. Age-specific fertility rates and TFR in Russia: 1958-1996



Source: (1997) The Demographic Yearbook of Russia. Moscow: Goskomstat of Russia, p. 215; (1996b) S. V. Zakharov and E. I. Ivanova, p. 363.

TABLE 7. CERTAIN INDICATORS OF FERTILITY AND NUPTIALITY FOR FEMALES: RUSSIA AND SELECTED COUNTRIES, 1993-1994

	TFR	Contribution to TFR (percentage) 15-19	30+	Mean age at: 1st marriage	1st birth	Extra marital births (percentage)
Russia	1.40	17.8	15.2	22.4	22.4	19.6
Austria	1.45	6.5	30.0	26.3	25.9	26.8
Belgium	1.66*	3.5*	30.8*	28.3	26.8*	13.6**
Belarus	1.50	14.1	15.4	21.7	22.4	12.1
Denmark	1.81	2.4	41.0	29.2	27.3	46.9
Estonia	1.37	14.1	19.1	23.7	22.9*	40.9
Finland	1.85	2.7	41.4	27.3	27.4	31.3
France	1.66	2.5	40.6	27.0	27.6	36.0
Federal Republic of Germany (west)	1.35	3.9	42.0	27.2	27.9	12.4
Greece	1.36	5.3	33.6	25.1	26.1	2.9
Latvia	1.39	12.1	20.3	22.5	22.9	26.4
Lithuania	1.54	13.3	19.3	22.2	22.7	10.8
Netherlands	1.57	1.7	53.0	26.9	28.3	14.3
Portugal	1.44	7.3	33.9	24.8	25.4	17.8
Spain	1.21	3.7	45.4	26.5	27.2**	10.8
Sweden	1.88	2.5	41.2	28.3	27.0	51.6
United States of America	2.05	14.6	29.5	24.3	22.9	31.0
United States of America (white)	1.98	12.9	30.6	...	23.2	23.6
United Kingdom	1.74	8.2	37.3	26.2	26.5	32.0
Ukraine	1.46	19.3	14.8	...	...	12.8

* 1991.
** 1992.

Source: Evolution démographique récente en Europe. Council of Europe (1996); United States National Centre for Health Statistics, *Monthly Vital Statistics Report*, vol. 44, No. 3 (Supplement), 21 September 1995; Database of Centre for Demography and Human Ecology, Moscow (CDHE).

Fertility crisis or second demographic transition

Sharp fertility decline in Eastern Europe, reaching lower levels than the average in Western countries, is often considered as a crisis linked to the spread of poverty and hopelessness which accompanies societal transitions. It is usually thought that if there had been no economical crisis and social change, there would also not have been principal shifts in fertility. Furthermore, if the economic crisis can be brought under control and a more reasonable social policy implemented, fertility would likely return to its former level.

Discussion on this matter started with debates on the exceptionally low fertility level achieved in the eastern provinces of Germany. First, explanation of the situation was by common crisis approach. However, it is proved today that even in the case of the eastern provinces of Germany, it is primarily not

fertility crisis but a deep structural transformation in the pattern of reproductive behaviour (Conrad, Lehner, Werner, 1996). As low a total fertility rate as 0.8 does not mean that cohort total fertility is less than 1.0. Eastern Germany really demonstrates an exceptionally abrupt transition to the modern Western fertility pattern, characterized by late marriage, postponement of childbearing and extended intergenetic intervals. Very rapid fertility ageing, incomparable with similar tendencies in Western countries considered to be a part of the second demographic transition, has led period indicators to drop to extremely low levels. Fertility is expected to increase in these German provinces in the near future, or it has already started according to the data of 1995, and probably will approach the levels characteristic of the western part of the country (TFR 1.3-1.4). Nevertheless, one can be quite sure that the pattern of fertility timing in eastern Germany will not be like the one witnessed before the societal transition.

The process similar to the eastern provinces of Germany is going on in a more moderate form elsewhere in Eastern Europe, including our six countries under consideration. It would be reasonable to discard the crisis approach to fertility and marriage changes and study more deeply the impact of the timing transition on current and future development. Transformation of the fertility schedule in the Western countries started with the decrease in fertility intensity in younger ages, followed by the increase in the middle and older age groups. According to the recent data the same process could be observed in the referred countries.

No doubt changes in nuptial behaviour of the population of the European countries of the newly independent States have started to occur. The postponement of marriage among people over 20 years of age is becoming a common practice accompanied by increasing cohabition. Those who did not get married in early ages tend to do so less frequently at advanced ages as compared with the past. As the most recent surveys conducted in Russia, Lithuania, and Estonia revealed, the accelerated family formation pattern has been broken (Katus, Puur and Sakkeus, 1995; Ivanova, 1996; Stankuniene, 1997; Zvidrinš, 1997). Today, the persistent low mean age at first marriage in these countries can be exhaustively explained by structural factors: marriages of those who continue to follow the old tradition in sexual and reproductive behaviour, associated closely with early marriage, prevail in overall marriages contracted yearly.

Also, accompanying the growing availability of modern contraceptives, the number of abortions is decreasing, particularly in young age groups despite the continuous juvenation of sexual behaviour. Pre-marital sexual relations, including stable cohabitation, do not lead to unplanned pregnancies to such an extent as earlier. The difference between two social groups seems to become more evident: (*a*) modern family planners able, *inter alia*, to adjust their demographic behaviour to societal changes; and (*b*) followers of traditional stereotypes in which sexual, matrimonial and reproductive behaviour are hardly separable. In the second group the simple practice of fertility limitation seems to prevail while the individually optimized timing pattern of pregnancies without the necessary decline in completed fertility is dominant among the first group. In other

words, when talking about the marriage and fertility crisis in Eastern Europe, only the crisis in the previous timing pattern is of real sense.

CONCLUSION

There is every reason to suggest that it is not simply a demographic crisis, as frequently thought by many observers that is affecting Russia and its neighbours in Eastern Europe. In my view, this large region has entered the period of long-term fundamental changes which started in the West 20-30 years earlier and are still going on. These changes can be defined as either a "second demographic transition", or a "new stage in demographic modernization" of the society, or "westernization" of demographic behaviour, this depending on an individual's point of view or one's beliefs with regard to the given processes.

Current socio-economic changes occurring in Eastern Europe appear to stimulate and accelerate changes in the population area which ripened long ago and could even have been detected by refined methods of analysis but were blocked by State paternalism and mass traditionalism of pre-reforming Soviet society. Assuming the socio-economic crisis is overcome in Russia and Eastern Europe, fertility and nuptiality are not likely to return to the previous timing pattern.

The commonly held view of today's changes in fertility as a crisis should be in my opinion seen as one-sided and insufficiently thought out. Moreover such an approach sharply reduces the range of potential projection scenarios, as the traditional division of the world into West and East is preserved for an indefinitely long period of time in the future, this being inconsistent with the visible direction of current societal change toward convergence.

The population projection estimates we produced in the last three years (*Naselenie Rossii*, 1995, 1996; Zakharov and Ivanova, 1996a) are based on the assumption of more or less rapid spread of the second demographic transition in Russia resulting in radical shifts in age and timing pattern of nuptiality and fertility that would bring the advanced countries of the West and East together rather than apart. It should be mentioned that the given projection hypothesis was adopted as basic by the Center for Demography and Human Ecology in 1993-1994 (figure IV). As the evidence of the last years shows we were not wrong with regard to our projection strategy. At least the projected rates of fertility for 1994-1996 with a 1993-year base are close to the data officially reported by the Russian Federation Committee on Statistics (Goskomstat) for these years. At the same time the available projections made by other scholars including those by Goskomstat which to certain extent were based on the crisis-styled view have proved unsuccessful even in a short-term perspective.

Figure IV. Age-specific fertility rates in Russia: actual, 1992 and projected, 1993-2015

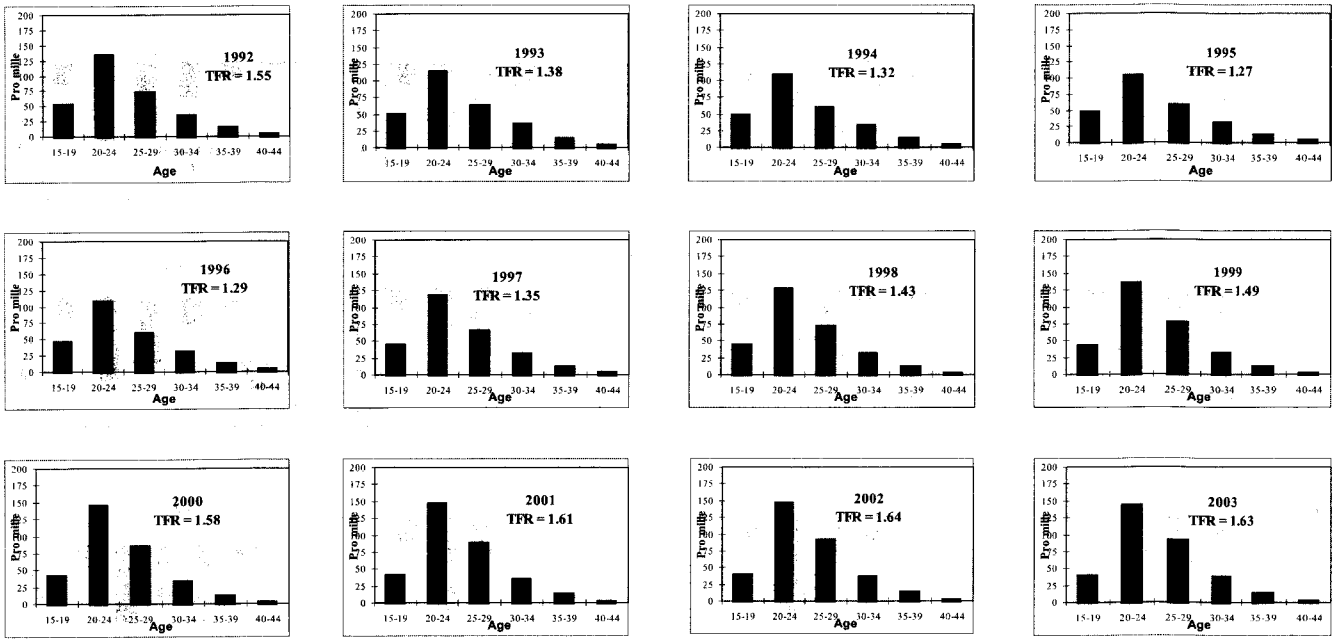
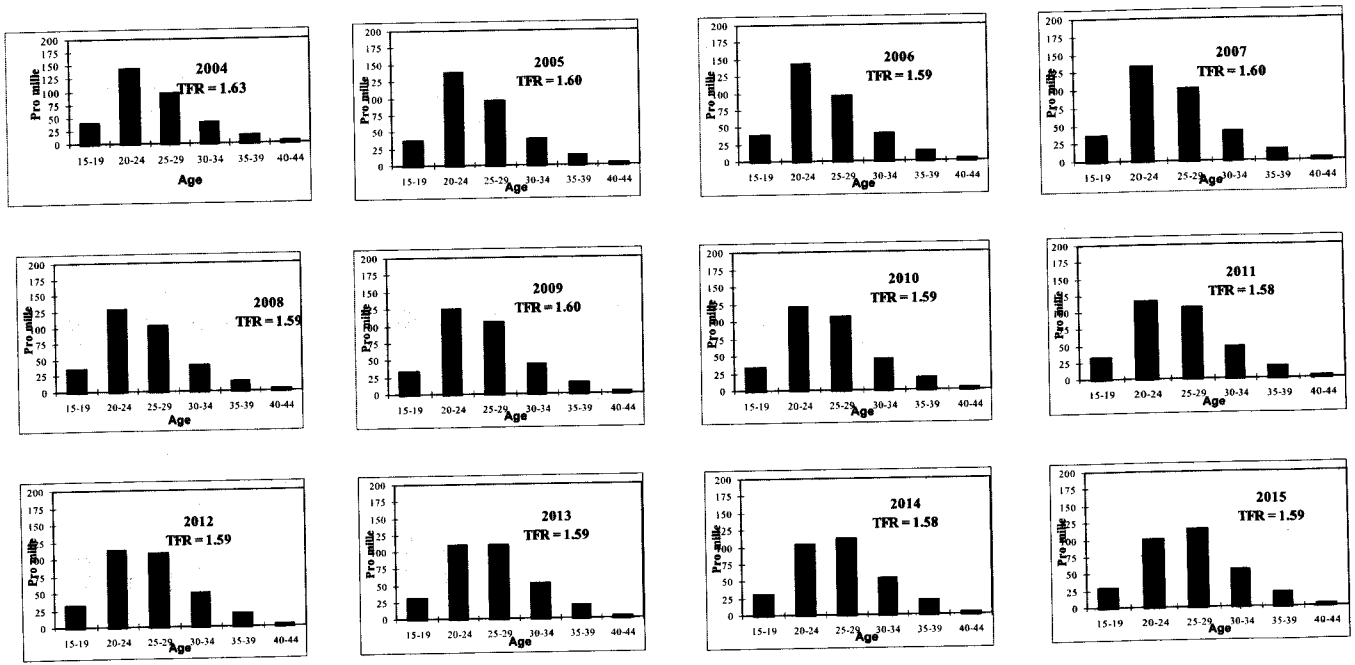


Figure IV *(continued)*



Source: Medium variant of the Centre for Demography and Human Ecology Projection (1996a), S. V. Zakharov and E. I. Ivanova, p. 82.

ANNEX TABLES

TABLE A.1. RATE OF NATURAL INCREASE: EUROPEAN USSR SUCCESSOR STATES, 1960-1995

Year	*Belarus*	*Estonia*	*Latvia*	*Lithuania*	*Russia*	*Ukraine*
1960	17.8	6.1	6.7	14.7	15.8	13.6
1961	16.9	5.9	6.6	14.3	14.5	12.5
1962	14.9	5.2	5.2	12.2	12.5	11.2
1963	13.7	4.8	5.0	11.7	11.2	10.6
1964	12.7	5.4	5.3	11.6	9.7	9.5
1965	11.1	4.1	3.8	10.2	8.1	7.7
1966	10.9	3.7	3.8	10.1	7.7	8.1
1967	9.8	3.8	3.4	9.6	6.5	7.1
1968	9.4	4.2	3.2	9.2	6.0	6.9
1969	8.5	4.2	2.9	8.7	5.7	6.1
1970	8.6	4.7	3.3	8.7	5.9	6.4
1971	8.9	5.1	3.7	9.1	6.4	6.5
1972	8.3	4.5	3.2	7.9	6.3	6.3
1973	7.7	4.0	2.4	7.0	5.9	5.6
1974	7.9	4.3	2.7	6.8	6.4	5.7
1975	7.1	3.3	2.0	6.2	5.9	5.1
1976	6.9	3.1	1.7	6.1	5.9	5.0
1977	6.8	3.3	1.4	5.7	5.6	4.2
1978	6.8	2.7	1.2	5.3	5.6	4.0
1979	6.3	2.6	1.0	5.0	5.0	3.6
1980	6.1	2.8	1.3	4.6	4.9	3.5
1981	6.6	3.1	1.5	4.9	5.1	3.3
1982	6.7	3.5	2.5	5.2	5.9	3.5
1983	7.7	4.0	3.2	6.1	6.4	4.5
1984	6.5	3.4	2.9	5.3	5.3	3.6
1985	5.9	2.8	2.2	5.4	5.3	2.9
1986	7.4	4.0	4.1	6.6	6.8	4.4
1987	6.2	4.4	3.8	6.2	6.7	3.4
1988	6.0	4.2	3.4	5.2	5.3	2.8
1989	4.9	3.7	2.4	4.8	3.9	1.7
1990	3.2	1.8	1.2	4.6	2.2	0.6
1991	1.7	-0.3	-0.1	4.0	0.7	-0.8
1992	1.1	-1.4	-1.5	3.2	-1.5	-1.9
1993	-1.2	-4.0	-4.9	0.2	-5.1	-3.5
1994	-1.9	-5.3	-6.9	-0.1	-6.1	-4.7
1995	-3.2	4.9	-6.9	-1.1	-5.7	-5.8

Source: Database of Centre for Demography and Human Ecology, Moscow (CDHE).

TABLE A.2. PERIOD TOTAL FERTILITY RATE: EUROPEAN USSR SUCCESSOR STATES, 1951-1995

Year	*Belarus*	*Estonia*	*Latvia*	*Lithuania*	*Russia*	*Ukraine*
1951	2.97	2.41	2.27	3.23	2.79	2.41
1952	2.82	2.37	2.16	2.99	2.75	2.37
1953	2.70	2.29	2.07	2.78	2.73	2.22
1954	2.74	2.19	2.05	2.68	2.78	2.30
1955	2.78	2.07	2.01	2.62	2.75	2.21
1956	2.79	1.98	1.96	2.53	2.67	2.28
1957	2.80	1.96	1.94	2.53	2.66	2.31
1958	2.81	1.96	1.94	2.60	2.65	2.30
1959	2.74	1.95	1.93	2.59	2.59	2.28
1960	2.67	1.96	1.94	2.56	2.52	2.24
1961	2.59	1.97	1.94	2.53	2.45	2.17
1962	2.50	1.96	1.91	2.45	2.36	2.14
1963	2.40	1.94	1.85	2.35	2.27	2.06
1964	2.31	1.94	1.79	2.28	2.18	1.96
1965	2.27	1.93	1.74	2.23	2.13	1.99
1966	2.29	1.92	1.76	2.22	2.10	2.02
1967	2.26	1.95	1.80	2.23	2.04	2.01
1968	2.22	2.03	1.83	2.24	1.99	1.98
1969	2.26	2.11	1.88	2.30	1.97	2.04
1970	2.31	2.16	1.96	2.37	1.99	2.09
1971	2.31	2.18	2.00	2.38	2.03	2.12
1972	2.28	2.16	2.00	2.33	2.04	2.08
1973	2.25	2.13	1.98	2.25	2.01	2.04
1974	2.21	2.10	1.97	2.21	2.00	2.04
1975	2.17	2.08	1.96	2.19	1.98	2.02
1976	2.12	2.09	1.93	2.17	1.97	1.99
1977	2.08	2.08	1.89	2.13	1.95	1.94
1978	2.06	2.04	1.87	2.09	1.92	1.96
1979	2.05	2.01	1.87	2.04	1.90	1.96
1980	2.03	2.02	1.86	2.03	1.89	1.95
1981	2.02	2.07	1.88	1.98	1.91	1.93
1982	2.05	2.08	1.97	1.99	2.04	1.98
1983	2.11	2.16	2.07	2.04	2.11	2.08
1984	2.11	2.17	2.09	2.09	2.06	2.09
1985	2.09	2.12	2.08	2.10	2.05	2.06
1986	2.09	2.17	2.12	2.14	2.15	2.08
1987	2.03	2.26	2.15	2.16	2.22	2.05
1988	2.04	2.26	2.11	2.09	2.12	2.02
1989	2.03	2.21	2.05	1.99	2.01	1.92
1990	1.91	2.04	2.02	2.03	1.89	1.85
1991	1.80	1.78	1.86	2.01	1.73	1.81
1992	1.75	1.69	1.73	1.90	1.55	1.72
1993	1.61	1.45	1.51	1.67	1.39	1.55
1994	1.57	1.37	1.39	1.54	1.40	1.46
1995	1.39	1.32	1.25	1.49	1.34	1.40

Source: Database of Centre for Demography and Human Ecology, Moscow (CDHE).

TABLE A.3. MEAN AGE AT CHILDBEARING: EUROPEAN USSR SUCCESSOR STATES, 1980-1995

Year	*Belarus*	*Estonia*	*Latvia*	*Lithuania*	*Russia*	*Ukraine*
1980	26.1	25.7	25.3	26.8	25.7	25.4
1981	26.2	25.8	25.3	26.9	25.7	25.4
1982	26.0	25.9	25.4	27.0	25.8	25.4
1983	26.1	26.0	25.5	27.1	25.9	25.5
1984	26.1	25.8	25.6	27.0	25.8	25.4
1985	26.0	25.8	25.5	26.8	25.8	25.4
1986	26.1	25.9	25.7	26.7	26.0	25.5
1987	25.9	25.9	25.8	26.7	26.0	25.4
1988	25.9	25.9	26.0	26.0	25.8	25.3
1989	25.5	25.8	25.8	25.9	25.5	25.1
1990	25.2	25.6	25.4	25.9	25.2	25.0
1991	25.0	25.3	25.3	25.6	25.0	24.7
1992	24.9	25.3	25.2	25.6	24.9	24.6
1993	24.9	25.3	25.1	25.7	24.7	24.5
1994	24.9	25.4	25.5	25.5	24.6	24.5
1995	24.9	25.6	25.5	25.6	24.9	24.4

Source: Recent Demographic Development in Europe (1994), Council of Europe. Strasbourg; Database of Centre for Demography and Human Ecology, Moscow (CDHE).

TABLE A.4. NON-MARITAL BIRTHS: EUROPEAN USSR SUCCESSOR STATES, 1980-1995

Year	*Belarus*	*Estonia*	*Latvia*	*Lithuania*	*Russia*	*Ukraine*
1980	6.4	18.3	12.5	4.6	10.8	8.8
1981	...	18.2	12.9	6.9	11.1	...
1982	...	18.7	13.2	7.3	11.1	...
1983	...	19.5	13.5	7.5	11.0	...
1984	...	20.4	14.3	7.2	11.5	...
1985	7.1	20.7	14.4	7.0	12.0	8.3
1986	6.6	22.0	15.0	7.0	13.2	8.9
1987	7.5	22.1	15.5	7.1	12.7	9.3
1988	7.9	23.1	15.5	6.5	13.0	10.4
1989	7.9	25.2	15.9	6.7	13.5	10.8
1990	8.5	27.1	16.9	7.0	14.6	11.2
1991	9.4	31.1	18.4	7.0	16.0	11.9
1992	9.8	34.0	19.6	7.9	17.1	12.1
1993	10.9	38.2	23.0	9.0	18.2	13.0
1994	12.1	40.9	26.4	10.8	19.6	12.8
1995	13.5	44.1	29.9	12.6	21.1	...

Source: Recent Demographic Development in Europe (1994). Council of Europe. Strasbourg; Database of Centre for Demography and Human Ecology, Moscow (CDHE).

TABLE A.5. PERIOD AGE-SPECIFIC FERTLITY RATES: RUSSIA, 1958-1996

Year	*15-19**	*20-24*	*25-29*	*30-34*	*35-39*	*40-44*	*45-49***	*TFR****
1958-59	28.4	157.9	156.4	101.9	57.7	19.9	3.0	2.626
1959-60	27.5	157.7	154.5	100.2	56.5	17.3	2.5	2.581
1960-61	26.7	157.5	152.7	99.5	54.3	16.0	1.9	2.543
1961-62	27.2	156.7	142.8	91.8	47.3	15.7	1.7	2.416
1962-63	21.3	156.3	137.3	86.0	44.5	14.9	1.6	2.310
1963-64	21.0	156.2	130.3	80.5	41.4	14.1	1.5	2.225
1964-65	22.7	150.8	122.8	77.3	39.2	13.4	1.5	2.139
1965-66	24.7	150.3	120.1	77.7	38.1	12.6	1.4	2.125
1966-67	25.5	147.8	114.9	77.0	36.1	11.6	1.3	2.071
1967-68	26.0	143.1	110.9	74.0	33.5	10.8	1.2	1.998
1968-69	27.3	142.9	109.0	72.4	32.0	10.0	1.2	1.974
1969-70	28.3	146.9	107.4	69.3	32.2	9.0	1.1	1.971
1970-71	29.7	152.6	109.5	68.0	32.5	8.3	0.8	2.007
1971-72	30.9	156.1	116.3	65.6	33.0	7.9	0.7	2.053
1972-73	31.5	154.7	114.4	63.3	32.5	7.5	0.6	2.023
1973-74	32.8	155.5	112.8	60.0	30.9	7.3	0.6	2.000
1974-75	34.6	157.5	109.7	58.8	28.8	7.3	0.6	1.987
1975-76	34.5	158.8	108.0	58.2	26.5	7.3	0.5	1.969
1976-77	35.6	158.6	107.8	60.0	23.7	7.1	0.5	1.967
1977-78	37.0	156.2	106.5	59.2	21.6	6.7	0.4	1.938
1978-79	40.8	155.0	103.1	55.6	19.6	5.9	0.4	1.902
1979-80	42.7	157.1	101.2	52.6	18.4	5.1	0.4	1.888
1980	43.7	157.8	100.8	52.0	17.4	4.9	0.4	1.885
1981	43.3	157.2	103.5	53.5	19.1	4.5	0.4	1.908
1982	43.8	161.5	107.9	66.6	22.9	4.3	0.4	2.037
1983	45.3	167.3	118.0	63.0	24.2	3.9	0.3	2.110
1984	46.3	165.8	112.9	59.9	23.6	3.6	0.3	2.062
1985	46.8	163.5	113.3	59.8	23.1	3.6	0.3	2.052
1986	47.4	167.5	119.7	65.1	25.8	5.0	0.3	2.154
1987	48.5	170.6	122.6	67.8	27.8	6.1	0.2	2.218
1988	49.6	167.9	114.1	61.8	25.6	5.6	0.2	2.124
1989	52.5	163.9	103.1	54.6	22.0	5.0	0.2	2.007
1990	55.6	156.8	93.2	48.2	19.4	4.2	0.2	1.887
1991	54.9	146.6	83.0	41.6	16.5	3.7	0.2	1.733
1992	51.4	134.0	72.7	35.0	13.9	3.2	0.2	1.552
1993	47.9	120.4	65.0	29.6	11.4	2.6	0.2	1.386
1994	49.9	120.3	67.2	29.6	10.6	2.3	0.1	1.400
1995	45.6	113.5	67.2	29.7	10.7	2.2	0.1	1.344
1996	39.7	106.4	66.5	30.3	10.8	2.3	0.1	1.280

NOTE: The table sets the intercensal annual estimates of fertility rates performed by the Central Statistical Office. While population distributions by age were adjusted after censuses in 1970, 1979 and 1989, no corrections in the age-specific rates were made.

*Including births to mothers under 15.

**Including births to mothers over 49.

***Total fertility rate computed as a sum of five-year fertility rates presented in the table.

Source: The Demographic Yearbook of Russia. State Committee of the Russian Federation on Statistics. Moscow. 1996, p. 219; S. V. Zakharov and E. I. Ivanova, Regional Fertility Differentiation in Russia: 1959-1994. Studies on Russian Economic Development. vol. 7, No. 4 (1995), p. 363; Database of Centre for Demography and Human Ecology, Moscow (CDHE).

TABLE A.6 COMPLETED FERTILITY IN FEMALE BIRTH COHORTS: RUSSIA

Birth cohort	*Total population*	*Urban population*	*Rural population*
1909-1913	2.95	2.67	3.35
1914-1918	2.59	2.32	3.01
1919-1923	2.27	1.96	2.82
1924	2.24	1.91	2.88
1925	2.23	1.90	2.88
1926	2.22	1.89	2.88
1927	2.21	1.88	2.88
1928	2.21	1.87	2.89
1929	2.20	1.85	2.89
1930	2.18	1.83	2.87
1931	2.17	1.81	2.87
1932	2.17	1.80	2.90
1933	2.16	1.79	2.92
1934	2.15	1.79	2.91
1935	2.12	1.78	2.88
1936	2.09	1.76	2.83
1937	2.03	1.72	2.74
1938	1.99	1.70	2.67
1939	1.98	1.70	2.65
1940	1.98	1.71	2.64
1941	1.97	1.71	2.62
1942	1.95	1.70	2.59
1943	1.91	1.68	2.53
1944	1.86	1.64	2.46
1945	1.84	1.64	2.43
1946	1.83	1.64	2.41
1947	1.83	1.65	2.40
1948	1.84	1.67	2.39
1949	1.86	1.70	2.40
1950	1.88	1.72	2.41
1951	1.89	1.74	2.42
1952	1.90	1.75	2.42
1953	1.90	1.75	2.42
1954	1.90	1.75	2.43
1955	1.89	1.74	2.43
1956	1.89		
1957	1.88		
1958	1.86		
1959	1.85		
1960	1.82		
1961	1.78		
1962	1.73		

Source: Author's estimates based on the 1979 and 1989 Censuses data on number of children ever born and annual birth statistics by single-year age of mother.

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FERTILITY TRENDS IN SWEDEN UP TO 1996

Britta Hoem* *and Jan M. Hoem*****

SUMMARY

In this paper, fertility trends in Sweden are described over three decades, through 1996. These trends are related to family-relevant public policies, women's labour-force participation and general economic development, and it is suggested that fertility and employment levels for women may be expected to move in concert rather than in opposite directions in a population where women's emancipation has reached as far as in Sweden. The possibility is foreseen that the Swedish fertility level may start to rise again from its current medium-low level by European standards if and when the country's economy improves, as it seems to be on the verge of doing.

Since the 1960s, a new level of personal control over the reproductive process has been achieved, women's educational attainment has improved, women have entered the labour force to an extent unknown before, and efforts toward greater gender equality have received new impetus. These elements are often seen as important parts of an explanation of the current prevalence of below-reproduction fertility in Europe. In their application to an individual country, such an explanation needs to be complemented and modified. Take the case of Sweden. Even though this country is among the forerunners in the emancipation of women, its fertility level has never dropped to the depths that have hit many other European countries, and the character of some great swings in Swedish fertility show that the national fertility level may move in concert with employment rates for women rather than in the opposite direction. The Swedish TFR rose from 1.6 in 1983 to 2.14 in 1990, in a period where women's labour-force participation rates rose to a record high, and the TFR dropped in subsequent years (back to 1.6 in 1996), at the same time as women's employment rates declined radically.

This suggests that in Sweden a woman's role in society and in the family has already been redefined in a manner which has broken, or even reversed, any

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*Statistics Sweden, P.O. Box 24300, S-104 51 Stockholm.
**Demography Unit, Stockholm University, (S-106 91); currently visiting the Center for Advanced Study in the Behavioral Sciences, Stanford.

former relation where increasing employment meant declining fertility. We argue that today's low fertility level in Sweden largely is a reversible consequence of unfavourable economic developments and not an indication that childbearing behaviour in Sweden has adapted to the very low fertility in some other parts of Europe. The dominant pattern in Sweden is that growing groups of young men and women have had difficulties establishing themselves in the labour market recently. This has lead them to postpone their first births even further than before, which is the main demographic reason why the TFR has decreased.

Childbearing trends in a population depend on the interaction between economic development, country-specific public policies, and the stage of progress in the position of women. Such features should colour our expectations about future fertility trends and should be incorporated into our predictions for a single country. Explanations of differences in fertility patterns *across* countries also need to account for them. Otherwise, it seems hard to understand how fertility can be relatively high in populations with much female employment and low in countries with fewer women in the labour force.

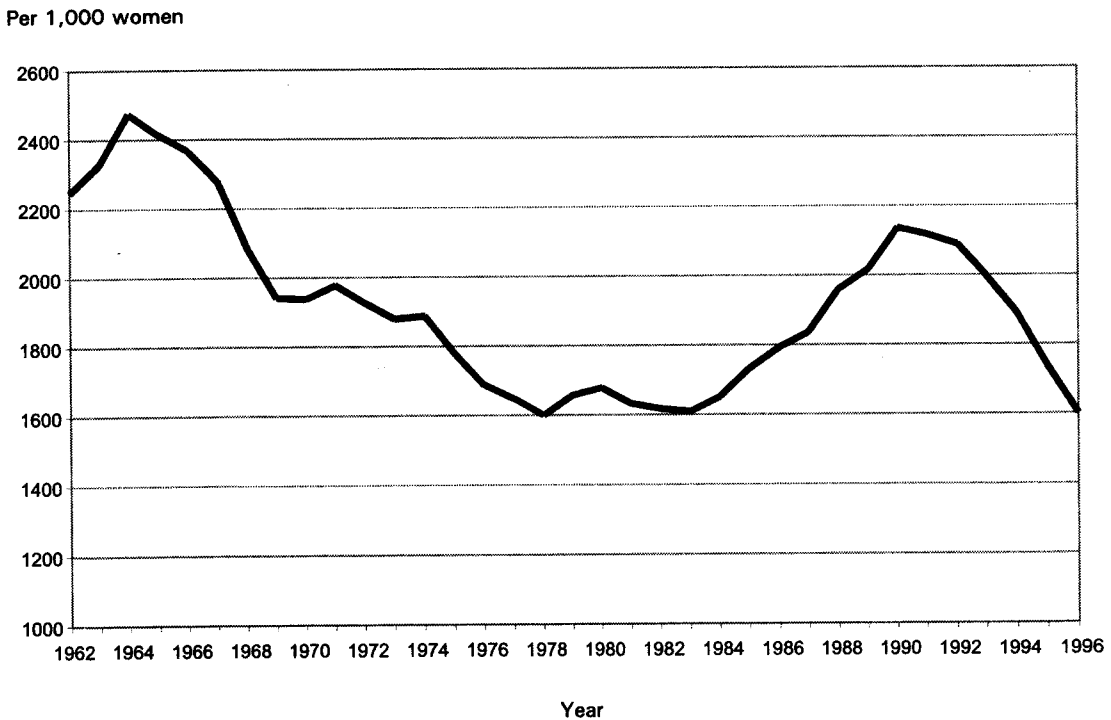
The purpose of the current presentation is to describe Swedish fertility trends over three recent decades and to explain how we have arrived at the position just described. Our account re-interprets our previous work (Hoem and Hoem, 1996), to which we refer for further details. We first present an overview of Swedish fertility trends and the principles behind public policies relevant to the family in Sweden. We then sketch the evolution of family reforms in three broad periods, namely, the years of fertility decline between 1965 and the early 1980s, the decade of new fertility increase in the 1980s, and finally the slump during the most recent half-decade. We conclude the paper with some reflections on possible future trends in fertility.

OVERVIEW OF FERTILITY TRENDS

Swedish fertility trends in recent years have been rather different from those of most other comparable countries. Figure I contains the annual Swedish total fertility rate (TFR) since the early 1960s. As in most other countries, the total fertility rate in Sweden was rather high in the mid-1960s. After the mid-1960s, the TFR declined strongly to a low level just above 1.6, in line with similar developments elsewhere. During the second half of the 1980s, however, the pattern reversed in Sweden and our fertility level increased dramatically in an almost unique movement that attracted attention both at home and abroad. In 1990, the TFR reached 2.14, which was the highest level Sweden has had over the preceding quarter-century and just about the highest fertility level, then, in all of Western Europe. This pattern shattered many theories about what influences fertility, for Sweden is known as a country with unusually high labour-force participation among women, extensive non-marital cohabitation (and cohabitants have lower fertility than married couples), and relatively high union-disruption rates (which is commonly believed to reduce rates of childbearing).

In the 1990s, Swedish fertility has plummeted in another unique movement and has reached the lowest level on record for this country. The current

Figure I. Total fertility rate: Sweden, 1962-1996



outlook for 1997 is a TFR somewhat below 1.6. No other Western country has had such great swings in fertility over these three decades. To approach an understanding of how these movements came about, we need to describe the development of the Swedish Welfare State, its policies, and their consequences in areas that influence childbearing behaviour.

Principles of Swedish family policies

Sweden does not have public policies explicitly aimed at affecting fertility levels. Nevertheless, the generous family policies and the family-friendly labour-market policies that are cornerstones of the Swedish Welfare State have most likely influenced Swedish fertility. A main goal of such policies has been to induce women to establish and maintain strong links with the labour market without unwanted cutbacks in their childbearing. Unlike women in many other populations, a Swedish woman typically can retain her job even when she has small children.

Sweden introduced maternity-leave regulations in 1931, and in subsequent years economic support for single mothers was added, as were maternity benefits for selected groups. To protect women's job rights, Sweden has made it illegal to dismiss anyone on the grounds of marriage or pregnancy, starting in 1939; for women working in the public sector, this has been true since 1925. Successively, public policies have been extended and made more generous. In recent decades, it has been a guiding principle that both parents should have an income-earning job and that a couple should be able to cope with the pressures of combining labour-force participation and running a home even when they have small children. It has been felt strongly that society should support the family and should make sure that all children born are wanted and enjoy a decent standard of living. Many features aim at making this possible. Inducements have taken the form of generous monetary benefits, comprehensive public childcare services, parental rights to reduction of working hours and job leave combined with the right to return to your job after such a leave, and extensive flexibility in exercising such rights.

Family policy, social policy, labour-market policy, housing policy, and fiscal policy have all been used as instruments to improve the conditions of the dual-earner family. Gender-equality policies have been given the same motivation in addition to the promotion of equity for women. Given the strong emphasis on universal labour-force participation, women's rights to a full life have been framed as the right of the working woman to experience motherhood rather than the right of mothers to hold a paid job.

From 1965 to the early 1980s: fertility decline and growing public generosity

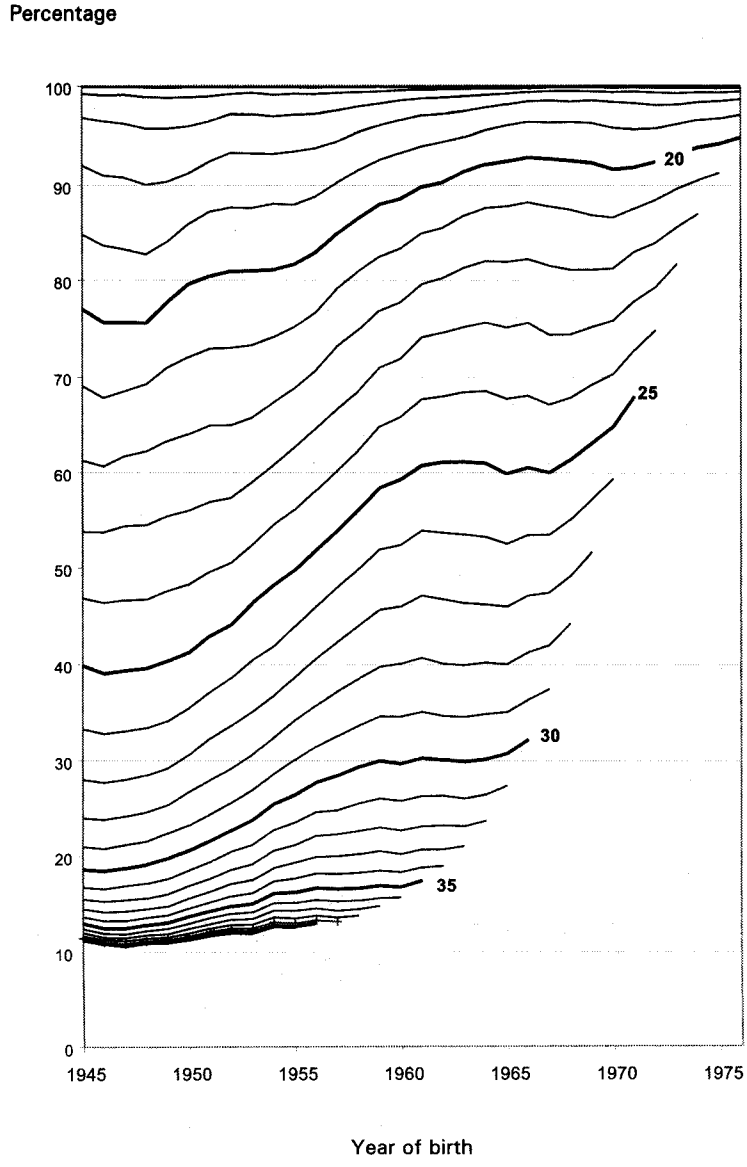
Since the mid-1960s, it has become common for women in many European and Anglo-Saxon countries to combine childbearing with gainful employment. In Sweden, where this trend has been the strongest, over 80 per cent of women with pre-school children are members of the labour force, though they often work part-time. The new pattern of Swedish women's labour-force participation is the result of a number of developments that have reinforced one

another, such as the initial need for a bigger labour force, the power of persuasion of egalitarian groups, and the creation of new jobs and new professional occupations in health care, childcare, personal services, and elsewhere as the Welfare State has developed. The Swedish public sector has set an example to other employers in improving job opportunities for women and in making it easier for both partners in a couple to combine homemaking with paid employment. Successive reforms have sought to achieve the same situation for all workers irrespective of their employer.

Natality declined in lock step with the great flow of women into the Swedish labour force. It became less and less common to have a third or higher-order child, and young men and women progressively postponed their first birth. The proportion who were still childless at age 25, say, rose from some 40 per cent among women born in the 1940s to over 60 per cent of women born twenty years later, and to similar degrees at other ages (figure II). Some of the increase in the age at first birth (figure III) may have been in response to the rules of the parental-benefit system, which we will describe next, but eventually people were having their first births so late on average that other considerations must have been more important. You do not have to wait until your late twenties before you enter motherhood if all you want to achieve first is a satisfactory education and job security in the job of your choice. This showed up when (in surveys conducted in the 1980s) a majority of childless Swedes in their later twenties felt that entry into parenthood had lower priority for the moment than enjoying other aspects of life (Hoem and Hoem, 1996, p. 8). Almost everybody wanted children (and mostly two children at that; see B. Hoem, 1992), but they cannot have felt that postponing the start of childbearing was much of a problem.

Once mothers started entering the labour market in large numbers, further change was called for in other areas. The family ideal of complementary roles for the spouses was questioned seriously in the public debate about gender roles. The mass media highlighted the perceived lack of real equity between women and men in the family as well as in the labour market. The advocacy of a change in women's roles was extended to a demand for a corresponding but converse change in men's roles. An important sequence of reforms extended the maternal-leave system to facilitate the combination of paid employment and parenthood for mothers and to try to engage fathers in similar behaviour. Family legislation was reoriented and several inducements for fathers to change male roles were introduced. Before 1974, only mothers were entitled to absence from work in connection with the arrival of a child. They had a guaranteed right to return to their jobs but the income compensation during a leave was quite modest. In 1974, the income-replacement level was raised to all of 90 per cent of earnings and fathers became entitled to share the parental leave with mothers in any manner that the couple might want. There were six months of leave for the parents to share in 1974. This was extended gradually in subsequent years and finally reached 15 months in 1989 (of which three months are at a very low flat rate). In addition, parents are entitled to unpaid leave and to reduced working hours (both with continued job security) after the paid parental leave has been used up. Selected (but quite large) groups have negotiated additional leave and additional monetary benefits on parental leave in their wage settlements.

Figure II. Childless women, by age and year of birth: Sweden, 1945-1976



The system allows parents much flexibility. Since 1975, parental leave can be taken out at full time or part time at the parents' option, and it can be saved and used any time before the child reaches school age. Parents are allowed to mix vacation, sickness periods, flat-rate and income-related leave benefits (or no such benefits), and full- and part-time parental leave with great liberality. This allows them to follow an individual strategy that they see as optimal to themselves.

Public policy thus became progressively more concerned with measures that mainly favoured gender equality and the dual-earner family. Equity was seen as based on the independence of individual family members rather than on their mutual responsibility to each other. This was part of the motivation for a decisive modification of the taxation of married couples (in 1971), and it was reflected in reforms directed at the formation and dissolution of marriage (Agell, 1984, 1989). Society's neutrality as regards the forms under which individual couples chose to live together was made explicit and led to a policy of non-interference when non-marital cohabitation became widespread in the late 1960s. It was followed later by legislative adaptation to developments in union formation and union disruption (in 1987 and later).

Raising small children is of course not merely a question of parental leave and leave benefits but also of making satisfactory arrangements in subsequent years. During the 1970s and 1980s, Sweden made sizeable investments in childcare personnel and public day-care facilities, including high-quality day-care centres, family day-care, part-time pre-school and after-school arrangements for six-year-olds and young schoolchildren of parents who work or are enrolled in education. The number of places in public day care increased dramatically. Parents' fees cover only a fraction of the running costs.

Conventional wisdom has posited that women's increased labour-force participation was a prime explanation of the fertility decline, but the evidence now available makes this implausible as an explanation of individual behaviour in the Swedish setting, even at the early stages of the second demographic transition. In our investigation of childbearing behaviour in Sweden in the 1960s and 1970s (B. Hoem, 1993), women who had two children and who had worked in a paid job just about all the time since first birth, essentially had the same fertility as those who had been housewives during the same stage in life. (Similar findings have been made later for other countries; see Kravdal, 1992.) Our analysis was based on individual life histories. The negative association between labour-force participation and (final) sibling size often found in studies that have not used such data, most probably is a consequence of a strong effect in the opposite direction, for the number of children a woman has and their age composition have been important determinants of her labour-force behaviour.

THE NEW FERTILITY INCREASE OF THE 1980S

As we have mentioned already, the Swedish total fertility rate rose appreciably after the beginning of the 1980s (figure I). Fertility for second order births and above actually started increasing after 1977 (J. Hoem, 1993). The postponement of first births at normal childbearing ages continued until 1984, but then stopped as first-birth rates started rising even at young ages and stayed

on the upward track throughout the second half of the 1980s. (See figures III and IVa. In figure II, this is reflected in a flat part just before the right-hand tail of the curves.) At ages above 30, first-birth rates essentially increased, at least since the late 1960s (Andersson, 1996; see also figure IVb).

To understand this substantial fertility increase it is important to note that it finally came to include all birth orders and women of all ages. Three features may have interacted to produce such a result.

First, after some youth unemployment during the initial years of the 1980s had been reduced, economic trends were very favourable and private incomes improved in Sweden throughout the rest of the 1980s. The income effect on fertility must have been strong.

Secondly, the quite massive investments directed towards families with children must have borne fruit. While fertility rose for all categories of women, it increased particularly strongly for those who benefited from the introduction of a speed premium on births after the first one. In public family-insurance systems where benefits are related to earnings, parents are induced to time their births so as to optimize their total income stream. If benefits must be earned by periods of recorded income, there is an inducement to postpone entry into parenthood until rights to suitable benefits have been established. In such systems, there is also a corresponding inducement to space subsequent children in a manner that avoids penalizing the recipient in consequence of a low income during the interval between births. The Swedish system differs from all others known to us in that it contains a strong encouragement to space births closely after the first one. In this country, the benefit level after child number two, three, and so on is the same as after the preceding child if the previous benefit level was above what the parent has gained in the interim, provided that the interval since the last previous birth does not exceed a prescribed number of months. This rule is very advantageous to the many women who work at reduced hours when they have small children. It was made statutory in 1980 and the "eligibility interval" was then set to 24 months. In 1986, the interval was extended to thirty months. Such an interval turns out to be an attainable target for many parents, and the rule made many couples speed up their pace of childbearing appreciably once their first child had arrived (Martinelle, 1989; J. Hoem, 1993; Andersson, 1996; see also figures Va and Vb). By 1990, rates of third- and fourth-order births had risen to the levels they had when the original fertility decline started in the 1960s, and rates of second births in 1990 were much above those of, say, 1961 (Andersson, 1996). Only rates of first birth to women below age 30 were below previous levels (our figure IVa).

Thirdly, there was a strong belief in the general population that things could only continue to improve, for everybody in general and for families with children in particular. Such optimism was fanned by signals sent by opinion leaders. The ideological impact of the expressed purpose of family policies must have added to the content of the reforms themselves in softening the effect of changes that could otherwise have reduced fertility levels much more strongly than we saw in Sweden up to the late 1970s. It also reinforced policy impacts in the 1980s.

Figure III. Mean age at first birth: Sweden, 1974-1996

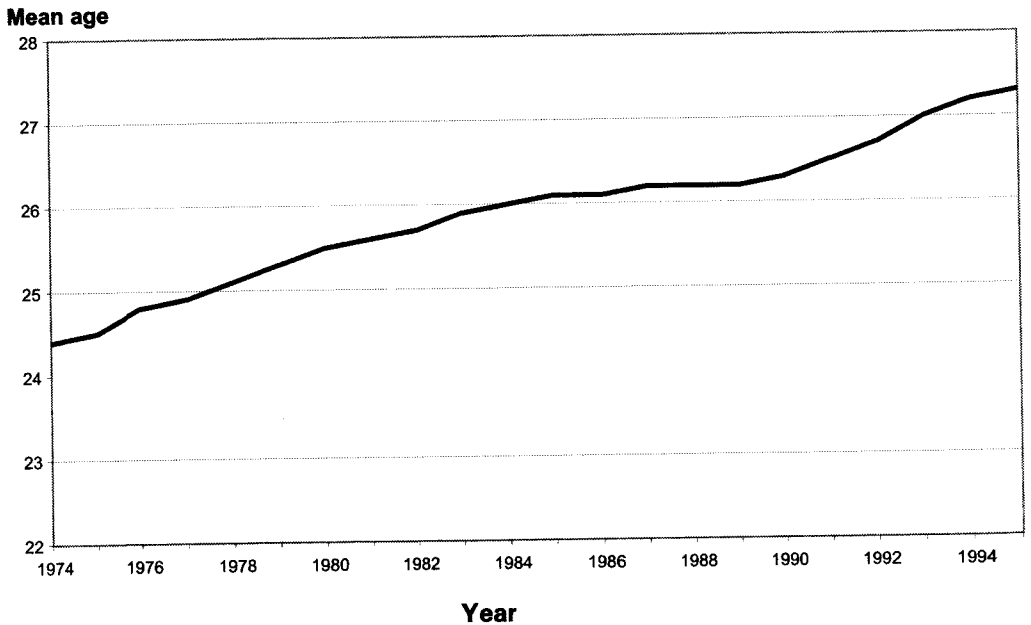


Figure IVa. First births per 1,000 childless women, by age (15-28): Sweden, 1960-1996

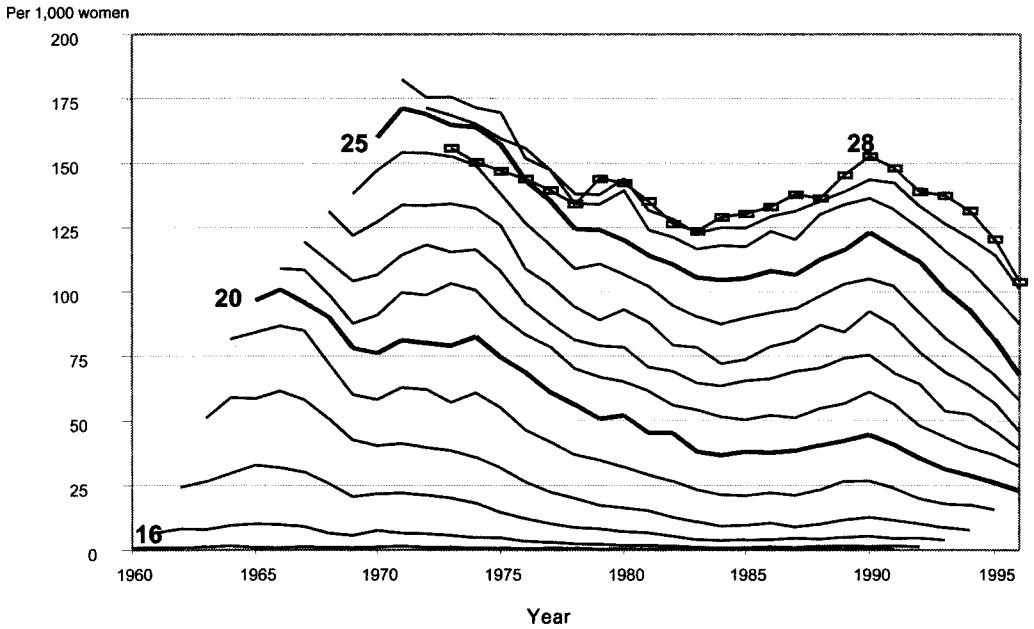


Figure IVb. First births per 1,000 childless women, by age (29-39): Sweden, 1960-1996

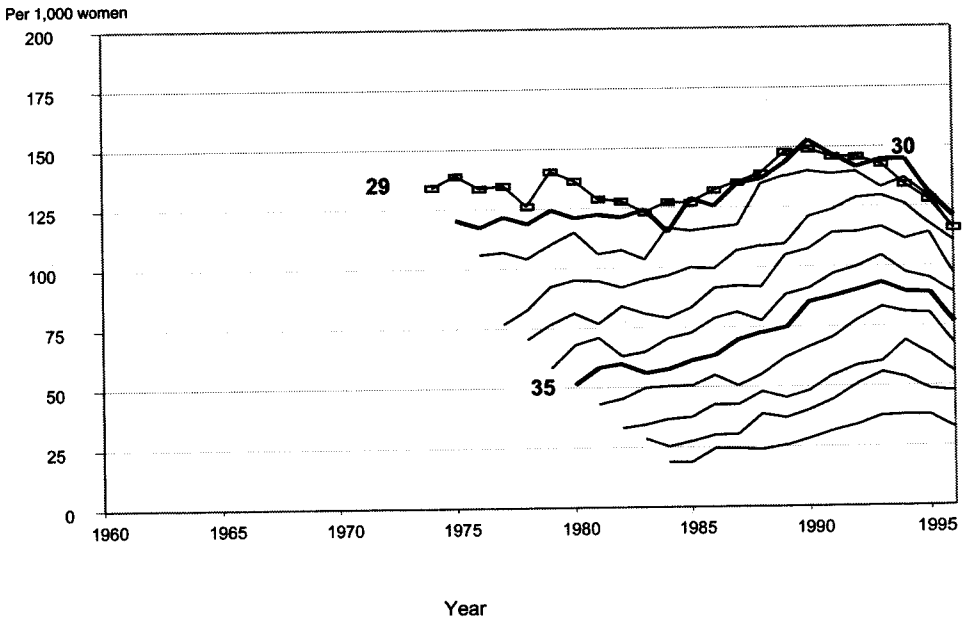


Figure Va. Proportion with a second child 30, 48 and 72 months after first birth: Sweden, 1970-1995

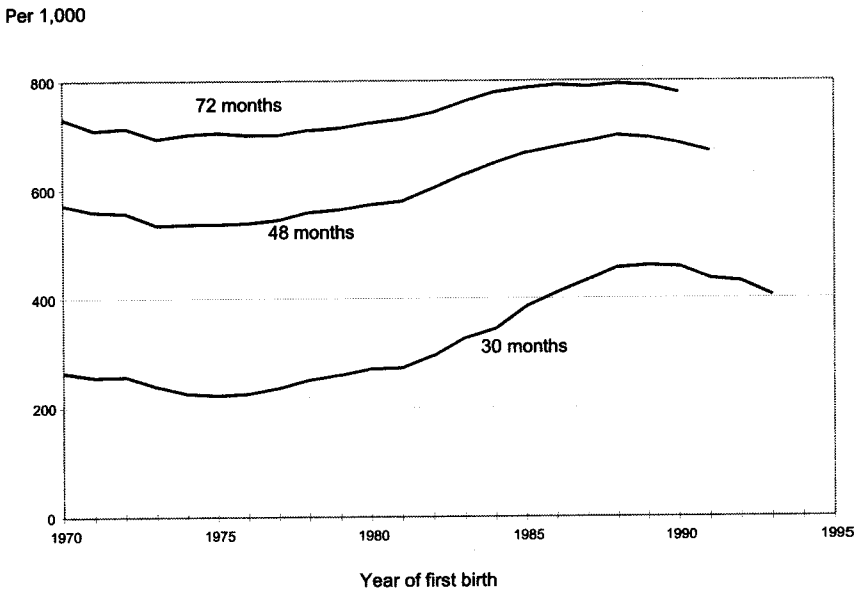
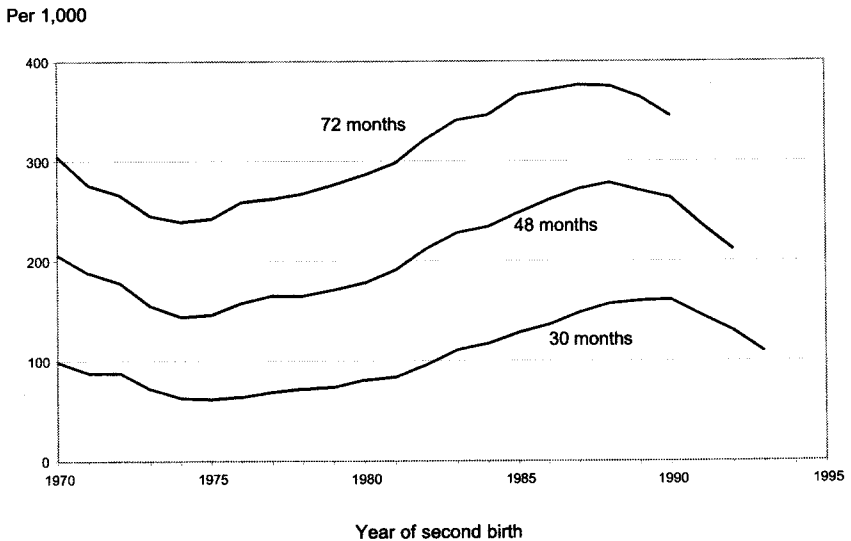


Figure Vb. Proportion with a third child 30, 48 and 72 months after second birth: Sweden, 1970-1995



1990-1996: FERTILITY DROPS AGAIN

As we moved into the 1990s, Sweden had a precipitous decline in fertility (figure I). The drop took place at normal childbearing ages for most birth orders (Andersson, 1996). Third- and fourth-order birth rates fell by as much as one third between 1990 and 1995. There was a noticeable decline for first-birth rates at ages below 34 (figures IVa and IVb). At higher ages, first-birth rates continued to rise until 1995, but then a decline set in even at these ages for the first time on record (figure IVb). Second-birth rates have been partly spared and have suffered only milder setbacks (Andersson, 1996; Hoem and Hoem, 1996).

The driving forces behind all of this are economic trends that have turned sour in Sweden and have made the economic present quite problematic for many young people and many families. As the recession deepened, unemployment rose from very little to normal European levels. The public sector, previously a bastion of employment for women, suffered a progressive reduction, with increasing difficulties for young women to establish themselves in the labour market. Joblessness has hit ages under 30 particularly hard, and the most important demographic factor in the new fertility decline is a new and further postponement of the entry into motherhood by women under age 30. (See figure III; it also shows up as a renewed increase in childlessness in the right-hand tail of most curves in figure II.) The proportion childless at age 25, say, has increased from 60 per cent for women born in 1967 to almost 70 per cent for women born only four years later. Analyses of first-birth rates (to be published elsewhere) show that there are large differences in fertility trends for different educational groups. Less educated groups have had a hard time getting established in the labour market and have also had strongly declining first-birth rates during this period of relative economic hardship. Groups with more education have better retained their position in the labour market and their first-birth rates have also been quite stable. Even among the more highly educated there are differences in fertility trends that faithfully reflect differences in their employment situation.

A separate multivariate analysis of childbearing behaviour in the 1960s among childless women with at most twelve years of school (corresponding to at most an upper-secondary education or a high-school diploma) reveals a very strong decline in first-birth rates for this group as a whole. When women's work-related earnings (lagged by one year) are added in the analysis, we find a strong dependence on this regressor. Women with no earnings or very low earnings have particularly low first-birth rates. At the same time, the decline in first-birth rates over time becomes small in all subgroups, which indicates that the general decline in first-birth rates is "explained" mostly by a shift toward groups with little work-related income. These groups are in part the unemployed, in part women engaged in study activities. Many young people have responded to the increased competition in the labour market by taking more education, producing greater cohorts of students than ever before and exacerbating the drop in fertility, since childbearing is relatively rare among students.

Another part of this picture is that family policies have become less generous for the first time in modern Swedish history. Costs have been cut in childcare and schools, and average group and class sizes have risen. Toward the end of the period, the compensation level of parental-leave benefits was

reduced from 90 to 80 per cent of recorded earnings (in 1995) and then to 75 per cent (in 1996). Cash child allowances were cut back. An additional allowance for each child after the second one, introduced in 1982 and increased in later years, has disappeared for children born in 1996 or later. As a group, families with small children have felt the pinch from all sides. A slimmed public sector means increasing unemployment among women. Unemployment means loss of income and loss of income-related benefits during parental leave.

In summary, Swedish fertility plummeted in the first half of the 1990s at a pace unknown in comparable countries. This fertility reduction is likely to have a set of explanations that are similar to the ones we have given for the previous period, but that now work in reverse. By tying benefits tightly to labour-force participation and by providing paid and generous parental leave and high-quality childcare to working mothers, Swedish policies may have contributed to the strong increase in fertility in the period of radical increase in women's employment in the 1980s. The flip side of the conditions for benefit eligibility and the determinants of benefit levels is that fertility declined in the 1990s when the economy turned sour and women's employment fell (as did men's). Because benefit rates are so strongly tied to earned income in Sweden, one should expect a strong recession with public-sector cutbacks to have a stronger income effect than elsewhere. At a time of slacking incomes and pessimistic expectations it may be rational to postpone a first birth (if you are not too old) and possibly forego a higher-order birth. Together, such features could produce the age-and-parity-specific patterns we have observed. Even though the decline in the TFR in the 1990s primarily reflects the drop in first-birth rates, such a drop leads to fewer second and higher-order births in later years, which compounds the decline. The fact that second-birth rates have held up so well after all, shows how strong the two-child norm remains in the Swedish population. Even after the cutbacks in family-policy generosity, Sweden retains a benefit level that is generous by international standards, so the benefits may actually have served as a bulwark against further declines in birth rates at orders 2 and above. Nevertheless, prospective parents must have a feeling of relative deprivation when they compare what support they are likely to receive with what they could have expected just a little time before, so benefit reductions may have begun to take some toll toward the end of our period. The suddenness of recent upheavals is likely to have caused a kind of a shock reaction, and fertility may have taken a temporary blow while people adapt to a passing economic retraction.

PROSPECTS FOR THE FUTURE

It is sometimes suggested that fertility has dropped in Sweden in the 1990s because childbearing behaviour is adapting to continental-European patterns. If this were the case, then the most likely prospect would be that the Swedish TFR would remain at its current medium-low level or would decline even further. As we have noted already, however, we feel that prospective trends in each country must be assessed on the basis of its specific situation within the framework of patterns that are common to several populations. We see no sign that Swedish women (or men) are prepared to give up parenthood or that they will be content with a single child. For instance, findings in the

Swedish Family Survey of 1992 specifically contradict any such notion (Hoem and Hoem, 1996, p. 18). Among its telling results is one which shows that even at age 33, half of the women who were childless expected to become mothers some time and another 28 per cent thought they perhaps might become mothers. A plot of the Total Fertility Rate for the cohorts born between 1920 and 1950 (Hoem and Hoem, 1996) also shows that Swedish women have had about two children on average for a long while, despite the great variability seen in the period-based TFR (figure I). This notable fact shows that most of the fertility variation on record concerns the age at which children are born, i.e., the tempo of childbearing, not the final quantum. We suspect that values concerning how many children people want have probably been quite stable over the cohorts involved, but that there have been great swings in the general mood in society, which determine the manner in which family values are realized in childbearing behaviour in any period. These swings move in concert with economic and political conditions. In line with our interpretation of previous swings, we believe that Swedish fertility may start rising again when the economy improves.

In this respect some optimism may be warranted. The Swedish Government has made visible efforts to reconstruct the country's public finances, and the governing social-democratic party has just published proposals to mitigate or even reverse cutbacks in the public sector and to improve the economic situation of families with children. Previous levels of family benefits are to be restored and more money is to be made available to the sectors of health and education. If people react to these signals the way they did before, and if the job market picks up correspondingly, there is a good chance that fertility trends may reverse and that the Swedish TFR may again start climbing toward the reproduction level.

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FERTILITY IN THE UNITED STATES: CURRENT FEATURES AND FUTURE TRENDS*

*S. Philip Morgan***

SUMMARY

The United States total fertility rate was estimated to be 2.01 in 1995, giving it one of the higher fertility rates among developed countries. While the total fertility rate did decline to a level well below 2.0 in the mid-1970s (to a low of 1.74 in 1976), this low level was a temporary phenomenon caused by a dramatic shift in fertility timing toward later ages. The author argues that the current pattern of fertility is sustainable and, consequently, that below-replacement fertility is not an inevitable problem for the United States in the next decade and beyond. A modern United States fertility pattern is characterized by entry into childbearing across a broad age range, moderate levels of childlessness, modest numbers of one-child families, and few large families. There is substantial variability in fertility within the population. Hispanic and black women have fertility substantially above the 2.0 level; whites and Asians are slightly below it. But even for non-Hispanic white women with 16 or more years of schooling, the total fertility rate was estimated to be 1.71 in 1994 (Matthews and Ventura, 1997).

CURRENT FEATURES AND FUTURE TRENDS IN UNITED STATES FERTILITY

This paper has two distinct parts. The first documents important features of contemporary United States fertility. The second part argues that most of these features are not the inevitable consequence of powerful secular or cyclical factors but are the consequence of ongoing interest group struggles within American society. These struggles, and their consequences, are often substantially removed from concerns about the level of fertility, yet together they constitute the environment within which fertility-relevant decisions are made. This perspective views social change, family change and fertility change as determined in an uncertain, contested terrain. Nevertheless, in the absence of unforeseen and dramatic social change, there is little reason to anticipate that United

*Some tabulations and argument presented here are also contained in Morgan S. Philip, (1996) "Characteristic features of modern American fertility", *Population and Development Review, No. 22* (Supplement: p. 19-63).

**Population Studies Center, University of Pennsylvania.

States fertility will fall substantially below replacement level in the next decade or beyond.

Key features of contemporary United States fertility

Let us begin by considering the *range* of *possible* modern fertility patterns. Many would argue that societal survival depends upon fertility for the (biological) replacement of societal members.[1] But at the national level, fertility is only one of two replacement mechanisms (immigration being the second). Moreover, biology does not require that individuals reproduce. If they do, then women can have children within a roughly three-decade expanse of the life course. These facts allow substantial variability in modern fertility regimes. In fact and as we will show below, a peek below the aggregate surface of United States fertility exposes substantial differences across racial groups within the United States. Moreover, cross-national comparisons (like those documented in this volume) reveal substantial differences. From these general observations, it can be concluded that *neither societal survival, biological constraints, nor economic development determines more than the broadest features of the modern United States fertility pattern.* For instance, biological replacement of the population could be accomplished with a broad array of fertility patterns. A few extreme examples will suffice:

1. The United States fertility rate could be zero and immigration could replace the population.

2. United States population replacement could be achieved entirely through fertility because each woman has two children.

3. United States population replacement could be achieved entirely through fertility because one half of the women have four children and the other half have none.

Against this backdrop of possible strategies, some key features of the modern United States fertility pattern are listed and annotated below.

1. *The United States has one of the higher levels of fertility in the developed world.* Table 1 shows total fertility rate (TFR) estimates for selected countries. Among the countries shown, only New Zealand has a higher fertility rate than does the United States.

2. *Substantial variability in period fertility characterizes United States fertility in this century and is possible in the future.* The twentieth century has witnessed dramatic fluctuations in levels of United States fertility. Figure I shows long-term trends in the crude birth rate and in the total fertility rate. The crude birth rate includes the effects of age structure and we prefer the total fertility rate as a period measure of fertility.

TABLE 1. TOTAL FERTILITY AND AGE-SPECIFIC RATES: SELECTED COUNTRIES

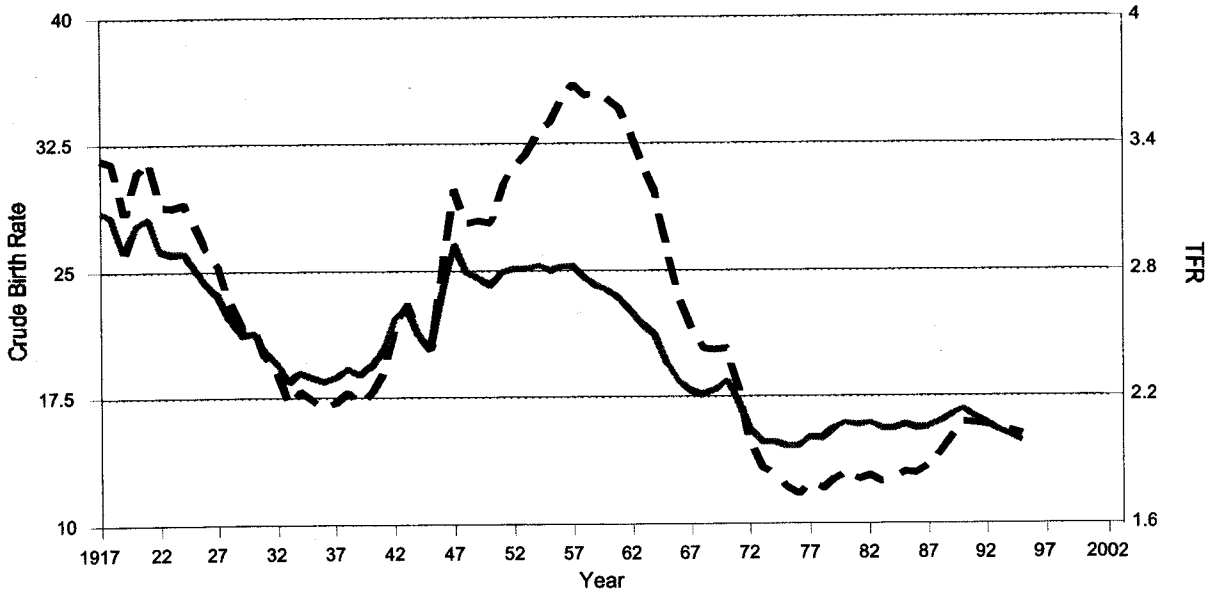
	TFR	*15-19*	*20-24*	*25-29*	*30-34*	*35-39*	*40-44*	*45-59*
North America								
Canada, 1992	1.694	25.7	75.1	119.4	85.4	28.9	4.2	0.1
United States of America, 1995[a]	2.013	56.8	109.8	112.2	82.5	34.3	6.6	0.3
Asia								
Japan, 1994	1.469	4.0	41.9	123.0	96.6	25.6	2.6	0.1
Singapore, 1995	1.770	6.8	48.5	132.7	114.6	44.3	6.9	0.2
Thailand, 1992	1.826	41.6	106.5	99.2	64.8	32.3	13.0	7.8
Europe								
Austria, 1994	1.457	19.1	81.4	102.3	61.6	22.8	3.9	0.2
Denmark, 1994	1.816	9.3	63.4	141.6	107.0	36.5	5.2	0.2
France, 1991	1.800	9.1	73.2	139.4	93.4	37.0	7.4	0.5
Italy, 1991	1.275	8.0	49.7	90.7	71.8	29.3	5.2	0.2
Portugal, 1993	1.512	22.7	74.7	105.8	69.0	24.3	5.4	0.4
Spain, 1991	1.345	11.0	46.3	99.7	77.9	27.9	5.8	0.4
United Kingdom, 1994	1.747	28.8	78.2	112.1	88.5	35.4	6.0	0.3
Oceania								
Australia	1.846	20.7	69.2	126.0	105.1	41.2	6.7	0.3
New Zealand	2.132	33.8	95.3	142.0	108.5	39.9	6.5	0.3

[a]Ventura *et al.* (1997).

Source: *Demographic Yearbook, 1995* (United Nations publication, Sales No. E/F.97.XIII.1).

The trends in the total fertility rate are fairly well understood. Most analysts attribute these trends to dramatic period forces that could not have been anticipated a decade or more in advance. The depression of the 1930s brought delays in fertility, increases in childlessness, and declines in the average family size. The Second World War, and especially the two decades following it, brought dramatic improvements in living standards especially compared to the referent of the depression. This prosperity brought early and nearly universal marriage and parenthood, and in a period largely lacking coital-independent methods of contraception, a fairly rapid pace of childbearing. The "baby bust" of the 1970s was created by multiple antinatalist social and economic forces coupled with the dramatically increased availability of coitus-independent methods of contraception. The baby bust was produced by fertility changes like those that accompanied the depression: delayed fertility, increasing childlessness, and smaller family size. The momentum of the timing shift pushed the total fertility rate to 1.74 (in 1976), below the level that will be observed for any cohort that contributed to this low period rate. The United States TFR has hovered just above 2.0 in the years 1989 to 1995.

Figure I. Trends in total fertility rate and crude birth rate: United States, 1917-1995



Source: Heuser (1976); NCHS Vital Statistics (1974-1992), Ventura *et al.* (1995; 1997).

Overall then, major period factors could affect both the number and timing of births. But, if the past is any guide, these period shifts will be difficult or impossible to predict.

3. *High (4+) order births are rare.* This is a universal feature of modern fertility patterns and is a result of secular increases in the costs of children. Given that parents bear most costs (broadly conceived) of children in modern contexts, only massive transfers to families could compensate for the costs of large families. Also, the motivations to have additional children varies by birth order. Lower order births are justified by a range of social-psychological reasons: "to have a child to love and care for", "to carry on the family name", "to have a sibling for a first child" or "to have a boy (or girl)". The motivations for large families, usually given in less developed contexts, focus on the value of children's labour. In economically advanced contexts such motivations are anachronistic—children consume far more than they produce.

4. *Substantial proportions of women will remain childless, and this proportion could vary across time in the United States.* Neither this level of childlessness nor its variability can be considered as universal features of modern fertility patterns.

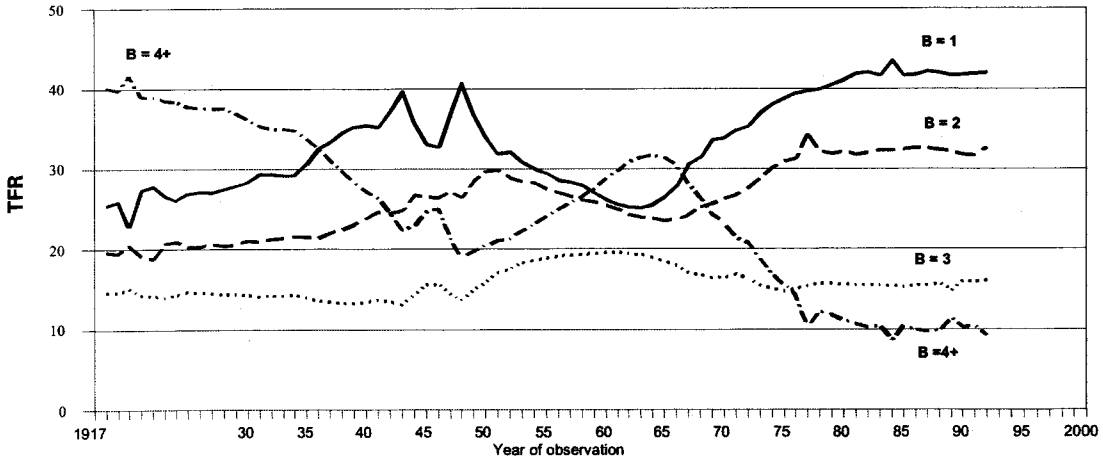
5. *The ages that women bear low parity births vary from the teen years into the late 30s.* This variability in ages at parenthood has not been shown to be a universal feature of modern fertility patterns. The United States has the highest rates of teen childbearing in the developed world (Jones *et al.*, 1986). The contrast with Japan, for instance, is striking; teen childbearing is virtually absent in Japan. Delayed childbearing is becoming a more visible feature of the modern American fertility pattern and this trend has not run its full course.

To demonstrate these features, figures II and III display the percentages of the TFR contributed by women of different parities and ages, respectively. These are not fertility rates; the percentages plotted reflect the contribution of each group to the overall total fertility rate. An increased contribution of an age or parity results because the fertility of women in one age or parity group declined more slowly (or increased more rapidly) than did the rates for the other groups.

Figure II shows the contributions of women at different parities. Early in the century, fourth and higher order births accounted for more than 40 per cent of the fertility rate. By 1993, women at these high parities contributed only about 10 per cent of the fertility rate. In the most recent period shown, roughly 75 per cent of the fertility rate results from women's first and second births. Given the large proportion of births that are first or second birth order and that higher order births are (by definition) conditional on them, United States future trends will be largely determined by variability in the occurrence and timing of these lower order births.

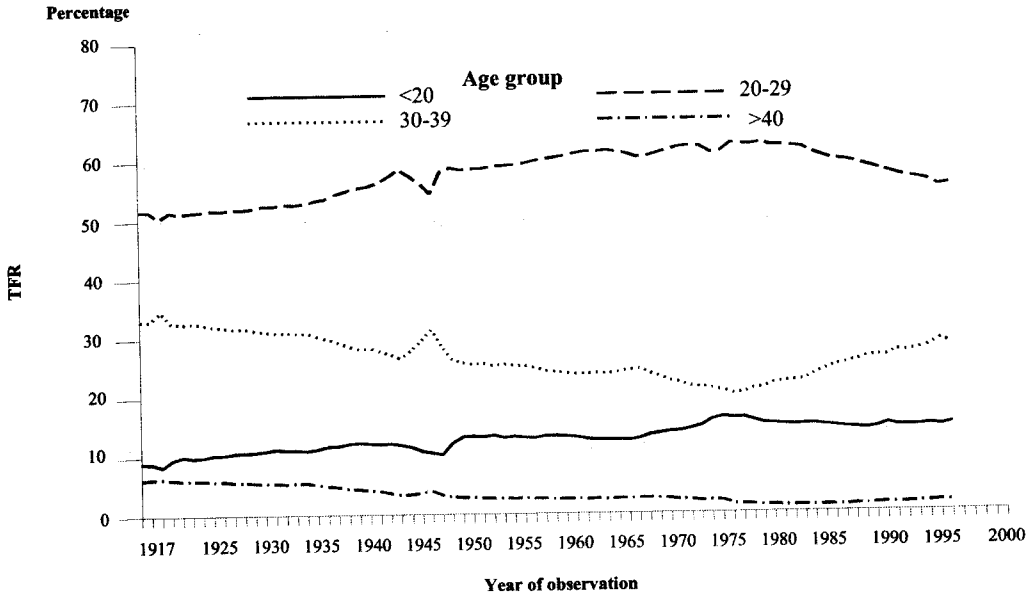
Turning to figure III, parallel tabulations can be made by age through 1995. Note again that the contributions of the four age groups are constrained to be 100 per cent. Figure III shows that the fertility of those aged 20-29 has accounted for more than 50 per cent of the TFR in every year in this series (55 per cent in 1995). The percentage of childbearing by women aged 30-39 declined

Figure II. Total fertility rate accounted for by each birth order: United States, 1917-1992



Source: Figure updated from Morgan (1996); calculated from Heuser (1976); NCHS (1990-1995).

Figure III. Total fertility rate accounted for by age groups: United States, 1917-1995



Source: Figure updated from Morgan (1996); calculated from Heuser (1976); Ventura *et al.* (1997).

across most of the series but has shown increases over the past 15 years. Women in their 30s contributed 29 per cent of the 1995 fertility rate. Teen childbearing has contributed more to the TFR over the years, but in 1995 it accounts for only 15 per cent of the fertility rate. The proportion of the TFR accounted for by women over age 40 has been small throughout this century and is becoming smaller. Thus, while births to women in their 40s have received substantial media attention, such births are relatively rare.

In short, these figures show that fertility has become increasingly concentrated by parity. More than 75 per cent of the TFR is accounted for by first and second births. But fertility has not become more concentrated by age. Given that most women will have a small number of children, a cohort's fertility could be concentrated within a narrow age range. Instead, childbearing in a woman's 20s remains most common but substantial proportions bear children as teenagers or in their 30s. The key question that emerges for predicting future fertility is: how many women will have first and second children and at what ages? Note that, as was the case of the TFR level (figure I) there is little variability in the contribution of age and parity groups over the past decade. A modern age-parity fertility structure seems to be in place. Figure IV shows this age-parity structure, i.e., the contribution of age-parity groups to the 1992 total fertility rate.

6. *Substantial proportions of births will be to unmarried women.* Married women will remain more likely to bear children than will unmarried ones (although this differential will probably narrow in the future). But large proportions of sexually active women will be unmarried, and many non-marital conceptions will result. Fewer of these premarital conceptions will be followed quickly by marriage (Parnell, Swicegood and Stevens, 1994). Increasing non-marital fertility is a factor maintaining the relatively high United States fertility rate. Note that substantial non-marital childbearing is not a universal feature of modern fertility patterns (for example in Japan, Singapore and S. Korea non-marital births are rare, and dramatic increases are not predicted).

7. *Racial and ethnic differences in childbearing patterns will be substantial.* Recent Census Bureau projections (United States Bureau of the Census, 1992) incorporate modest fertility rate convergence for non-Hispanic whites, Hispanic whites and Asians. But for the first time the Census Bureau projects no "white/African American" fertility convergence. The Bureau's rationale (for projecting white/African American racial differences into the future) is based on the persistence of these racial differentials in recent decades. The segregated nature of America's communities might account for these persistent racial differences (see Swicegood and Morgan, 1994).

Figure V shows TFRs since 1960 for whites and blacks with greater disaggregation for more recent periods. Declines by blacks in the past 4-5 years has brought some convergence. But there is striking variability across racial/origin groups: Hispanic fertility is over 3.0, blacks are well over 2.0, American Indians are slightly above 2.0, Asians/Pacific Islanders and non-Hispanic whites are slightly below 2.0. Table 2 shows the estimated TFR and age-specific rates for 1995. While minority groups do contribute to higher fertility, even the white non-Hispanic rate is near 2.0 (1.785).

Figure IVa. Total fertility rate, by age and parity

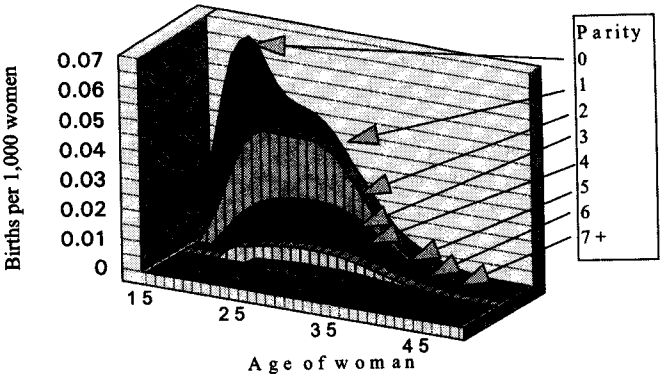


Figure IVb. Second view
Parity 0 and 1: Total fertility, by age and group

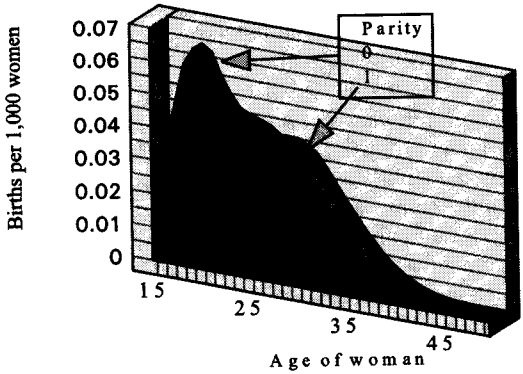


Figure V. Total fertility rate, by race and origin: United States, 1960-1995

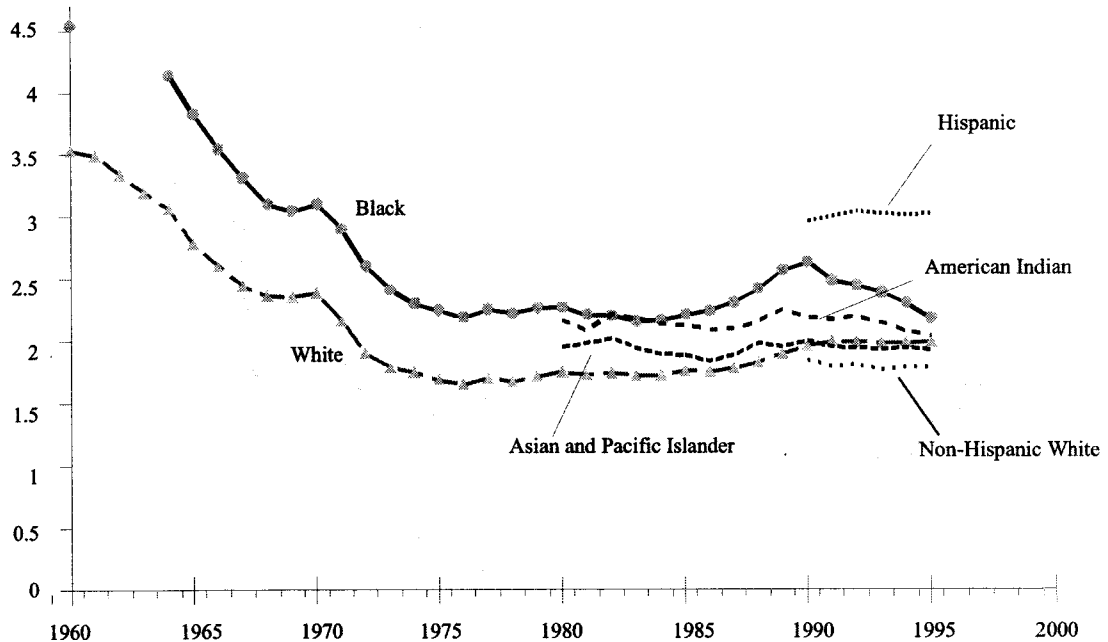


TABLE 2. UNITED STATES TOTAL FERTILITY AND AGE-SPECIFIC RATES, 1995: BY RACE AND HISPANIC ORIGIN

	TFR	*15-19*	*20-24*	*25-29*	*30-34*	*35-39*	*40-44*	*45-59*
United States:	2.013	56.8	109.8	112.2	82.5	34.3	6.6	0.3
By race:								
White	1.985	50.1	106.3	114.8	84.6	34.5	6.4	0.3
Black	2.154	96.1	137.1	98.6	64.0	28.7	6.0	0.3
Asian/Pacific Islands	1.921	26.1	72.4	113.4	106.9	52.4	12.1	0.8
American Indian	2.026	78.0	132.5	98.4	62.2	27.7	6.1	0.3
By Hispanic origin:								
Hispanic	3.006	106.7	188.5	153.8	95.9	44.9	10.8	0.6
White non-Hispanic	1.785	39.3	90.0	106.5	82.0	32.9	5.9	0.3
Black Non-Hispanic	2.224	99.3	141.7	102.0	65.9	29.4	6.1	0.3

Source: Ventura *et al.* (1997).

8. *Socio-economic differences in fertility timing are substantial and will also be clearly visible in the quantity of fertility.* More educated groups bear children later than do those with less education, and these differences have increased over the past few decades (see Rindfuss, Morgan and Offutt, 1996). These differences in timing will be reflected to some degree in completed fertility (Morgan and Rindfuss, 1997). But vital registration data in table 3 show that even for women with the most education (16+ years), fertility rates do not fall to levels observed in many other industrialized countries. White non-Hispanic women, for instance, have an estimated TFR of 1.71.

9. *Contraception and abortion will remain the key proximate determinants of modern United States fertility.* This will generally be true in modern contexts. Access to these determinants provides powerful and immediate levers on fertility. Access to effective contraception, at least for adults, is well-entrenched in American society. But the same cannot be said for abortion. Opposition to abortion in the United States has, I believe, been a significant, pronatalist factor in the last decade and a half. This opposition has reduced many women's access to abortion services (see Henshaw and Van Vort, 1994).

TABLE 3. UNITED STATES TOTAL FERTILITY AND AGE-SPECIFIC RATES, 1994: BY EDUCATION, RACE AND HISPANIC ORIGIN

	TFR	*15-19*	*20-24*	*25-29*	*30-34*	*35-39*	*40-44*	*45-59*
United States:								
All	2.013	56.8	109.8	112.2	82.5	34.3	6.6	0.3
Education 16+								
Hispanic	2.029	[a]	89.7	115.3	131.7	56.5	12.5	
White non-Hispanic	1.708	[a]	40.4	110.5	124.6	55.9	10.1	
Black non-Hispanic	1.623	[a]	69.7	91.3	108.6	47.1	7.8	
Education 12 years								
Hispanic	3.811	219.5	230.6	171.5	88.5	43.8	8.2	
White non-Hispanic	2.391	111.5	152.9	119.9	66.5	23.5	3.8	
Black non-Hispanic	3.573	274.4	223.3	113.6	68.8	28.5	6.0	
Education 0-8 years								
Hispanic	4.052	145.4	287.7	181.5	124.4	52.8	18.5	
White non-Hispanic	[a]	[a]	[a]	[a]	[a]	[a]	[a]	
Black non-Hispanic	[a]	[a]	[a]	[a]	[a]	[a]	[a]	

[a]Insufficient observations for estimates.

Source: Table 2, Birth and fertility rates by educational attainment: United States (1994). Matthews *et al.* Monthly Vital Statistics Report 45 (10: Supplement April 24, 1997).

Will these features change in the future? Theories predicting a particular change would have to be *secular* or *cyclical*. Some observers focus on long term secular trends that accompanied the fertility transition, and they argue that these factors have not yet run their full course. For instance, Larry Bumpass (1990) argues "that theories about fertility decline are intrinsically theories about changes in the family as an institution" (p. 483) and "... what is happening to the family is a continuation of what has been happening for at least several centuries" (p. 484). These family changes are antinatalist and lead Bumpass to predict lower fertility in the future, *date unspecified.*

In contrast, in *Beyond the Demographic Transition*, Arthur Campbell (1974) argued that post–Second World War fertility fluctuations must be explained by factors other than the long run factors associated with industrialization and "modernization". Campbell called for a focus on determinants that could account for fertility fluctuation, and Richard Easterlin (1978) identified business cycles and fluctuating cohort size as promising factors.

While both of these arguments have substantive plausibility, neither fit well recent patterns of United States fertility. The past two decades show no evidence of fertility decline, as Bumpass would have predicted. Neither do fertility trends in the 1980s and 1990s suggest strong cyclical determinants.

A third perspective is, I believe, more plausible, accurate and useful. This perspective views neither secular nor cyclical factors as deterministic, but as conditioned by flexible and manipulable features of social context. Ongoing

struggles among competing interest groups largely determine the features of this social context. This later perspective stresses the *contested and indeterminate* nature of social change. There are numerous examples of this line of argument. For instance, Samuel Preston (1984) argued that public-policy decisions conditioned the consequences of United States demographic change (i.e., increasing numbers and proportions of elderly Americans) for children and the elderly.[2] Similarly, Ronald Rindfuss (1991) has stressed adaptive changes in the United States social context, like the greater availability of childcare, which condition the effect of secular forces (such as increasing female labour force participation) on the fertility rate.

In the first part of this paper it was stated that particular, contemporary features of United States fertility are not required by societal survival, by biology, or by the macro-features of industrialized societies. What then does account for the emergence of this particular pattern? The answer will require more than a fertility theory; it will require a theory of family change. Understanding family change requires a theory of social change. This social change theory should be neither directional nor deterministic (moving beyond secular and cyclical theories). Rather, it should stress the contested and indeterminate nature of social change.[3] Take the following five questions:

Will abortions become easier to obtain over the next decade?[4]

Will public support for children (via health care and education) be reduced?[5]

Will the immediate and long-term economic prospects of young males improve compared with those of young females?[6]

Will there be an infusion of governmental support for childcare that could ease the tension between work and family?[7]

Will there be a reduction in the degree of residential segregation?[8]

While the answer to each question could be linked to a prediction of fertility change, the issues raised are quite broad. Different segments of the society have different stakes in these answers. The ultimate "winners" of these struggles are indeterminate. The resources of the combatant interest groups are not equal, and future events (secular and cyclical) can shift resources in unpredictable ways that empower one group vis-à-vis another. No one issue is likely to be decisive in terms of maintaining replacement level fertility. Instead, public policy decisions, and elements of cultural and social change constitute the fabric of society, pro- or antinatalist.

Conclusion

The major features of the contemporary United States fertility pattern have been in place for at least 15 years: modest levels of childlessness, the initiation of childbearing across a broad age range, a modest number of one-child families, few large families, substantial non-marital childbearing, and substantial differentials across socio-economic and racial/Hispanic origin populations. None of these features appears anachronistic and together they produce a level

of fertility that approximates the replacement level. Of course these features could change—they could change substantially in response to dramatic period events. Such changes are by nature unpredictable. Fertility could also change as public policy and other changes create environments more or less pronatalist. A main argument has been that below-replacement fertility is not an inevitable consequence of economic development. Economic development and contemporary institutions can accommodate replacement level fertility. The major challenge for the United States is not a deficit in the number of children, biological replacement, but deficits in the social investments in children, an issue of substantial concern in the United States (see Preston, 1984).

Notes

[1]Providing new societal members to replace ageing ones is clearly only one necessary condition for societal survival (e.g., biological replacement). Further, I acknowledge the important distinction between "biological replacement" and "social replacement or reproduction". The latter is linked to the *social* role of parent and other institutional arrangements that socialize new societal members.

[2] Preston's (1984) address did not deal primarily with fertility but with the changing economic well-being of America's children and the elderly. He argues that Malthusian expectations that larger numbers of elderly and smaller numbers of children would disadvantage the former and advantage the latter have not materialized. Public policies provides an explanation: government expenditures on the elderly increased dramatically compared to those directed primarily at children.

[3]Some of these ideas were developed or refined in collaboration with Ronald Rindfuss and Gray Swicegood and some are included in our book *First Births in America*, chapter 10.

[4]This review has documented the impact of abortion on fertility. Limiting abortion would certainly increase fertility.

[5]Public support for children reduces their cost to parents and thus should encourage fertility.

[6]Increasing the economic advantages of men in the labour market vis-à-vis women would likely encourage a division of labour more conducive to childbearing. Women's opportunity costs of childbearing would be reduced. See Oppenheimer, 1994.

[7]Rindfuss (1991) makes the argument that increased availability of childcare would reduce the conflict between women's family and work roles. Increased fertility would be a likely result.

[8]Brewster (1994a, b) directly links high rates of residential segregation to higher rates of teenage childbearing among African Americans.

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