

**Synthesis of National Monographs
on
Population Ageing**

Jacques Légaré, George C. Myers & Léon Tabah



CICRED
Paris
FRANCE



INIA
Valletta
MALTA

1993

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Published by the International Institute on Aging (United Nations – Malta)

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*Jacques Légaré, George C. Myers & Léon Tabah
Synthesis of National Monographs on Population Ageing
ISBN 92-9103-027-9*

*Set by the International Institute on Aging (United Nations – Malta)
Design and Typesetting: Sharon Vella*

Printed in Malta by Union Print Co. Ltd., Valletta, MALTA

Foreword

This is a synthesis of a series of country monographs on "the demographic and socio-economic aspects of population ageing", a result of a long collaborative effort initiated in 1982 by the Committee for International Cooperation in National Research in Demography (CICRED). The programme was generously supported by the United Nations Population Fund (UNFPA) and various national institutions, in particular the Université de Montréal, Canada, and Duke University, U.S.A. Moreover, the realisation of this project has been facilitated through its co-sponsorship with the International Institute on Ageing (United Nations-Malta), popularly known as INIA.

There is no doubt that these country monographs will be useful to a large range of scholars and decision-makers in many places of the world. The monographs are the expression of the great dedication of the researchers participating in the endeavour and of their Coordinator, George C. Myers, Professor at Duke University. We would like to congratulate them for such an achievement.

The present synthesis has been co-authored by:

- Jacques Légaré: Demographic aspects of the ageing process - past and future trends.
- George C. Myers: Health aspects of the ageing process.
- Léon Tabah: Economic and social aspects of the ageing process.

It is based on the following monographs available at mid-1993:

Argentina	: United Nations Population Division
Australia	: Dr. Ron Rowland
Belgium	: Mrs Dominique Remy (still in preparation)
Canada	: Prof. Bertrand Desjardins
China	: Prof. Wu Cangping and Prof. Du Peng
Cuba	: Prof. Raul Hernandez Castellon
Finland	: Dr Jarl Lindgren
France	: Ms Joëlle Gaymu
Guatemala	: Prof. Jorge Arias De Blois
Hungary	: Dr Gabriella Vukovich
Italy	: Dr Antonella Pinelli (in print)
Israel	: Dr Zvi Eisenbach and E. Sabatello
Kerala	: United Nations Population Fund
Malta	: Mr. Reno Camilleri
Mexico	: Mr. Roberto Ham-Chande (still in preparation)
Morocco	: United Nations Population Fund
Poland	: Dr. Ewa Fratczak
Quebec	: Prof. Hervè Gauthier and Prof. Louis Duchesne (in print)
United Kingdom	: Prof. Anthony Warnes
United States of America	: Dr. Cynthia M. Taeuber

As stated in the introduction by George C. Myers, the programme would not be possible without the tenacious efforts of Jean Bourgeois-Pichat, who was the Chairman of CICRED from 1972 to the 15th April 1990, the date of his death. In remembrance of what he has done, we dedicate this series to his memory.

Léon TABAH
President of CICRED

Alfred GRECH
Director of INIA

INTRODUCTION

George C. Myers, Ph.D.
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The decade of the 1980s heralded the *coming of age*, with worldwide attention to population aging and its implications for societal development and the well-being of older persons. The appearance of this series of national monographs on the demographic features of population aging attests to the vigorous research activity that has occurred recently within both developed and developing countries. The series fulfills a main goal of the International Program on Population Aging, initiated in 1982 by the Committee for International Cooperation in National Research in Demography (CICRED) based in Paris, France. The inspiration for the creation and maintenance of the lengthy effort is due primarily to the President of CICRED, the world-renowned demographer Jean Bourgeois-Pichat. Our esteemed colleague provided the basic formulation for the field of the demography of aging with his primary contributions to the now classic United Nations volume on *The Aging of Population and Its Economic and Social Implications*, published in 1956. The past 35 years have seen ample fulfillment of the message conveyed in that study:

... it is reasonable to expect a continuation of the aging process among populations both economically and demographically advanced. With regard to the under-developed countries... the aging process seems, however, to have begun, and although accurate forecasting is difficult, this trend will likely become accelerated in the more distant future.

An examination of these trends toward population aging, its determinants and implications for countries at different levels of social and economic development served as the impetus for the international research effort.

The CICRED project held its initial meeting in Montebello, Canada in 1983. The meeting drew 45 participants from 20 countries who decided upon three main objectives for the project. Subsequent conferences were held in Florence, Italy in 1985 and at Duke University, in Durham, North Carolina in 1988, which enabled the participants to meet and discuss progress in achieving the following goals:

1. A sound database of national statistics should be developed to capture the dynamic aspects of the rapid growth and increasing proportions of the older population throughout the countries of the world.
2. Demographic centers in a large number of countries should be encouraged to undertake a series of systematic studies, which would provide information not only on population aging and its main determinants, but also the societal implications of these demographic changes.
3. Results of these research investigations should be presented in the form of national monographs, which would be published in an integrated series.

The systematic collection of national statistics, it was agreed, would provide a much-needed data source for the assessment and evaluation of older populations in countries around the world. A set of model tabulations was envisioned to capture the historical changes in population aging as well as projections of future developments. Data were to be drawn from national censuses for the most part, particularly the round of 1980 censuses that had been recently conducted. Especially important would be more detailed age/sex breakdowns within the older population to aid in understanding the *diversity* of social, economic and health characteristics of these persons.

The participation of a large number of demographic centers was sought to systematically obtain data on a broad range of topics. These included the life conditions of older persons with respect to dimensions such as family and kin, economic, housing, health, and culture. Also deemed important was how these conditions might vary by geographic regions within countries, especially between rural and urban areas. The second conference of national representatives that was convened in Florence, Italy in 1985 provided an opportunity to further elaborate on the research objectives and to coordinate the national efforts. To structure the preparation of national monographs, a comprehensive chapter outline was prepared before the Florence meeting, along with a set of suggested tables and graphs.

The third meeting at Duke University in Durham, North Carolina in 1988 was attended by 40 persons. Several completed monographs, as well as others in progress, were discussed at the meeting. This enabled participants to assess the overall project and draw conclusions about the rapid changes in population aging taking place throughout the world. A positive collaborative arrangement with the newly-established United Nations International Institute on Aging (INIA) in Malta has now made the monograph series a reality. A fourth meeting was held in INIA in Malta with the authors of the monographs on 16-18 December 1991 with three items on the agenda: (1) discussion of the experience acquired; (2) discussion of a synthesis prepared by Prof. J. Légaré (on demographic variables), Prof. George C. Myers (on health aspects) and Prof. Léon Tabah (on economic and social aspects); (3) debate on future activities. It was proposed to focus future activities on the role of the family for the elderly.

Country monographs, such as those in the series, are first, but necessary, steps towards understanding the main descriptive aspects of population aging and its major determinants and consequences. Such information forms the basis for future studies that

can periodically update information on a country's aging population structure, as new census and supplementary data become available. The effective achievement of comparative, cross-national investigations, however, will continue to require attention to standardized measurement and reporting of the main parameters of the aging process. So too, the conceptual framework and analytic procedures for examining intra-country and inter-country patterns will need to be more systematically advanced. Concrete steps can be taken, for example, in drawing detailed demographic, social and economic data for older age and sex groups from the round of censuses undertaken in 1990 and the years ahead. There also is a great need for more detailed tabulations by geographic and regional classifications within countries that will facilitate further research. These goals seem to be well within the grasp of researchers and international organizations.

However well these initial efforts have been established, further steps are needed toward more in-depth research. A second stage of research was explicitly recognized by those responsible for the CICRED project. The original research program envisioned both a core set of activities – which has largely been realized in the country monographs – and another set of more specialized research efforts. In hindsight, the agenda was probably too ambitious at the time, but certainly seems feasible for the decade ahead. Let us examine briefly the types of studies of importance in several domains.

Demographic. These might include:

- a) cohort studies of the changing size and composition of generational groups as they pass through the life course and, particularly, as they reach old age and beyond;
- b) studies of oldest-old populations, which consist of persons, often predominantly female, who are subject to high risks of disablement that requires external support from families and state welfare systems;
- c) research on geographical/locational patterns of older persons and how those are influenced by migration of both younger as well as older persons;
- d) assessment of the quality of data used in research as a primary requirement for sound knowledge.

Social and Economic. Among the many topics of importance, several priority areas can be noted:

- a) studies of changing family and kinship structures from the standpoint of demographic factors (e.g., survival risks) and behavioural patterns (e.g., marriage and divorce);
- b) following from this, studies of the living arrangements of older persons, which have profound implications on the life conditions of older persons; housing requirements; and the support systems often necessary for their maintenance;
- c) examination of the economic conditions of older persons in sufficiently greater detail for assessing the relative importance of wealth and assets, income from employment, social welfare payments (e.g., social security payments upon retirement), intergenerational flows of monetary resources, and consumption patterns of older persons;
- d) studies of the collective attitudes of both young and older generations towards societal developments emerging from the aging of populations, including political participation.

Health. Concerted attention also needs to be directed toward a broad range of health factors involved in the process of individual aging, which includes disease onset, disability and death. Major issues include:

- a) the issue of whether prolongation of life expectancy has been accompanied by associated extension of life years free of major chronic diseases and disabilities;
- b) examination of long term care of older persons and the financial and emotional costs of such care on the recipients and providers (often families, but increasingly the state);
- c) important differentials in the health status of older persons that exist with respect to sex, socio-economic status, race and ethnicity and residence.

The research topics that have been suggested confront major issues that are likely to shape societal policies and programs in the future. To effectively link research to policy will require more explicit acknowledgement that findings must be incorporated into models that can help forecast further developments. To do so, the research is likely to be multidisciplinary in focus, capable of yielding quantitative results that are national and regional in scope, and designed to examine dynamic perspectives. There is clearly a need for both synchronic (cross-sectional) and diachronic (longitudinal) studies. A fundamental premise of the CICRED project, and one clearly shared by INIA and other UN organizations, is that cross-national, comparative investigations can enable individual countries to assess the implications of population aging more effectively if the phenomenon is seen as world-wide and shaped at particular points in time by the progression of the demographic transition within countries with varied social and cultural conditions. Our knowledge about ourselves is incremented by knowing more about our neighbours. This is as true for developing countries beginning to experience the aging of their populations as it is for developed countries that have been involved in the process for more protracted periods of time.

The CICRED project has served an important function in stimulating the preparation of these country monographs, but the successful completion of this project mainly derives from the voluntary efforts of researchers who have collaborated in these efforts.

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Synthesis of National Monographs
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1. Introduction

This Synthesis is based on the series of country monographs on Population Ageing, prepared under the auspices of the Committee for International Cooperation in National Research in Demography (CICRED), with the generous support of the United Nations Population Fund (UNFPA) and various national institutions, and co-sponsored by the International Institute on Ageing (INIA). It embraces a large spectrum of living conditions of the elderly according to demographic trends, political systems and level of development in a number of countries - Australia, Canada, China, Cuba, Finland, France, Guatemala, Hungary, Israel, Malta, Poland, Quebec, United Kingdom and the United States of America. The studies undertaken in Argentina, Kerala (India) and Morocco, on behalf of the United Nations, are also included. CICRED commissioned monographs for Belgium, Italy and Mexico are still in preparation.

It would be presumptuous to claim that the issue of ageing in the world as a whole - its demographic, health and socio-economic aspects - is covered by the present study. A considerable number of developing countries are not represented, in particular the whole of Africa and large countries in other regions, such as Brazil, Indonesia, Thailand, India (since the State of Kerala is very specific), etc. Some of these countries are experiencing rapid demographic transition and are therefore entering upon a process of fast population ageing. Even important developed countries, such as Japan, are not participating in this joint research.

Nonetheless, in spite of these reservations, this document attempts to provide a synthesis of cross-national, comparative investigations which, in the words of George C. Myers, the Coordinator of the present series of monographs, "can enable individual countries to assess the implications of population ageing more effectively if the phenomenon is seen as world-wide and shaped at particular points in time by the progression of the demographic transition within countries with varied social and cultural conditions. Our knowledge about ourselves is incremented by knowing more about our neighbours. This is as true for developing countries beginning to experience the ageing of their populations as it is for developed countries that have been involved in the process for more protracted periods of time".

2. Demographic Aspects of the Ageing Process - Past and Future Trends - by Jacques Légaré

2.1 The Evolution in the Total Numbers and Proportions of Old Persons

Today most countries have to face a challenge of major importance in the form of the ageing process of the population. This is referred to as a world-wide inescapable occurrence or problem. The increase in the total numbers and proportions of older people is mainly due to the decline in fertility and to the decrease recorded in the death rate (Coale, 1956; Caselli and Vallin, 1990). The effect produced by the combination of these elements, in little less than a century, was to modify considerably the population structure by age.

There is no doubt that the world population is ageing. The phenomenon emerges clearly from the estimates and projections drawn up by the Population Division of the United Nations (Table 2.1). Within less than a century, the number of persons aged 60 and over will multiply by 6. From 200 million in 1950, it is estimated that they will reach one billion 200 million in the year 2025.

Table 2.1 Estimate and projection of the number of persons aged 60 and over and their proportion in the total population, the world, more or less developed regions and countries, 1950-2025 (in thousands)

Regions or countries	Population aged 60 and over					Proportion in total population				
	1950	1970	1990	2010	2025	1950	1970	1990	2010	2025
The World	200604	307893	488756	764435	1205338	8.0	8.3	9.2	10.2	14.2
More developed regions	94631	148818	206124	266523	344608	11.4	14.2	17.1	20.4	25.5
Less developed regions	105974	159073	282631	497910	860730	6.3	6.0	6.9	8.4	12.0
Africa	11497	17995	30872	57326	101448	5.2	5.0	4.8	5.0	6.4
Argentina	1208	2571	4244	5671	7172	7.0	10.7	13.1	14.1	15.8
Canada	1556	2422	4169	6214	9054	11.3	11.4	15.7	20.6	28.4
China	41572	56786	101154	169114	288882	7.5	6.8	8.9	12.1	19.1
Finland	407	653	909	1208	1484	10.2	14.2	18.3	23.5	29.0
France	6790	9168	10639	13141	16442	16.2	18.1	19.0	22.1	27.2
Poland	2045	4159	5670	7218	9983	8.2	12.8	14.8	17.0	22.2

More developed regions consist of North America, Japan, Europe, USSR, Australia and New Zealand. The least developed regions are formed by Africa, Latin America, Asia (with the exclusion of Japan), Melanesia and Micronesia-Polynesia.

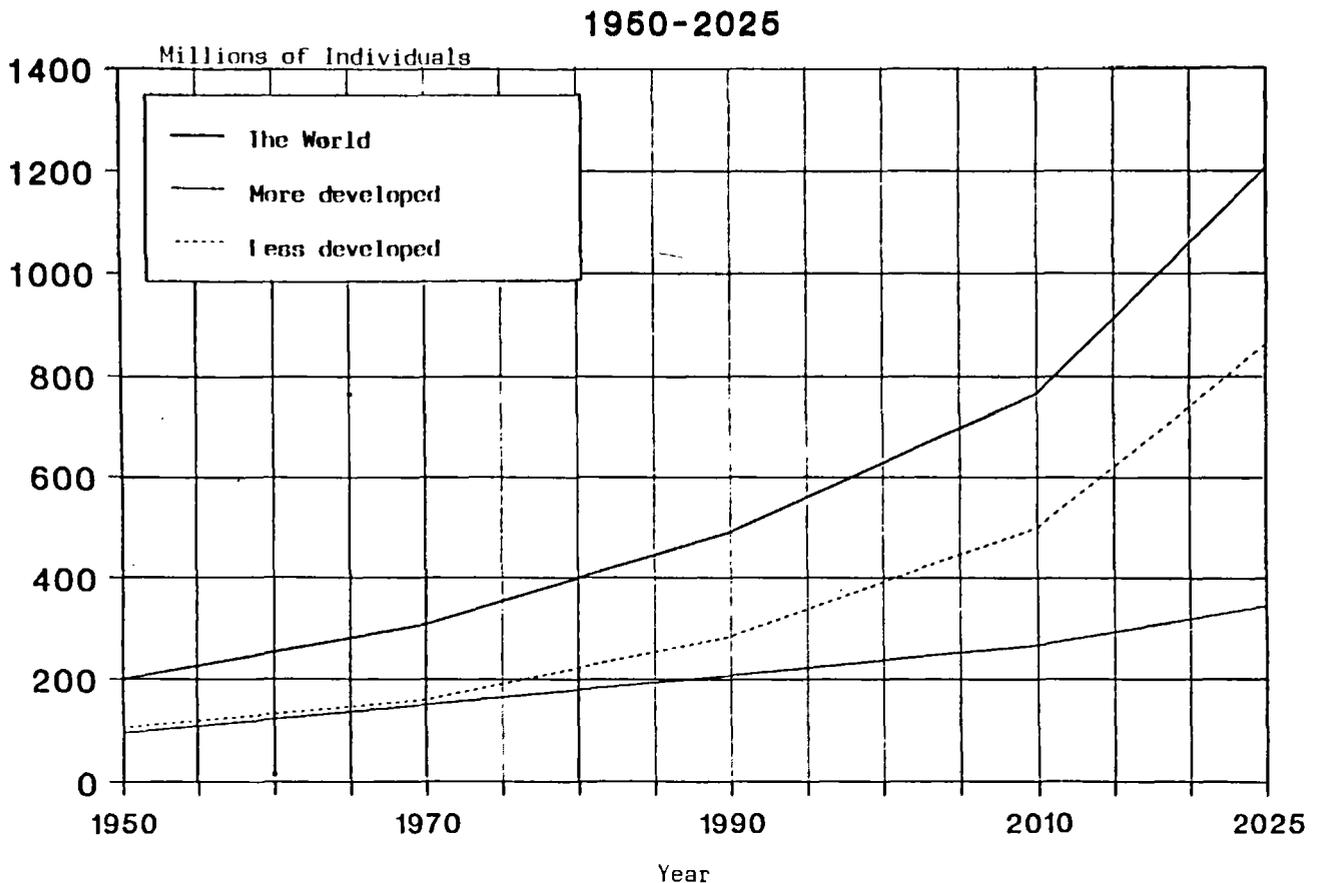
Source: UNITED NATIONS: *The Sex and Age Distributions of Population. The 1990 Revision of the United Nations Global Population Estimates and Projections*. Department of International Economic and Social Affairs, New York, 1991, p. 391 (Population Studies, no 122). (Average variant)

Although this ageing process is an international phenomenon, it does not affect all the regions with the same intensity or the same rhythm. As a whole one can distinguish two demographic systems, that of the more developed regions (industrialised countries) and that of less developed regions (developing countries).

The slow and regular increase in total numbers observed between 1950 and 1990 will be much greater during the next 35 years (Figure 2.1). The strong increase in the number of persons in the world aged 60 and over reflects the situation prevailing in developing countries. We notice that the greatest part of mankind lives in these regions. Thus, the increase in the total number of old persons in less developed regions is clearly on a superior scale to that of more developed regions where the number of old persons will be multiplied by a factor of 3.6 between 1950 and 2025. During the same period, the total number of persons aged 60 and over throughout the Third World will be multiplied by 8. On the African continent, the number of persons that fall into this category of age will be 9 times greater than in 1950. In China, they will number more than 300 million at about the year 2030, a year where they will have almost equalled the number of persons in the 0-14 age-group (Wu Cangping and Du Peng).

Thus more than 70% of old persons will be in these developing regions in 2025 whereas in 1950 they represented 53% of the group of persons aged 60 and over in the world.

Figure 2.1 Evolution of the 60-year old and over population in the world and more or less developed countries, 1950-2025



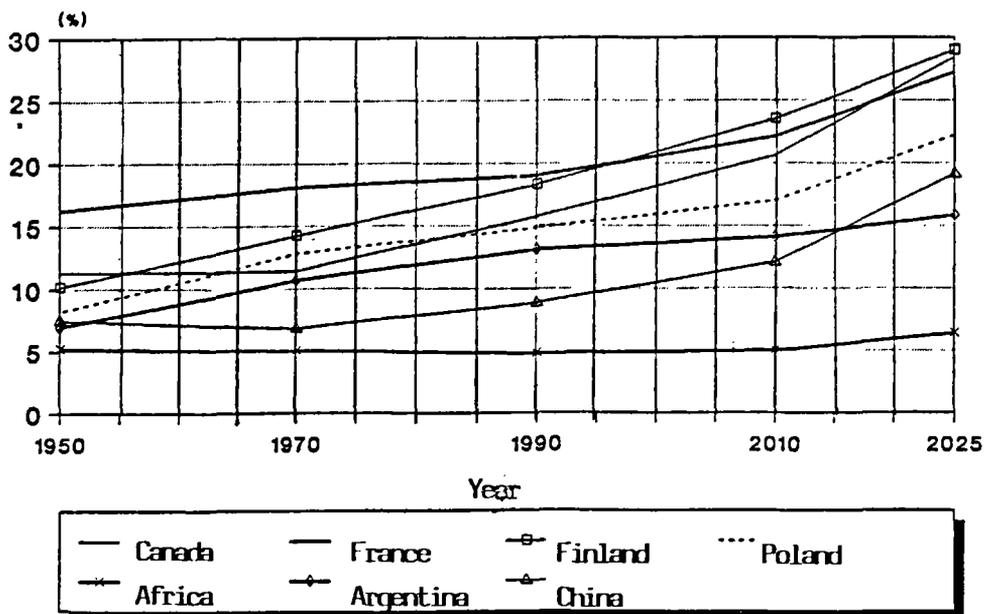
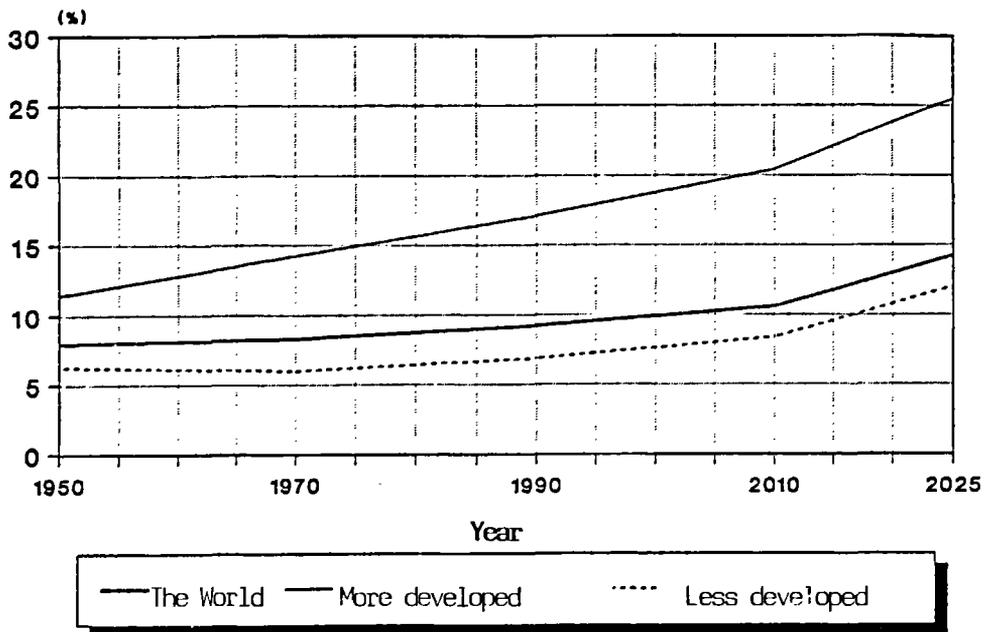
Source: See Table 2.1

This increase in the number of old people is explained by the progress achieved during the 19th and 20th Centuries in the fields of medicine and health which brought about a decrease in the death rate on the world scale and a rapid increase in the population. As the imbalance thus created between the rates of fertility and death could not last longer, a new demographic system with a weak death and fertility rate is establishing itself. This change from one system to the other can be interpreted as a demographic transition that is necessarily accompanied by a transition of the structure by age.

An increase in the proportion of persons aged 60 and over of the total population (Figure 2.2) corresponds to the evolution in total numbers. The growth of this proportion in the world follows the rhythm observed in the developing regions: it was weak till 1990, then rapid for the rest of the period. From 6.3% in 1950 the proportion of persons aged 60 and over in less developed countries will increase to 6.9% in 1990 and 12% in 2025, a level already reached by developed countries in 1950. In the latter countries, the proportion of persons aged 60 and over will have more than doubled within the period; a quarter of the population will be aged 60 at least in 2025. On a world scale, the proportion of persons aged 60 years and over in 2025 (14.2%) will correspond to the level reached in 1970 in developed regions. The differences between the regions and countries must be considered as time lags in the stages and rhythms of the demographic transition.¹

1. Jean-Claude Chesnais, 1986. *La transition démographique. Étapes, formes, implications économiques*. Paris, PUF, 1986, 582 p. (Collection "Travaux et documents de l'ITNED", no 113).

Figure 2.2 Proportion of persons aged 60 and over in the total population, 1950-2025



Source: See Table 2.1

The evolution of the proportion of persons aged 60 and over in the total population of Canada, France, Finland, Poland and, in a lesser measure, Argentina, corresponds to that observed for developed countries as a whole. On the African continent, the strong decline in the death rate of children together with a high rate of fertility has resulted in keeping the relative number of persons aged 60 and over on a weak and constant level. It will only increase at the very end of the period, between 2010 and 2025. Whilst allowing the fertility rate to decrease and be stable, the birth control policy practised in China is bringing about an important growth in the proportion of those aged 60 and over in its population. From a structure by age similar to that in Third World countries at the beginning of the period, in 2025 the ageing process of the Chinese population will be comparable to that in a lot of developed countries. The same phenomenon can be observed in Kerala, a southern Indian state where the proportion of persons aged 60 years and over will very likely pass from 9% in 1991 to 18% in 2026. This ageing process will be the result of a narrowing at the base of the pyramid up to 2006. From then onwards, it is mainly at

the top of the pyramid that the ageing process will continue (L. Gulati).

2.2 Evolution of Various Indicators of the Ageing Process of Populations

Besides the numbers and proportion of old persons, several demographic indicators characterising the composition by age of the population bear witness to the ageing process.

After a slight decrease between 1950 and 1970, the median age of the world population and of the least developed regions rises progressively to reach thirty in 2025 (Table 2.2). In the most developed regions, reflecting the relative importance of old people in the population as a whole, median age has not stopped increasing since 1950. In 2025 it will be ten years higher than that estimated for the whole of the planet. The median age of the African population remains almost constant up to 2010, then it will increase by about four years during the last fifteen years to exceed twenty in 2025. Argentina and France are rare countries where the median age will not have increased by more than 10 years during the period studied.

Table 2.2 Evolution of median age, the world, more or less developed regions and countries, 1950-2025

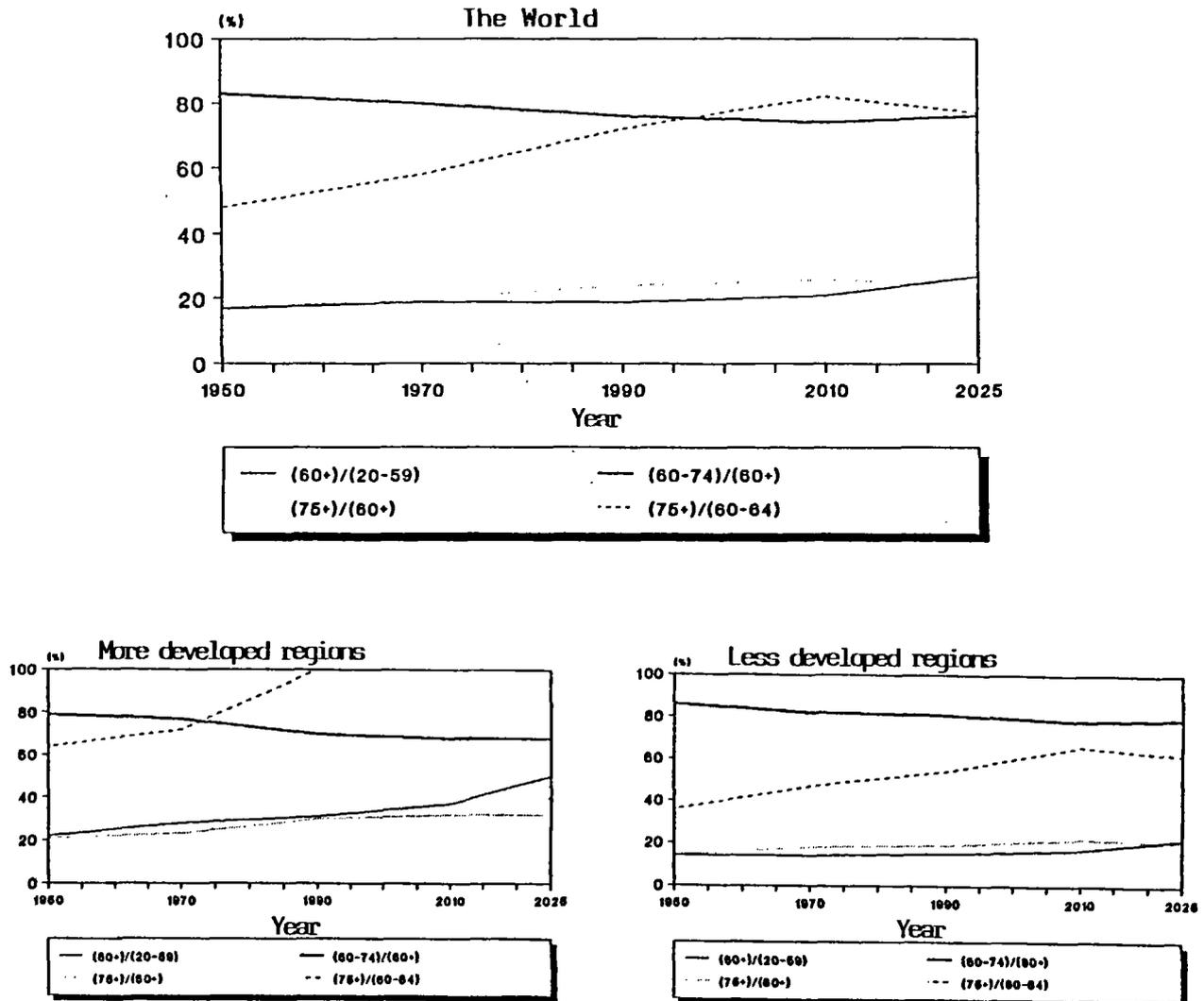
	1950	1970	1990	2010	2025
The World	23.4	21.6	24.2	27.6	31.1
More developed regions	28.2	30.1	33.7	38.5	40.8
Less developed regions	21.2	18.9	22.0	25.5	29.6
Africa	18.6	17.6	17.4	18.6	22.2
Argentina	25.7	27.4	27.8	30.0	32.6
Canada	27.7	26.0	33.3	40.3	42.8
China	23.9	19.7	25.7	34.2	37.9
Finland	27.7	29.6	36.3	41.7	43.5
France	34.5	32.3	34.9	39.8	42.2
Poland	25.8	28.2	32.2	34.8	38.2

Source: UNITED NATIONS: *World Population Prospects 1990*, Department of International Economic and Social Affairs, New York, 1991, p. 607 (Population Studies, no 120).
(Average variant)

In Poland, data according to the place of residence show us that median age has remained a little bit higher in urban environment than in rural environment, even if the difference tends to lessen since 1965 (E. Fratzak).

One of the consequences of the ageing process, which is often the main object of fears associated with the growth of the number of old persons in our societies, is the increase in the number of "old people" still dependent on other persons in the labour market. The evolution of the indicator of dependency that represents the relationship between old persons and active persons can only provoke these concerns (Figure 2.3). The difference in the relationship corresponds perfectly to that of the median age of populations and this no matter in which region or country (Table 2.3).

Figure 2.3 Evolution of the ageing process of the population according to various indicators, 1950-2025



Source: See Table 2.3

The analysis of the structure by age of the old population allows us to note a differential evolution in total numbers according to age. We observe, for all regions, a progressive decrease in the relative importance in the number of “young old people” in the aged population $(60-74/60+)$ as a whole to the advantage of the proportion of 75-year olds and over. The decrease in death rates, observed at first in young age, has been mostly recorded in the most advanced ages in life. Both in the most developed regions and as well as in those that are developing, the number of the oldest (75 years old and over) will almost double between 1950 and 2025 when compared to the 60-64-year old persons. On the world scale, just as in the Third World countries, the difference in the numbers of persons 75 years old and over and those who are 60-64 years old (the number of the latter was twice greater in 1950) will be reduced by half at the end of the period. Only the African continent does not present such an important evolution in its population of very old persons. In the most developed countries, persons who are 75 years old and over are today as numerous if not more than the 60-64-year old persons. The ageing process of the population shows itself more and more through a “bulging” at the top of the age pyramid.

Table 2.3 Evolution of various indicators in population structure, the world, more or less developed regions and countries, 1950-2025 (%)

	Dependency Ratio (60+) / (20-59)					"Young old persons" (60-74) / (60+)				
	1950	1970	1990	2010	2025	1950	1970	1990	2010	2025
The World	0.17	0.19	0.19	0.21	0.27	0.83	0.80	0.76	0.74	0.76
More developed regions	0.22	0.28	0.31	0.37	0.50	0.79	0.77	0.70	0.68	0.68
Less developed regions	0.14	0.14	0.15	0.17	0.22	0.86	0.82	0.81	0.78	0.79
Africa	0.12	0.12	0.12	0.12	0.13	0.81	0.81	0.83	0.84	0.85
Argentina	0.13	0.21	0.27	0.27	0.30	0.84	0.81	0.75	0.71	0.71
Canada	0.22	0.23	0.28	0.37	0.57	0.79	0.73	0.71	0.69	0.68
China	0.15	0.16	0.17	0.21	0.34	0.88	0.80	0.80	0.76	0.78
Finland	0.19	0.27	0.32	0.44	0.59	0.80	0.81	0.70	0.71	0.66
France	0.30	0.37	0.35	0.41	0.55	0.76	0.74	0.66	0.65	0.65
Poland	0.16	0.26	0.28	0.31	0.43	0.80	0.81	0.73	0.70	0.73
	"Old persons" (75+) / (60+)					Ratio of replacement (75+) / (60-64)				
	1950	1970	1990	2010	2025	1950	1970	1990	2010	2025
The World	0.17	0.20	0.24	0.26	0.24	0.48	0.58	0.72	0.82	0.77
More developed regions	0.21	0.23	0.30	0.32	0.32	0.64	0.72	1.02	1.16	1.24
Less developed regions	0.14	0.18	0.19	0.22	0.21	0.36	0.47	0.54	0.66	0.62
Africa	0.15	0.16	0.17	0.19	0.19	0.40	0.43	0.46	0.52	0.52
Argentina	0.16	0.19	0.25	0.29	0.29	0.40	0.54	0.81	1.00	1.06
Canada	0.21	0.27	0.29	0.31	0.32	0.66	0.86	1.06	1.02	1.26
China	0.12	0.20	0.20	0.24	0.22	0.31	0.54	0.57	0.72	0.66
Finland	0.20	0.19	0.30	0.29	0.34	0.57	0.53	1.08	0.88	1.47
France	0.24	0.26	0.34	0.35	0.35	0.81	0.91	1.25	1.21	1.47
Poland	0.20	0.19	0.27	0.30	0.27	0.55	0.53	0.84	0.92	1.13

Source: UNITED NATIONS: *The Sex and Age Distributions of Population. The 1990 Revision of the United Nations Global Population Estimates and Projections*, Department of International Economic and Social Affairs, New York, 1991, p. 391 (Population Studies, no 122). (Average variant)

The composition of the aged population according to sex shows an imbalance to the advantage of women. The latter's number reaches a bigger proportion in old age and they live longer. Between 1950 and 1990, the ratio of male representation calculated for the whole of the aged population in the world has remained stable with about eight men to ten women (Table 2.4 and Figure 2.4). In the course of the next decades, it will only increase slightly. The phenomenon of over-representation of women within the old population is however more and more marked as one advances in age.

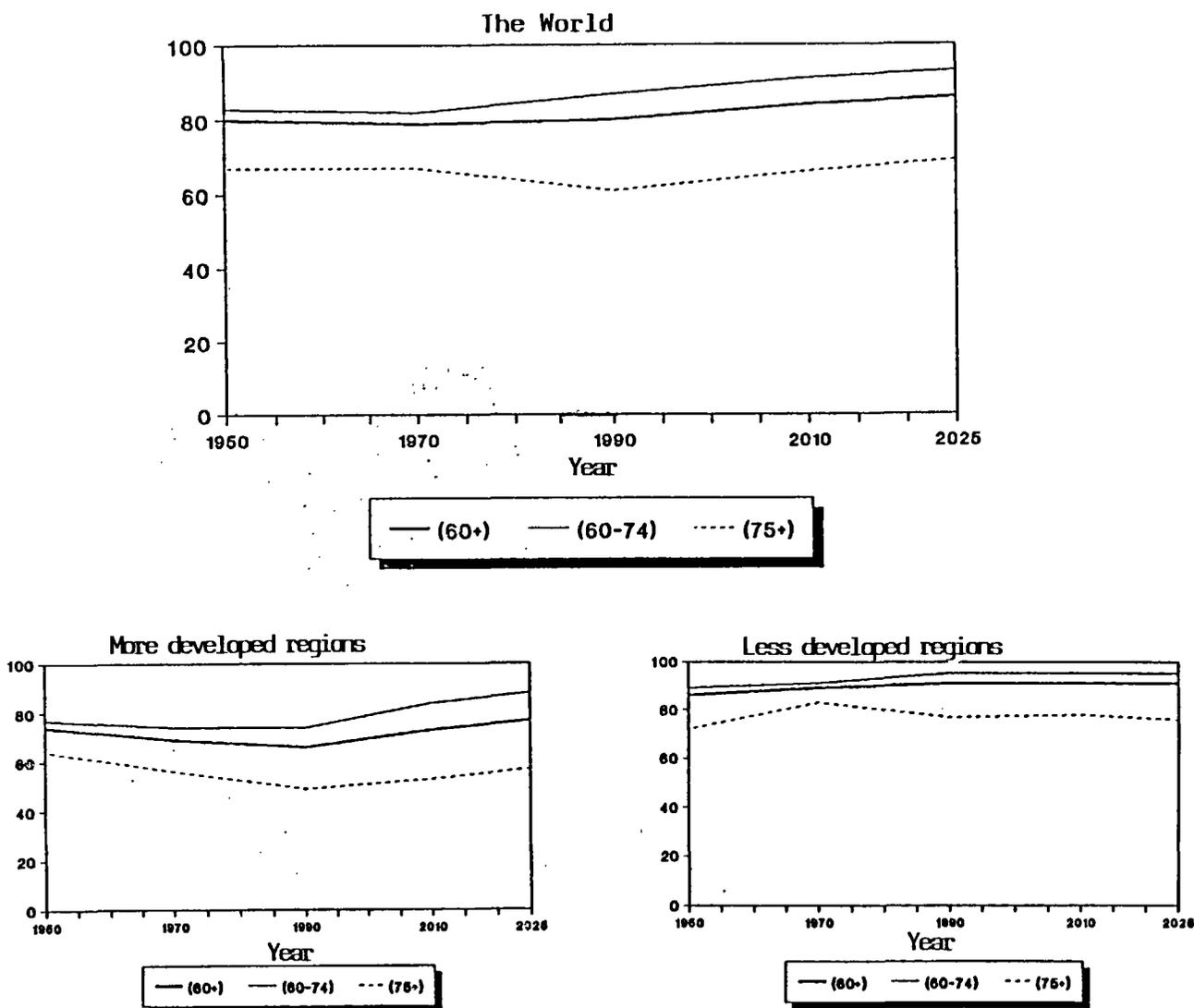
In the population aged between 60 and 74, the relative importance of men in relation to women becomes progressively better, favouring a balance in 2025. On the other hand, in the population over 75 years, the number of women becomes considerably higher, the difference in male and female total numbers being much greater. Today the number of women is almost twice that of men. Although the estimates for the next 35 years allow for a slight reduction in the difference, women will still predominate in the advanced years of life; the majority of old people will be women.

Table 2.4 Evolution of male ratios by large age groups for old persons, the world, more or less developed regions and countries, 1950-2025 (for every 100 females)

	(60+)					(60-74)					(75+)				
	1950	1970	1990	2010	2025	1950	1970	1990	2010	2025	1950	1970	1990	2010	2025
The World	80	79	80	84	86	83	82	87	91	93	67	67	61	66	69
More developed regions	74	69	66	73	77	77	74	74	84	88	64	56	49	53	57
Less developed regions	86	89	91	91	91	89	91	95	95	95	72	83	77	78	76
Africa	81	83	84	84	87	83	85	86	87	90	72	72	73	74	75
Argentina	103	91	78	76	76	109	94	83	84	84	78	78	64	59	60
Canada	106	87	78	79	81	110	92	86	90	91	94	75	60	59	61
China	80	81	91	95	93	85	82	98	101	98	53	79	67	76	77
Finland	64	65	62	75	76	67	69	72	88	88	54	48	44	49	56
France	67	68	71	75	76	70	78	83	89	87	59	46	51	54	57
Poland	68	70	66	70	74	70	74	73	79	83	60	52	49	51	54

Source: UNITED NATIONS. *The Sex and Age Distributions of Population. The 1990 Revision of the United Nations Global Population Estimates and Projections*, Department of International Economic and Social Affairs, New York, 1991, p.391 (Population Studies, no 122). (Average variant)

Figure 2.4 Evolution of male ratios among old persons, 1950-2025 (for every 100 females)



Source: See Table 2.4

During the last forty years, the ratio of male representation has been going down in the most developed regions as a whole and this trend is seen in any age group. Till the year 2025, one foresees that the differences in total numbers between the sexes will be slightly reduced while clearly continuing to favour women. In less developed regions this ratio of total numbers between the sexes does not favour women to the same extent. Between 1950 and 1990, the ratio of males within the population aged between 60 and 74 has increased so as to almost balance out. The level observed today will maintain itself up to 2025. If the number of men in the Third World is much greater within the population aged 75 and more when compared to developed countries, nevertheless women will always make up the majority. After a variation, first rising then falling between 1950 and 1990, the male representation will become stable about 75% during the years to come.

Among the countries studied, the old population of Argentina and that of Canada were represented by a majority of men in 1950. Since then the relative importance of the latter has collapsed and one can expect that the composition of these two populations, according to sex, will correspond to that of developed countries as a whole from the year 2010 onwards.

In Great Britain, the recent evolution in the relationship between the sexes tends towards a balance, though a weak one. Between 1970 and 1990, the male ratio passed from 69 to 72 men for 100 women. The author emphasises that it is among the youngest old people that this difference between the sexes has gone down whilst it has grown among the oldest (A.M. Warnes). In Israel, the high values observed since 1961 in the number of males become more similar to those in developing countries. Thus with persons 75 years old and over, this indicator passes from 83 to 90 in 1972 and to 88 in 1985. It diminishes somewhat up to 81 in 1990, then one foresees that it is stable around 76 between the years 2000 and 2025. These high levels should be attributed, on the one hand, to the high level of male immigration and, on the other hand, to progress recorded over the death rate of "young" old people (Z. Eisenbach and E.F. Sabatello).

2.3 Ways of Life of Old Persons

The division of old persons, on the basis of territorial location, determines in part the distribution of resources in care and services. That is why it is important to know the size of this group in rural and urban surroundings.

In Canada, one notes a bigger and bigger tendency to live in urban surroundings. Between 1951 and 1986, the proportion of old persons has increased from 63% to 78%; the number of women being always superior to that of men in these surroundings (from 6% to 7%). Contrary to what is being observed in Europe, Canadian rural surroundings are no longer the object of over-ageing process: in 1986, persons aged 60 and over amounted to 13.9% of the rural population and 15.5% of the urban population (B. Desjardins).

Generally speaking, the population of Argentina is strongly urbanised; thus, 86% of old persons were found in urban surroundings in 1980. This proportion will increase and projections set the figure at 92% in 2025 (E. Pantelides). In 1987 Israel had already reached this rural/urban distribution with regard to old persons 65 years old and over (Z. Eisenbach and E.F. Sabatello).

In a country such as China, the territorial distribution of old persons differs greatly from the preceding observations. Thus, reflecting the distribution of the total population in 1982, 81% of persons 60 years old and over were found in rural surroundings. The preliminary results of a survey carried out in 1987 show that the overall number of rural population has diminished since 1982 (from 79% to 63%) and suggest a similar evolution with regard to the oldest. Recently, the growth of agricultural productivity has brought about a surplus in manpower and a movement of young adults to the towns in search of work. One can foresee that in the long run, if these people adopt an urban way of life, this will accelerate the ageing process in this environment (Wu Cangping and Du Peng).

The marital state is certainly one of the main determining factors in the way of life of old people. The differential death rate between the sexes and the difference in age between husband and wife show that, in several societies, men and women must face a distinct reality when they reach old age. The case of France is a good illustration of this observation. In 1982 it was in the 70 to 74 age group that widows became as numerous as married women. With men, this situation crops up only when they reach the age group 85 to 89 (J. Gaymu). The results of the analysis of Canadian data in 1981 show a similar pattern (B. Desjardins). In the same way, in France, with persons aged between 80 and 84, one discovers that the number of married men is twice that of widowers whereas the number of widows is almost four times greater than that of married women (J. Gaymu).

The incidence rate of divorce and celibacy is not insensitive to social conditions: more liberal access and changes in lifestyle in the case of the former; secondary effect in the matrimonial market in times of war with regard to the latter. In

Canada one notes that, in their old age, men re-marry more than women and single persons marry less than widowers or divorcees, whatever their sex may be (B. Desjardins).

The marital state of the Chinese population offers certain interesting characteristics when compared to these two western societies. For example, the proportion of single persons, though small in itself, is much greater with regard to old men than to old women. For men it is 2.6% and as little as 0.3% for women. This situation finds an explanation in certain customs attributed to traditional China where poor young men, who did not manage to collect the necessary sum of money to pay for the dowry of a bride and for the marriage expenses, were unable to find a bride. It is mainly in rural regions where traditions are stronger and social contacts more limited by distance that the impact of this practice is felt.

Furthermore, as in the case of the Canadian population, the Chinese population aged 60 and over is composed mainly of married men and widowed women. Divorced people occupy a small proportion of the overall profile (Wu Cangping and Du Peng).

2.4 Death Rate and Ageing Process of the Population

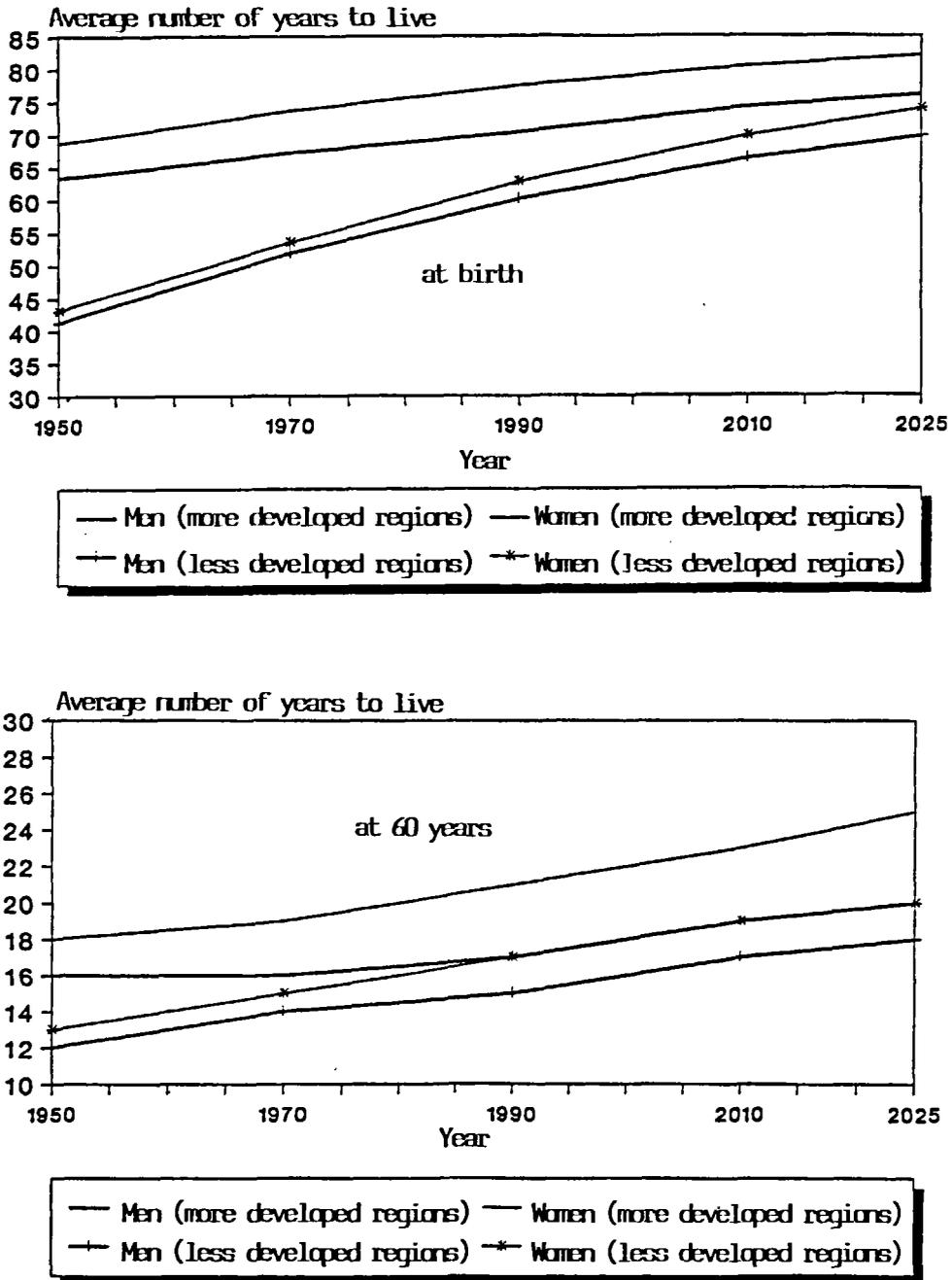
Life expectancy or the average number of years individuals are expected to live at a given age is doubtlessly the most frequently used measure to illustrate the evolution of the death rate and its influence over the ageing process of the population. The rise in life expectancy on the world scale, as a result of the decrease in death rate, has been remarkable since 1950 and will continue up to 2025. This lengthening of life has however been characterised by an increasing difference between the death rates of men and women.

In the most developed regions, between 1950 and 1990, women gained more than eight years at birth and men seven years (Figure 2.5). For the whole period women and men will improve their average number of years of life at birth by 20%. Life expectancy at birth for men will exceed 75 years in 2025 and that of women will reach 82 years. Life expectancy at 60 years² for women has continued to progress since 1950. Today it is estimated to be 21 years, but in 2025 it will reach 25 years, that is, a rise of nearly 40% when compared to 1950. For men, the average number of life expectancy at 60 years will increase by 25% during the same period, rising from 16 years in 1950 to 17 years in 1990 and 20 years in 2025. The differential death rate between the sexes in advanced years favours women more and more; the difference estimated at 2 years in 1950 will grow to 5 years in 2025.

It is interesting to note that the author of the monograph on Great Britain has added a new dimension, namely, that of life expectancy, with or without incapacity, at the age of 65 years. It is reported that there has been a slight growth in life expectancy when the person is not incapacitated in England and Wales between 1976 and 1986, whilst a slight decrease is recorded in the same period in Canada and the United States (A.M. Warnes).

2. Because of the lack of detailed data on life expectancy at different ages, life expectancies at birth have been used as entries in model tables for the death rate to estimate the average number of years of life at 60 years.

Figure 2.5 Life expectancy at birth and at 60 years of age according to sex, more or less developed regions, 1950-2025



Source: See Table 2.5

The decrease recorded in the death rate of children in Third World countries has allowed for improvement of life expectancy at birth in an incredible way between 1950 and 1990, rising by 20 years for women and 19 years for men. One foresees that there will be another regular increase from now to the year 2025. Thus in comparison to 1950, life expectancy at birth in these regions will have progressed by 17% for women and 69% for men. The differential death rate will always be in favour of women; the two year difference in 1950 will have doubled in 2025. In Guatemala, the similar life expectancy of men and women at age 41 around 1950 evolved in such a way that, after four decades, a difference of about 5 years was registered between the sexes. Thus, it is forecast that life expectancy for women and men will be respectively 64.4 and 59.7 years for the period 1985-1990 (J. Arias De Blois).

The breathtaking increases in life expectancy at birth will allow for a substantial reduction in differences observed

between the situation in developing countries and that in more developed countries: from 26 years in 1950 to 8 years in 2025 for women and from 22 years to 6 years for men.

On a lesser scale, life expectancy at age 60 has equally increased from 13 years in 1950 to 17 years at the present day for women and from 12 to 15 years for men. It is foreseen that it will reach 18 years for the latter in 2025 and 20 years for the former, that is, an improvement in comparison with 1950 of 50% and 54% respectively. So the decreases in the death rate have not only occurred in the younger years but also in advanced years.

Of all countries studied, the ageing process of the Chinese population is the most significant. Like Third World countries in 1950, the demographic profile of China changed radically during the last forty years and will resemble much more that of a developed country in 2025 (Table 2.5). Life expectancy at birth has rapidly increased: estimated at 39 years in 1950 for men, it has reached 68 years today and will be 75 years in 2025, that is, an improvement of 91%; from 42 years in 1950 for women, it rose to 71 years in 1990 and is estimated to reach 79 years at the end of the period, that is, an increase of 87%. Men aged 60 in 2025 will be able to hope to live an average of 19 years compared to 16 years at the present day and 13 years in 1950. The improvement in life expectancy at 60 years for Chinese women will be even greater, estimated at 18 years at the present day, an increase of 5 years when compared to the situation in 1950, it will be 21 years in 2025.

In brief, it is to be noted that the evolution in the average number of years to live, at birth and at age 60 in all other countries, is similar to the description made of the situation in more or less developed countries.

Table 2.5 Evolution of life expectancy at birth and at 60 years of age according to sex, the world, more or less developed regions and countries (1950-2025)

	Male Sex									
	at birth					at 60 years of age				
	1950	1970	1990	2010	2025	1950	1970	1990	2010	2025
The World	46.0	54.9	61.8	67.4	70.5					
More developed regions	63.3	67.2	70.3	74.1	76.0	16	16	17	19	20
Less developed regions	41.3	51.9	60.1	66.2	69.6	12	14	15	17	18
Africa	36.3	42.4	50.3	58.3	63.7	12	12	13	15	16
Argentina	60.4	62.8	67.3	69.7	70.7	15	15	16	17	18
Canada	66.8	68.9	73.3	76.0	77.4	16	17	19	20	20
China	39.3	58.8	68.0	72.5	74.9	13	15	16	18	19
Finland	63.2	65.9	71.0	74.5	76.2	16	16	18	19	20
France	63.7	67.9	71.9	75.3	76.8	16	17	18	20	20
Poland	58.6	66.9	67.5	71.4	74.0	15	16	17	18	19
	Female Sex									
	at birth					at 60 years of age				
	1950	1970	1990	2010	2025	1950	1970	1990	2010	2025
The World	49.0	58.2	65.9	71.8	75.4					
More developed regions	68.6	73.7	77.4	80.4	82.1	18	19	21	23	25
Less developed regions	43.1	53.5	62.8	69.7	73.8	13	15	17	19	20
Africa	39.1	45.5	53.6	61.8	67.4	13	14	15	17	18
Argentina	65.1	69.3	74.0	76.5	77.5	17	18	20	21	21
Canada	71.6	75.3	80.3	82.3	83.6	19	20	23	25	25
China	42.3	60.4	70.9	76.1	78.9	13	16	18	20	21
Finland	69.6	73.5	78.8	81.3	82.7	18	19	21	23	25
France	69.5	75.4	80.0	82.3	83.6	18	20	23	25	25
Poland	64.2	73.0	75.5	78.7	80.8	17	19	20	21	23

Sources: Life expectancy at birth: UNITED NATIONS. *World Population Prospects 1990*. Department of International Economic and Social Affairs, New York, 1991, p. 607 (Population Studies, no 120). (Average variant; for 1950: value for the period 1950-1955; for 1970-2025: value for a five year period ending on the year).
 Life expectancy at 60 years of age: for the most developed regions, Argentina, Canada, China, Finland, France and Poland: Ansley J. Coale and Paul Demeny, with Barbara Vaughan, *Regional Model Life Tables and Stable Populations*, Second edition, New York, Academic Press, 1983, p. 446; Ansley Coale and Guang Guo, *New Regional Model Life Tables at High Expectation of Life*, Population Index, vol. 56, no 1 (Spring 1990), pp. 26-41, model "West" (China, model "East" 1950-1990). For the less developed regions and Africa: UNITED NATIONS. *Model Mortality Tables for Developing Countries*. Department of International Economic and Social Affairs, New York, 1984, p. 351 (Population Studies, no 77); general outline.

2.5 A New Age Threshold to Old Age*

Within the framework of the study project of CICRED on socio-economic and demographic aspects of the ageing process of the populations, a threshold access to old age (60 years) has been arbitrarily defined by adopting "a uniform and statistical delimitation" (Desjardins and Légaré, 1984: 43) of old age. This threshold age is however liable to criticism. How can one consider as equivalent an old man from Africa and one from France without taking into consideration cultural differences? An old man in 1950, 1990 or 2025 will certainly not have the same characteristics. This is, however, what we are concluding when taking into consideration the number of years that ensue from birth to establish this threshold to old age. Therefore, here we are attempting to qualify this "classic" vision by developing an idea of the American demographer Norman Ryder who proposed to define the threshold to old age according to the years left to live (an average of 10 years) rather than according to those that have already been lived.³

For each population studied, we have established a new threshold to old age that corresponds to the age at which its members have an average of 10 years to live. This exercise very likely offers a better indication of the complex reality of heterogeneity of the old population. Table 2.6 presents the new age thresholds to old age that have been obtained. Being well above 60 years already in 1950, we note a substantial difference (4 years) between developed countries and those less developed. Thanks to the decrease in the death rate, the age threshold rises progressively in time and the differences between regions tend to disappear (especially for the male sex). Benefiting from a higher life expectancy, women reach today as in 2025 the threshold to old age at a later age than men.

Table 2.6 Threshold age to old age according to the definition "10 years more to live" by sex, more or less developed regions and countries, 1950-2025

	Male Sex					Female Sex				
	1950	1970	1990	2010	2025	1950	1970	1990	2010	2025
More developed regions	69	70	71	73	74	71	72	75	77	78
Less developed regions	65	67	70	72	73	67	69	72	74	75
Africa	64	65	67	69	71	66	67	69	71	73
Argentina	68	69	70	71	72	71	72	73	75	75
Canada	70	71	73	74	74	72	73	77	78	78
China	65	68	70	72	73	66	69	71	73	75
Finland	69	70	72	73	73	72	72	75	77	78
France	69	71	72	74	74	72	73	77	78	78
Poland	69	70	71	72	73	70	72	73	75	77

Note: Life expectancies at birth have been used as entries in standard tables of the death rate to determine, by means of interpolation, the age at which there is an average of 10 years left to live.

Sources: Life expectancies at birth: UNITED NATIONS. *World Population Prospects 1990*. Department of International Economic and Social Affairs, New York, 1991, p. 607 (Population Studies, no 120). For 1950: value of the period 1950-1955. For 1970-2025: value of five year period ending on the year.

Model tables for death rate: For the most developed regions, Argentina, Canada, China, Finland, France and Poland: Ansley J. Coale and Paul Demeny, with Barbara Vaughan, *Regional Model Life Tables and Stable Populations*, Second edition. New York, Academic Press, 1983, p. 446; Ansley Coale and Guang Guo, *New Regional Model Life Tables at High Expectation of Life*, Population Index, vol. 56, no 1 (Spring 1990), pp. 26-41, model "West" (China, model "East" 1950-1990). For the less developed regions and Africa: UNITED NATIONS. Tables for death rates in developing countries. Department of International Economic and Social Affairs, New York, 1984, p. 351 (Population Studies, no 77); general outline.

By using these new thresholds to calculate the proportion of old people in each of the populations, we obtain a subdued vision of the evolution of the ageing process of countries and regions as a whole (Table 2.7 and Figure 2.6). Compared with the proportions of old persons established on the basis of the "classic" definition (60 years), the trend of the curves remains more or less the same but the new maxima reached for each country and region do not exceed 9%.

3. This new definition was proposed by Norman Ryder in "Notes on Stationary Population", *Population Index*, vol. 41, no 1, January 1975, pp. 3-28.

* Here we take up again an exercise that was already applied by Bertrand Desjardins and Jacques Légaré in "Le seuil de la vieillesse: quelques réflexions de démographes", *Sociologie et sociétés*, vol. XVI, no 2, octobre 1984, pp. 37-48.

Table 2.7 Evolution of the proportion of old persons in the total population according to the definition "10 years more to live" and at 60 years, the world, more or less developed regions and countries, 1950-2025 (%)

	"10 years more to live"					at 60 years				
	1950	1970	1990	2010	2025	1950	1970	1990	2010	2025
The World	3.8	3.5	3.2	3.2	3.6	8.0	8.3	9.2	10.2	14.2
More developed regions	4.6	5.3	6.0	6.5	7.2	11.4	14.2	17.1	20.4	25.5
Less developed regions	3.4	2.7	2.3	2.5	3.0	6.3	6.0	6.9	8.4	12.0
Africa	3.2	2.8	2.2	1.9	1.9	5.2	5.0	4.8	5.0	6.4
Argentina	2.6	3.9	4.9	5.0	5.3	7.0	10.7	13.1	14.1	15.8
Canada	4.2	4.2	4.6	5.7	8.0	11.3	11.4	15.7	20.6	28.4
China	4.2	3.0	3.2	4.0	4.9	7.5	6.8	8.9	12.1	19.1
Finland	3.7	4.7	6.2	6.7	8.6	10.2	14.2	18.3	23.5	29.0
France	6.8	6.7	6.4	6.8	8.3	16.2	18.1	19.0	22.1	27.2
Poland	3.3	4.2	5.2	5.8	6.0	8.2	12.8	14.8	17.0	22.2

Source: Proportion according to the definition "10 years more to live": Calculations carried out applying, by interpolation, the threshold ages of Table 2.6 to total numbers of the population taken from: UNITED NATIONS. *The Sex and Age Distributions of Population. The 1990 Revision of the United Nations Global Population Estimates and Projections*, Department of International Economic and Social Affairs, New York 1991, p. 391 (Population Studies, no 122). (Average variant).
 Proportion of persons aged 60 years: See Table 2.1.

It is understood that the choice of this new threshold to old age is as arbitrary as that adopted in national monographs. But it allows one to illustrate "the usefulness of questioning the criteria that determine the choice of a threshold age in order to define old age" (Desjardins and Légaré, 1984: 44). Keeping in mind the heterogeneity of the elderly population in time, in space as well as in the various experiences of each of its members, we think that the threshold of old age must no longer be defined solely according to the evolution of the death rate which only takes account of quantitative elements. It is important to consider also qualitative elements peculiar to the ageing process: health, activity and needs in care and services.

Figure 2.6 Proportion of old population in the total population according to the definition "10 years more to live", 1950-2025

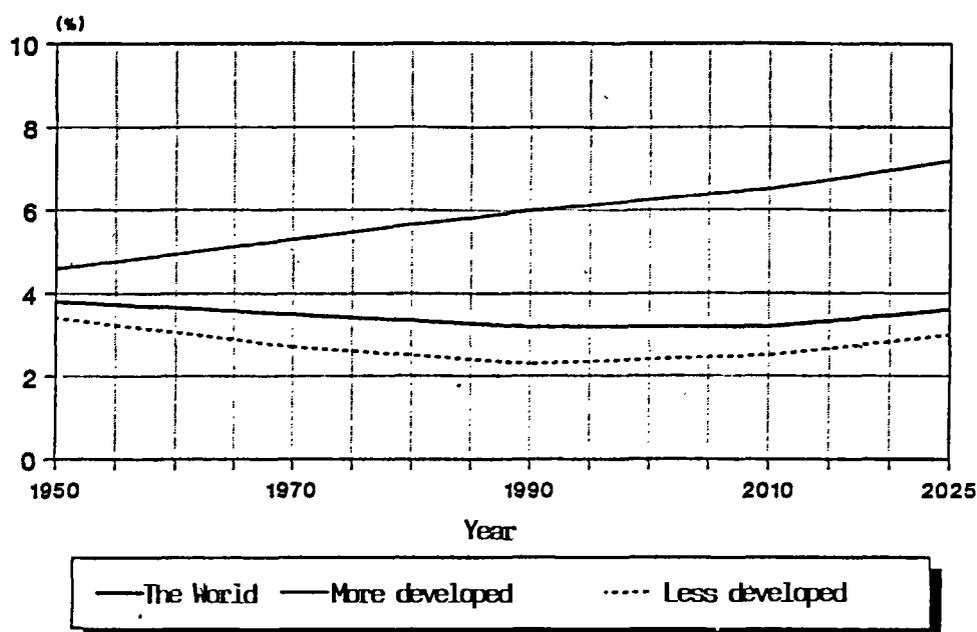
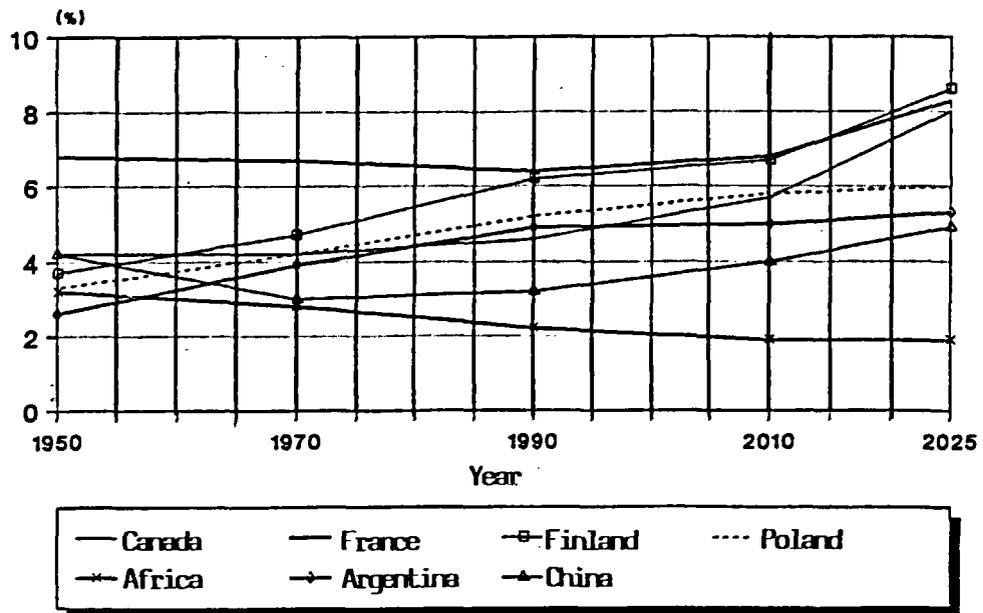


Figure 2.6 Proportion of old population in the total population according to the definition "10 years more to live", 1950-2025 (contd.)



Source: See Table 2.7

3. Health Aspects of the Ageing Process - by George C. Myers

3.1 An Overview Analysis

The growing numbers and proportions of older persons in both more and less developed countries of the world have brought heightened attention to the world-wide implications of population ageing. Among the most crucial issues are those related to the health and well-being of older persons and the pressures that are brought to bear on the state to provide adequate health services for its population, especially those services affecting older persons. The health care demands arising from the growth of the older population, especially the rapidly growing oldest old, may differ from those traditionally addressed due to the chronic nature of diseases of old age, the need for specialized medical care, and the burdens imposed due to long-term care needs.

Issues relating to health must be considered within the context of competing demands for limited resources that often pose threats to continued economic growth and societal development. The formulation of public policies, therefore, must be shaped with a deep appreciation of the demographic factors responsible for population ageing and its consequences for health care systems, as well as related social and economic developments that impact on health status and provision of care.

In this chapter, it is the intention to first examine the importance of mortality declines on population ageing, trends in causes of death that reflect on morbidity levels, and sickness and disability levels that impact on the years of healthy life which persons experience on average. The last section is addressed to the health care service implications of population ageing.

Although these domains are treated independently, it is important to establish at the outset that trends in the levels of morbidity, disability and mortality are complex, interactive processes. This is at the core of the debate, which arose in the early 1900s and which continues today, over the likelihood of a "compression" of morbidity and disability (Haan *et al.*, 1991). A compression of morbidity would occur if the onset of major chronic illnesses and related disabilities was delayed later in life at a more rapid pace than increases in life expectancy. This scenario would be more likely if there is a cap on the years of extended life that are possible in the future, as has been suggested by some scholars, but that is not likely to be experienced very soon in any event. However, this position still says little about the prevalence of morbidity and disability. Furthermore, there are important issues relating to early diagnosis of chronic diseases, the extent of comorbidities, changing risk factors for disease and disability, and the role of prevention and rehabilitative efforts late in life. Directed research to examine such questions was starting to be realized when many of the monographs were initiated. Nonetheless, the coverage of mortality and health dimensions contained in the country studies do allow us to examine many patterns and trends that contribute to cross-national consideration of these general issues.

3.2 Mortality Change

The majority of countries for which monographs have been prepared have already passed through the transition in vital rates that have characterized world demographic developments in the past century. Nonetheless, in the monographs for China, Guatemala, Kerala and Morocco, we can gain an appreciation for the earlier paths in the demographic transition through which the more developed countries have passed.

The so-called "epidemiologic transition" (Omran, 1971, 1983) provides a general framework for examining the main historical changes in mortality patterns. They include:

- 1) A shift from high levels of mortality to low levels, initial reductions concentrated at the earlier ages of life and then gradually being effected at the adult and eventually the most advanced ages.
- 2) A gradual change from high mortality rates from communicable, infectious diseases to high rates from diseases of a chronic, noncommunicable nature, often considered to be created from man-made causes.
- 3) An emerging pattern of mortality reductions over time that favour females over males, which results in a widening gender gap in the survival levels.
- 4) While the transitions benefit all socio-economic groups, differentials persist, and may even widen, that favour the economically "better-off" persons over those more disadvantaged.

- 5) A growing recognition of the fact that we may be entering a new stage of the transition, in which mortality rates for some major noncommunicable diseases actually decline (e.g., heart disease, stroke), while some communicable diseases arise, such as AIDS, that come to play important roles in terms of overall mortality.

Of major importance in such a framework is the contribution to population ageing in a population. Deaths come to be concentrated at the older ages, as for example in the United Kingdom, where three-quarters of male deaths and 85 per cent of female deaths occur at ages 65 years and above. In addressing issues of mortality reduction, therefore, the major focus of attention must shift to efforts at controlling chronic diseases, particularly at advanced ages, and to modifications in health care systems to address these developments.

The long-term epidemiologic transitions are clearly captured in the various country monographs. In Canada, rates of mortality in age groups between 0-49 fell precipitously from 1921 through 1986 for both males and females. At ages 50 and above, gradual secular improvements are noted for females, but only after 1971 for males. It is commonly noted in the various monographs for the developed countries that 1970 was a turning point in which both male and female death rates began to decline more rapidly, particularly at the middle adult and advanced ages. For example, striking mortality reductions are reported for males in Finland after 1971. In contrast, death rates for males in the ages 35-64 tended to increase in Poland and Hungary, whereas the trend for older persons, including males, was downward.

Declines in death rates at ages 65 and above are universally reported, and it is noteworthy that this includes the rates at ages 80 and above for virtually all countries included in the project. This growth of the oldest old population is in large measure a result of these latter reductions at the oldest ages, but of course some of this growth is also attributable to larger cohorts entering these age groups.

It is commonly reported that death rates for females are lower than for males at all ages. This excess male mortality is true at the older ages, even at the terminal age intervals. Moreover, the trends over time reveal that female death rates have tended to decline more rapidly, although in some countries (e.g., Australia, Finland) there is evidence of greater parity in the trends or even a reversal. But the differential mortality still substantially favours females over males and directly contributes to a substantial difference in the number of older females compared with males.

Data reported for France and the United Kingdom on socio-economic mortality differentials support the conclusion that persons in higher level occupations and with greater education attainment have lower mortality than those with lower levels. Interestingly, these differentials characterize not only younger persons, but appear to persist even at older ages. In addition, French data confirm that marital status differentials, which reveal lower mortality levels for married, as opposed to single, divorced and widowed persons, also exist at ages 55 to 65 years for both males and females. Warnes (1993) reports that, for the United Kingdom, "Mortality differentials in old age by marital status have been persistently strong". The joint effects of longer survival for males and females, along with the seemingly beneficial effects of being married, mean that many persons entering the older ages will remain in intact-couple relationships until much later in life. However, counter trends also are evident in that cohorts entering the aged population after the turn of the century will contain higher proportions of divorced persons.

3.3 Life Expectancy and Survival

An effective means of summarizing changes in mortality levels is through analyses of cross-sectional life table values over time. To accomplish this in a standardized manner, life tables were constructed with data derived from the most recent World Health Organization (WHO) statistics. The country monographs contain considerable life table information, but the data are reported for different years and are derived using varied actuarial procedures. Thus, a consistent set of data for the countries is useful for comparative purposes.

From the data presented in Table 3.1, the following generalizations can be determined. One, in the majority of countries, three-quarters or more of males can expect to survive to age 65, and over 85 per cent of females. Survival to older ages, therefore, is a common expectation for persons alive today and experiencing present mortality conditions. These are certainly rather conservative estimates of future survival, for mortality levels are generally anticipated to decline even further in the future. Not only is survival up to age 65 a common phenomenon, but over one-fifth of males and two-fifths of females can expect to reach age 85.

Table 3.1 Life expectations and survival levels at specified ages, by sex, selected monograph countries

	Life expectancy		Percent surviving to age			Percent surviving from
	Birth	Age 65	65	75	85	65 to 85
MALES						
Argentina (1987)	68.6	13.6	68.4	44.5	14.3	20.9
Australia (1988)	73.2	14.9	78.3	74.5	21.6	27.5
Canada (1989)	73.6	15.3	78.4	55.2	23.3	29.8
Cuba (1988)	72.0	15.2	75.4	55.2	20.0	26.5
Finland (1989)	70.9	13.9	72.1	46.9	16.8	23.3
France (1989)	73.0	15.8	75.4	55.0	24.4	32.3
Guatemala (1984)	61.0	14.4	60.8	41.4	14.9	24.5
Hungary (1990)	65.2	12.1	57.2	32.9	8.9	15.6
Israel (1988)	73.9	15.2	79.3	56.1	23.1	29.1
Malta (1990)	73.8	14.1	80.6	54.7	18.8	23.3
Poland (1990)	66.6	12.5	61.8	36.5	10.5	17.0
United Kingdom (1990)	73.0	14.2	78.2	51.8	18.7	23.9
United States (1988)	71.6	15.0	73.5	50.8	20.8	28.3
FEMALES						
Argentina (1987)	75.0	16.7	82.2	65.6	29.0	35.2
Australia (1988)	79.8	19.1	87.8	72.8	41.4	47.2
Canada (1989)	80.5	19.8	87.9	73.5	44.6	50.8
Cuba (1988)	75.3	16.6	81.7	64.4	26.7	32.7
Finland (1989)	79.0	17.8	88.6	72.4	36.5	41.2
France (1989)	81.4	20.4	89.2	78.0	49.2	55.1
Guatemala (1984)	64.5	15.7	67.4	49.4	20.6	30.6
Hungary (1990)	73.8	15.4	79.2	58.4	23.4	29.5
Israel (1988)	77.6	16.8	86.9	67.5	31.2	35.9
Malta (1990)	78.4	17.0	88.1	71.1	31.9	36.2
Poland (1990)	75.6	16.2	82.8	63.0	27.6	33.3
United Kingdom (1990)	78.6	18.0	86.3	68.6	37.0	42.8
United States (1988)	78.5	18.9	84.7	68.6	39.6	46.8

Source: Center for Demographic Studies, Duke University, Prepared from WHO Mortality Data Tapes.

Two, there is considerable disparity in life expectancy at birth levels among countries, with Canada, Israel and Malta on the high side and Guatemala, Hungary and Poland on the low side. Interestingly, the rankings of countries for life expectancy at age 65 differ somewhat from the average life expectancy at birth. French males and females have the highest levels, with Canada only slightly behind. In contrast, the two Eastern European countries of Hungary and Poland have rather low levels of life expectancy at age 65, especially for males.

Three, the levels of average survival and life expectancy for females greatly exceed those of males. This accounts for the preponderance of women among the aged, especially at the most advanced ages.

The current levels in survival and expected years of remaining life reflect the rapid improvements in mortality levels that have been made in recent decades. With the exception of male mortality in Hungary and, to a lesser extent in Poland, declines in mortality rates have been universally reported in the 1970s and 1980s for the countries covered by this synthesis. Declines have not only occurred at younger ages, but they also have dramatically taken place at advanced ages as well. For example, in Australia 26 per cent of women could expect to see their 85th birthday according to the 1971 life tables, but by 1986 this proportion had risen to 38 per cent. In the somewhat later life tables reproduced here, the figure is 41 per cent in 1988.

The contributions to overall improvements in life expectancy made at different ages have been calculated for several countries. In France, it is reported that improvements at earlier ages were particularly important in the 1950s and 1960s, but in the 1970s the improvements at the older ages came to be of major significance. Over 47 per cent of the male gain of

1.8 years of life expectancy in the 1970s and 55 per cent of the 2.6 years gained by women were attributable to contributions after age 60. Similar trends are found in the United Kingdom over a longer historical time series.

Increases in life expectancy and survival have been especially rapid in countries such as Cuba, China and Malta, which had earlier levels considerably lower than many of the European countries, yet today are much more similar. In spite of these widespread gains, there still exists considerable variation among countries. This suggests that further gains can be anticipated in many countries. By the same logic, it is certainly possible that the trend of widening differences in mortality levels between men and women may be coming to a close and a narrowing is being effected. Signs of this development are already noted in Australia, Cuba, the United Kingdom and the United States.

3.4 Causes of Death

Examinations of the underlying causes of death can provide important insights into the factors responsible for changes in life expectancy and survival and the general disease patterns that characterize populations. A demographic approach of considerable utility is to decompose the changes that have occurred in overall life expectancy in terms of the contributions that can be attributed to different causes of death at specific ages for males and females separately.

An example chosen is that of France between 1970 and 1989, dates for which life tables have been derived using the WHO data. France, with the highest current male and female life expectancies at age 65, for the countries examined, provides an excellent case for examining the likely future patterns for other countries. Table 3.2 provides these data for changes occurring for specific age groups. Firstly, it may be noted that, over this 20-year period, the overall change for female life expectancy at birth was 4.8 years gained compared with 4.0 years for males, thus contributing to a further widening of the gender gap. Of the gains in life expectancy, made over this somewhat longer period than noted previously, 44 per cent of the 2.0 years added for males come at age 65 and above. The comparable percentage contribution for females was 56 per cent. As noted earlier, this indicates that reductions in mortality at older ages have been an important element in changing overall survival and a crucial aspect contributing to population ageing.

Table 3.2 Cause specific contributions to change in years of life expectancy at birth between 1970 and 1989, France

Ages	Infections	Cancer	Diabetes	Heart Disease	Stroke	Cirrhosis	Birth	Accidents	Residual	Total
MALES										
0-4	.072	.010	.000	.003	.003	.001	.445	.084	.118	.736
5-14	.003	.022	.000	.001	.004	.000	.006	.082	.017	.135
15-24	.002	.017	.001	.005	.001	.000	.003	.116	-.037	.107
25-49	.048	-.020	.006	.084	.048	.089	.000	.283	-.121	.419
50-64	.061	-.209	.016	.245	.179	.154	.002	.134	.267	.849
65+	.028	-.072	.036	.502	.647	.125	.000	.064	.451	1.780
Total	.213	-.252	.060	.839	.883	.371	.455	.761	.695	4.026
FEMALES										
0-4	.082	.008	.001	.002	.005	.001	.381	.055	.106	.641
5-14	.006	.011	.001	.002	.003	.001	.006	.041	.010	.081
15-24	.007	.011	.000	.003	.002	.001	-.001	.061	.017	.100
25-49	.032	.067	.007	.057	.033	.097	.002	.071	.084	.451
50-64	.022	.107	.030	.194	.168	.076	.000	.044	.177	.819
65+	.005	.175	.098	.758	.975	.047	.000	.162	.495	2.716
Total	.155	.380	.137	1.016	1.185	.222	.387	.434	.890	4.807

Source: WHO data.

There were positive contributions to life expectancy for each of the specific causes of death, except for male cancer at ages 50 and above. The largest gains are attributable to stroke as a cause of death, with heart disease being second in size of the positive contribution. Cardiovascular diseases represent the major causes of death for older persons and the reductions

in mortality implied by these years of life expectancy are of major importance. Moreover, the gains have come at older ages, which suggests that significant advances are still possible in reducing deaths at these advanced ages.

The increases in male cancer mortality undoubtedly reflects rising lung cancer levels, attributable in large measure to smoking. This trend is particularly significant because cause elimination life tables in 1989 indicate that elimination of cancer deaths would add 4.9 years to life expectancy for French males, a larger effect that would now be contributed by elimination of heart disease (2.6 years). Corresponding figures for females are much smaller: 3.4 years for cancer and 3.1 years for heart disease elimination.

The findings from the French example are indicative of the reported data in many of the monographs for the demographically-advanced countries. In Canada, overall death rates at the older ages continued to fall between 1975 and 1985 at all five-year age categories from 60-64 to 85 years and over. This was true for all of the major causes except cancer, which increased for both males and females.

Another feature of mortality change with considerable importance for the direction of health care services has been the rising average age of deaths reported for a few countries. In Canada, the medians for males increased from age 68.5 in 1971 to 71.2 in 1985, and for females from 74.7 to 77.0. In France, the median age for all deaths increased between 1970 and 1989 from 72.8 to 76.7 for males and 80.4 to 84.8 for females. Moreover, the median ages of death from specific causes of death derived from life tables also have increased in the countries examined. Age of persons dying from cancer in France increased for males from 70.4 to 73.0 and for females from 70.4 to 77.8, heart disease from 75.6 to 78.8 and from 78.3 to over 85.0 for males and females, respectively. For deaths due to strokes, the increase was from 78.3 to 81.6 and from 82.5 to over 85.0 for females. These changes in median ages of deaths due to specific underlying causes are taking place at increasingly older ages, but we cannot be certain whether this reflects later onset of the emergence of the disease or increased survival after contraction of the disease. This has an important bearing on the prevalence levels of morbidity at the advanced ages, a topic to be considered in a later section.

Age patterns of disease progression at the older ages, as reflected in causes of death statistics for several countries (e.g., Australia, France, the United Kingdom and the United States), provide interesting evidence for overall sex differentials in mortality. There is general agreement that cancer death rates for women exceed those of men up to age 65, but then shift to higher levels for men. This largely reflects the high rates of female breast cancer mortality, which tend to decline after age 65 and male lung cancer rates that continue to increase with age. Respiratory death rates are higher for men at all ages. In contrast, death rates for cardiovascular disease sharply increase by age and shift from being higher for males than females at ages 65-84 to the opposite at 85 years and over. This reversal is largely accounted for by deaths from heart disease, the most prevalent cause of death, as rates for strokes are higher for women at all of the oldest ages.

Trends over time that have led to overall increases in cancer levels (especially lung cancer) for females, declines in male respiratory death, and substantial reductions for male as well as female rates in death rates for cardiovascular disease suggest that the gap between male and female life expectancy may be narrowing somewhat. It should be emphasized, however, that statistical reports of single, underlying causes of death mask considerable increases in comorbidities and listing of multiple causes on death certificates.

3.5 Health Status

The examination of causes of death provides us with a view of the main underlying conditions that contribute to death, but it does not adequately capture the levels of health or the conditions that affect the health of older persons. Moreover, this type of analysis does not assess directly the comorbidities that many older persons experience and which can contribute to death. Nonetheless, the most serious chronic conditions facing older persons are those similarly related to the major causes of death. Data from health surveys and hospital admissions and discharges reported in the country monographs reveal the levels of chronic conditions experienced by older persons, the acute episodes that may require medical treatment, and the non-life-threatening (NLT) ailments that often affect their well-being.

In Great Britain, it is reported that nearly half of the population 65 years of age and over report the existence of a chronic disease that in varying degrees affects their daily life. Women tend to report somewhat more chronic diseases than men, largely because they make up disproportionate numbers at the oldest ages. In Cuba, 70 per cent of older persons are reported to suffer from chronic diseases. Among the prevalent diseases reported for the population 60 years of age and over are heart disease (19 per cent), hypertension (37 per cent), circulatory diseases (13 per cent), diabetes (17 per cent), and asthma (11

per cent). For Canada, the levels of heart disease are quite similar, while hypertension is about the same for females, but only half as much for males. For the other categories of disease prevalence, the levels between the two countries are remarkably similar. As chronological age increases, so does the likelihood of having multiple chronic illnesses. In the United States, it is reported that the proportion of the population 60 years and older with two or more common chronic conditions was higher for women than men. At 80 years of age and over, 70 per cent of women and 53 per cent of men had two or more of these conditions.

The most frequently noted health ailment in virtually all countries is arthritis. In Canada, it affects nearly 50 per cent of older women and 30 per cent of men. In France, the figure is 61 per cent for those 65 years of age and over, and the figure seems to have increased over time. Moreover, while arthritis tends to increase with age, it is still the number one ranked chronic health problem that is reported at all ages over age 50.

Senile dementias, especially those of the Alzheimer's type, are conditions that reach quite high levels at the very advanced ages and, thus, have received considerable public attention in recent years. It is generally felt that nearly half of the persons with dementias have Alzheimer-related symptoms, with the rest mainly attributable to multi-infarctual causes. There is also some evidence that the prevalence of depression at older ages has been increasing in France and the United States.

Sensory problems affecting sight, hearing, taste and touch are commonly reported among older persons, especially among the oldest old. In fact, hearing loss is the second most widely-reported condition for older males in Canada (21 per cent) and, for older females, vision is the fourth most mentioned condition (16 per cent). Some of these sensory deficits can certainly be overcome by the use of aids, such as the wearing of glasses and hearing aids. But the aids are often expensive and require frequent replacement. In Great Britain, 16 per cent of men at ages 65 and over still report difficulties with eyesight even though they wear glasses and 26 per cent of women. Ten per cent of men have difficulty hearing although they wore an aid, and nine per cent of women.

Other ailments that can affect the well-being of older persons are dental, dryness and itching of the skin, foot problems and sleep disorders. As survival increases, they appear to take on greater importance because they are so age-related.

Older persons seek the medical care of physicians and enter hospitals more frequently than younger persons. Although the conditions requiring treatment are reflective of the major causes of death noted earlier, there are some other conditions that often require care. These include, for men, prostate problems that require surgery (the highest reason for hospital admission among men 65-74 years of age in data reported for a health authority in England), hernias, hip operations and, for both men and women, cataract and lens replacement. Breast cancer surgery, hip replacement and gynecological problems (that may involve hysterectomies) are other conditions commonly experienced by women. It is generally reported that, although women are more likely to report themselves in poor health, older men have higher levels of using an outpatient facility or entering a hospital (Canada and United Kingdom). Indeed, hospitalization rates appear to be increasing over time, as reported in Australia. However, the average length of stay in a hospital is reported to have declined in Australia and the United States.

Accidents also are a problem that many older persons experience. This is particularly true for falls, especially among older women, and as a result of motor vehicle mishaps.

3.6 Quality of Life

There has increasing research attention being devoted to levels of disability incidence and prevalence for it directly reflects on the well-being of persons at older ages and their capacity for carrying out basic activities of daily living. Moreover, the long-term care required by disabled persons addresses itself to the relative role of informal care, often provided by family members and neighbours, and the formal services (sometimes institutionalization) that are primarily the responsibility of local and national governments.

The numbers of people suffering from incapacity vary a great deal from country to country. In Australia, approximately 32 per cent of the aged are reported to experience some limitations in their daily activities; in Israel, only seven per cent of the elderly report daily limitations; and in Finland 80 per cent suffered from some levels of incapacity. These rather large differences result partly from different definitions of incapacity and measurement and partly from substantive differences between the countries. As expected, the proportions of incapacitated people increase with age. For example, in Canada, only 15 per cent of those aged 50 to 54 experience some degree of incapacity *versus* 40 per cent of persons aged 70 and older.

In the United States, these numbers show similar trends with nine per cent of those aged 65 to 69 needing daily assistance *versus* 45 per cent of those aged 85 and older.

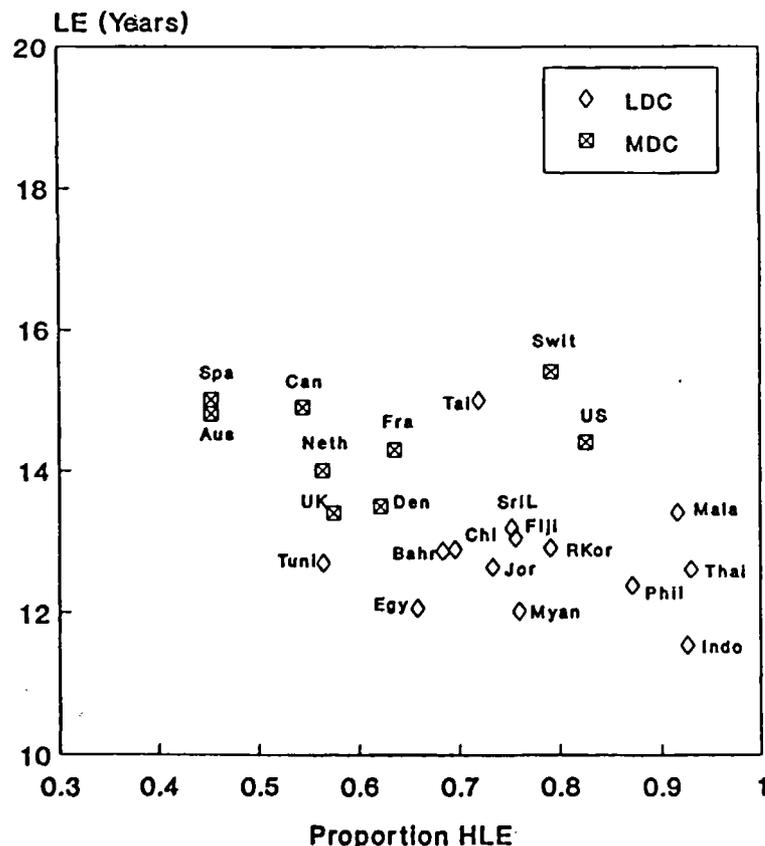
In a similar study in Australia conducted in 1988, the levels of disability at ages 60-84 had increased to 45 per cent from 37 per cent in 1981 and from 64 per cent to 83 per cent for persons 85 years and over (Mathers, 1991). Although this rise may reflect the growing consciousness of persons to the issue of disability, it also may indicate an increasing level of disability from the range of impairments detailed previously.

The numbers of disabilities and chronic illnesses increase with age. In Finland, for instance, approximately 76.5 per cent of the population aged 65 to 74 and 78 per cent of the people 75 years and older are chronically ill. This pattern can also be seen in the number of bed-days, which in Finland are nine times greater for those 85 years and older than for those aged 65 to 74. In Quebec, the average number of bed-days is 25.7 for those aged 65 to 74 and 36.1 for those 75 years and older; and in the United Kingdom, the corresponding number of bed-days is 39 and 56.

The numbers of incapacitated, chronically ill and disabled are even larger for women, especially the oldest women. For those 65 years of age and older in France, 58.5 per cent of women report some level of incapacity *versus* 49.8 per cent of men; and in the United States, 30 per cent of women 75 years of age and older need daily assistance *versus* 17 per cent of men. Not only are women more likely to be incapacitated, but their problems are usually of a more severe nature, and they often suffer from multiple conditions. For instance, the Guatemala monograph reports an average of between 1.18 and 1.22 disabilities for women (with increases at the oldest ages) *versus* 1.01 disabilities for men. Quebec also reports multiple conditions for women 65 years and older with each woman reporting an average of 2.54 problems. In the United States, 70 per cent of women 80 years and older have multiple problems *versus* only 53 per cent of males. In the United Kingdom, women show higher rates only in the oldest age category (75+).

Quality of life, that is, the extent to which life is free from incapacity, chronic illness and disability, is a function of both age and gender. It is evident from the data provided that the oldest old and women suffer disproportionately. As life expectancy continues to increase, it is important to assess the relative periods of expected survival in different states. In order to assess these changes, life table approaches have been used to calculate what has come to be known as active or healthy life expectancy.

Figure 3.1 Total LE and % HLE, Males: Age 65



To provide a general picture of these issues, Figures 3.1-3.3 are presented, which show the proportion of total life expectancy that consists of healthy years of life at age 65 for both males and females. They include many countries not included in the series of monographs, but illustrate the major findings from such analyses.

Figure 3.2 Total LE and % HLE, Females: Age 65

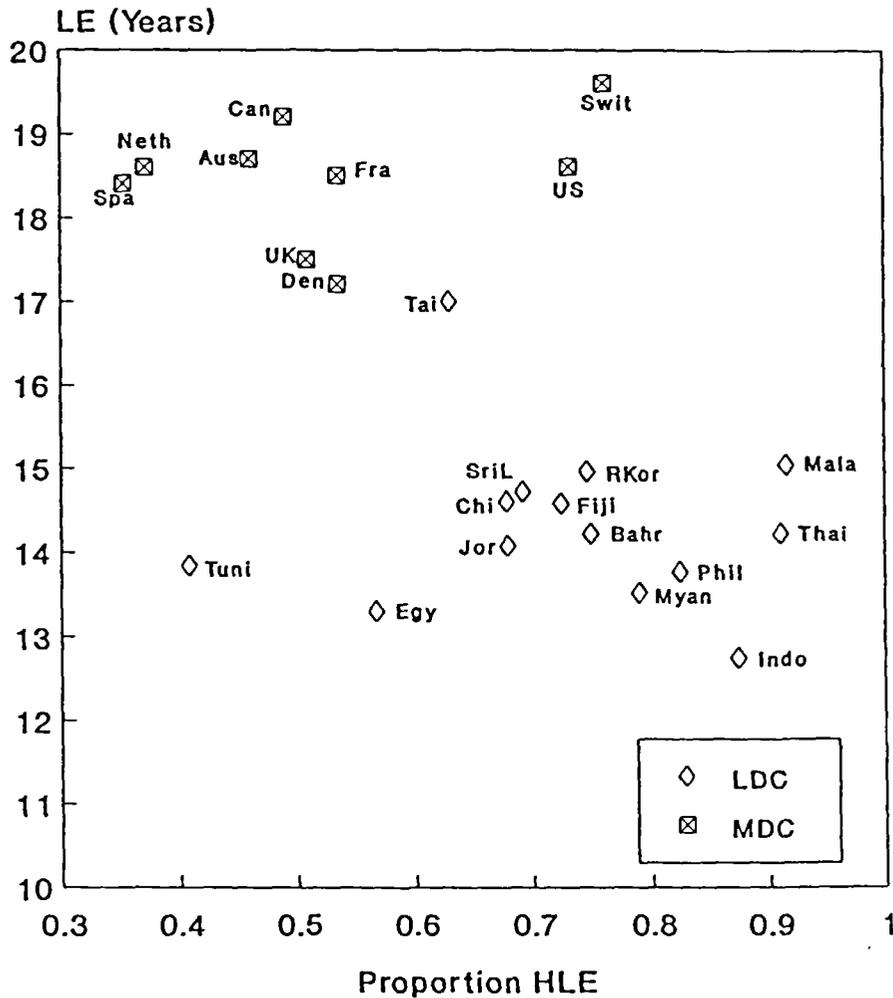
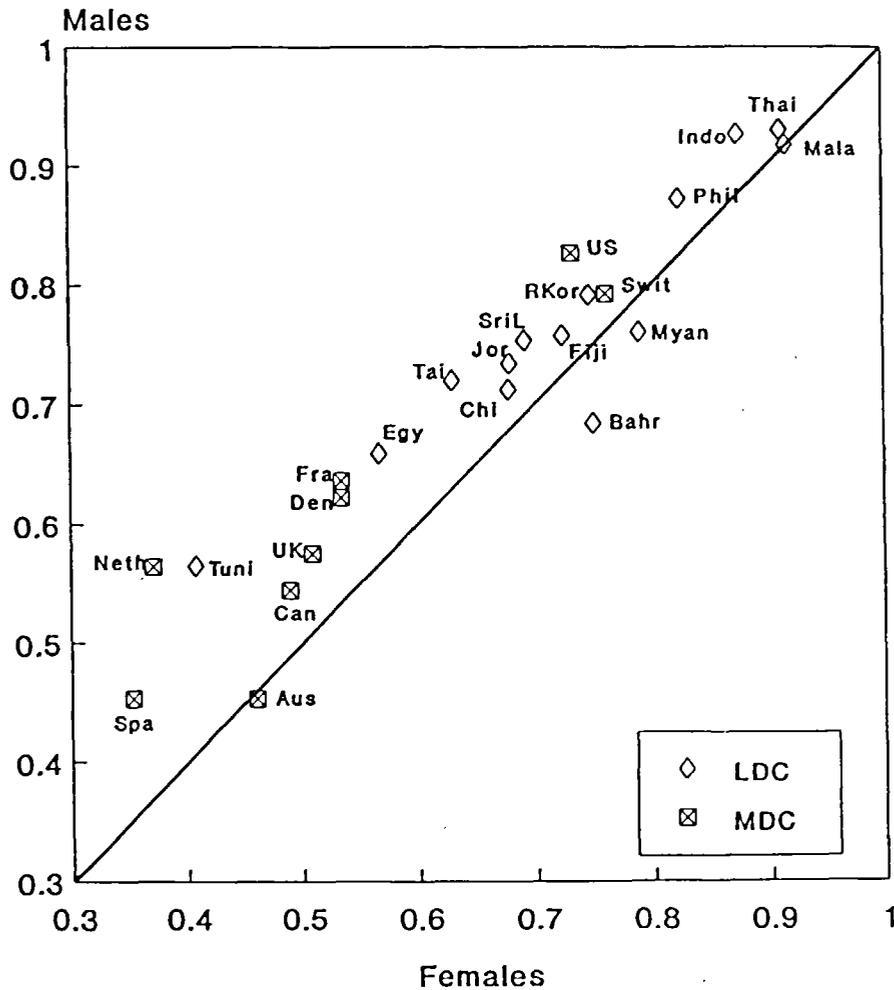


Figure 3.1 for males and Figure 3.2 for females clearly show that the more developed countries, which have higher life expectancy levels at age 65, also have lower proportions of the remaining years of life spent in healthy states than in developing countries. This is particularly true for females. Indeed, in Figure 3.3, it can be seen that with few exceptions males are favoured over females in terms of higher proportions of healthy life expectancy to total life expectancy. Thus, females live longer, but many of these years are not free of disability. This seems to be particularly true for the more developed countries.

Figure 3.3 Proportion of HLE, Males and Females: Age 65



Data from some monographs also provide additional information on this topic. For example, in Quebec, women live an average of 10.8 years with incapacity, while men live with incapacity only 8.1 years. In France, while 8.2 years separate the average life expectancy of women and men, only .8 year separates average lengths of life expectancy without incapacity. These longer periods of incapacity and the occurrence of more severe forms of disability lead to higher levels of dependency for women. In Canada, for instance, 60 per cent of the women 60 years of age and older are functionally dependent *versus* only 45 per cent of the men.

As countries pass through an epidemiologic transition and experience gains in life expectancy, they also may not experience the full measure of these years in non-disabled states. Recent data offer contrasting patterns with respect to the relative gains in active and disabled life expectancy that have accompanied recent gains in life expectancy at 65 years of age. In England and Wales, it is reported that gains in active life expectancy for both males and females exceeded that of disabled life expectancy between 1976 and 1984. The reverse pattern was reported for the United States between 1970 and 1980. There is a considerable amount of research being conducted throughout the world, including studies in many of the project countries, that will shed further light of recent trends and their implications for future developments.

Of major importance in this regard are not only changes in longevity and disability patterns by sex and age, but how socio-demographic factors may be related to differential survival and disability. Only a few monographs touch upon these covariates, but disabilities also seem to be affected by socio-economic factors. As future cohorts of persons reach older ages with greater socio-economic endowments, this may have strong effects on the relative quality of life enjoyed by persons living more extended lifetimes. But it should not be surmised that this will have positive implications on health care services, including physician, hospital and long-term provision.

3.7 Health Care Utilization/Expenditure

As life expectancy increases, the number of people who live with chronic illnesses and disabilities tends to grow. This growth leads to a disproportionate number of elderly persons utilizing health care services and mounting pressures on the funding of such services. The redistribution of services, progressively directed toward older persons, is projected to become even more important in the years to come. In most countries, this will place a great burden on national health and social assistance programmes, like the *Programa de Asistencia Medica Integral (PAMI)* in Argentina, the National Health System (NHS) in China, and Medicare in the United States, which help to defray the costs of health care.

In many countries, the differences in distribution between the size of the older population and the share of total health care expenditures accounted for by older persons are quite large. Even though in most developed countries the elderly make up less than 15 per cent of the total population, they often incur more than one-third of the health care expenditures. For example, in Quebec, it is reported that the aged (65 years of age and over) made up approximately 8.7 per cent of the population, but were responsible for 37.4 per cent of total health care expenses. This disparity becomes even greater at the most advanced ages. In France, for instance, those persons 65 years and older have health expenses two times greater than average, while those 80 years and older spend 2.5 times the average. Malta reports a similar pattern with persons 65 years and older spending 4.3 times the average for health care, and those 75 years and older spending six times the average. In the United States, three out of every five federal health care dollars (57.9 per cent) go to the elderly. This is 17 times greater than the health care expenses for persons under age twenty. The majority of these expenses arise from hospital costs and, for the oldest old, nursing home bills. On average, the elderly also visit doctors and specialists more often and use more prescription drugs than the rest of the population, which further adds to the elevated costs.

As noted, hospital bills make up the largest portion of the health care costs for those 65 years of age and older. These costs increase rather dramatically with age (although Quebec does report a small decline in the numbers of people who seek hospital care among those 75 years and older). This is because the elderly are hospitalized more often and remain in the hospital for longer periods of time. In Israel, for example, those 65 years of age and older account for nine per cent of the population, but use one-third of the total bed-days. These numbers are even greater for older ages as approximately 22 per cent of the Israeli population aged 60 to 64 *versus* 36 per cent of the population 80 years and older spend time in a hospital in a given year. In most countries, women account for a larger share of hospital expenses, with the exception of Israel, where more men are hospitalized than women.

As life expectancy increases, there is a corresponding increase in the numbers of people requiring long-term care. There is considerable variation in the percentage of people in institutions and nursing homes in the countries studied. In many of the developing countries, like Argentina, Cuba and Morocco, institutions are viewed as a last resort. Therefore, there are relatively low numbers of institutionalized people in those countries. In more developed countries, the percentage of the elderly population in institutions falls between approximately four and nine per cent, with an increase at upper ages. In Australia, in 1981, 4.2 per cent of the aged were in institutions, while 8.8 per cent of the aged in Quebec were institutionalized. In 1983, Israel reported that 4.1 per cent of those 65 years of age and older and 8.6 per cent of those 75 years and older were living in long-term care facilities. Again, women, especially never-married women, make up the largest percentages of those needing institutional long-term care.

As a whole, the elderly seek the advice of doctors and specialists at a somewhat greater rate than that of the total population. These numbers start to increase after age 50 and continue to grow (except when mobility becomes a problem). In Canada, for example, between the ages of 50 and 54, 73 per cent of the men and 81.7 per cent of the women sought the help of a specialist in a given year; while of those 70 years and older, 84 per cent of the men and 87.4 per cent of the women consulted a specialist. These numbers are similar to Australia where, in 1983, 75 per cent of the elderly had visited a physician in the three months prior to the interview. France, however, shows a slightly different pattern. The large majority of specialist consultations occurs at very young ages followed by a sharp decline and, then, only a slight increase at older ages. The pattern for doctor visits in France coincides more closely with the rest of the countries studied, with fairly large increases at older ages. Of the specialists who are consulted, oculists, cardiologists and chiropractors are sought out most often.

The amount of prescription medications taken also increases with age. In France, people aged 65 to 79 consume two-times the average, while those 80 years and older consume 2.45 times the average. These numbers are reported to have been increasing over the past several years in many countries. Australia provides one example since, in 1977-78, 66 per cent of those interviewed had taken prescription medications in the two days prior to the interview *versus* 71 per cent in 1981. Once again, females account for higher percentages. For instance, in Canada, 63.2 per cent of the males 60 years and older and 76.9 per cent of the females had used prescription drugs in the two days before the interview. The prescription drugs most often used were blood pressure pills and pain relievers.

4. Economic and Social Aspects of the Ageing Process - by Léon Tabah

4.1 Factors Relating to the Living Conditions of the Elderly

There are considerable divergences in the living conditions of the elderly in the countries under review. These divergences are mainly due to five types of factors:

- Differences in development and in political systems, and consequently differences in the social approach to dealing with the elderly
- Cohort effect of the elderly
- Residence of the elderly, mainly in urban or rural areas
- Sex and age of the elderly population
- Former branch of activity of the retired.

These factors necessarily have consequences on the economic and social living conditions of the elderly from the following points of view:

- Income
- Consumption
- Saving and assets
- Labour force participation
- Housing, family arrangements and amenities.

In this chapter, which proposes a synthesis of the economic and social conditions of the elderly as described in the monographs, the determinants of these conditions will be dealt with first and secondly their consequences. In general terms, it can be claimed with some justification that most of the monographs provide information and analyses on both the determinants of the economic and social conditions of the elderly and the conditions themselves.

4.2 Determinants of the Present Economic and Social Conditions of the Elderly

4.2.1 Development and Political Systems

Three types of situation are here distinguished:

-- *Industrialized countries with market economy*: Australia, Belgium, Israel, Finland, France, Italy, Quebec, United Kingdom, United States. They are all countries where the decline of fertility and mortality started many decades ago, so that the ageing process is extremely pronounced, with below replacement fertility level. The rate of growth in most of these countries is slightly positive, thanks to immigration. Nonetheless, the demographic projections indicate that the ageing process has not yet reached a plateau and will continue for some decades. In many of these countries, the percentage of persons aged 60 and over is well over 20, and sometimes even higher. The social security systems have been operating for a long time. They date back in most cases to before the last world war, and have provided continuous improvements in benefits for the elderly, and therefore in their economic conditions, as is seen further on in this analysis. The age of retirement started to decline in most countries in the middle of the 80s. The retirement systems are a mixture of redistribution ("pay as you go") and capitalisation, and in all countries some additional forms of personal savings for retirement allow the pensioners to enjoy a substantial part of their past income during retirement.

-- *Socialist or former socialist countries, with centrally planned economies*: China, Cuba, Hungary, Poland. In these countries, fertility and mortality have declined substantially and even in cases abruptly (China). At least in two of them (Cuba, Hungary), the replacement level is no longer achieved. The population growth is in the same range as the previous group of countries, with the difference nonetheless that these countries are not receiving immigrants. They are undergoing a process of ageing already marked, although not yet as pronounced as in the industrialized countries with market economies. In these countries the retirement systems are always based on redistribution ("pay as you go") and never on capitalisation. As discussed later, in many countries the social security schemes started with the political systems themselves, or were adjusted when the socialist governments took over many decades ago. Coverage of the basic needs of the elderly is often partial (only some of the urban population and hardly any of the rural population in China), or is insufficient and therefore needs to be supplemented: a sizeable proportion of pensioners continue working, full or part-time, after retirement age with a view to getting additional income. The income derived from investment is insignificant.

-- *Developing countries with non-socialist governments*: Argentina, Guatemala, Kerala, Morocco. The fertility decline in Argentina has been pronounced for many decades, linked with the numbers of migrants from European countries, and the ageing process started decades ago, although it is not yet as advanced as in Europe. In the other three countries, the fertility decline started only recently and the ageing process is in its very initial stage. The proportion of old people --say 60 years and over-- is very small, in the range of 6-8 per cent, but is expected to increase very rapidly according to the United Nations population projections. The age structure of these three countries will not show ageing similar to that of the industrialized countries for 5 or 6 decades. In the best of cases, these countries are in the process of introducing arrangements to cope with population growth rather than taking measures to face ageing. Given their short-term economic problems, this topic is not a high priority one, except in Argentina.

In most countries where data are available for elderly migrants or elderly minority groups, their pensions and living conditions are much lower than for the other elderly.

These groups are less likely to receive a substantial pension, to have good education, to own their homes and other valuable assets and therefore have fewer resources for the retirement period.

As a matter of fact the level of ageing is generally lower for these groups than for the general aged people. In the United Kingdom, in 1987-1989, 4.7 per cent of all-age inhabitants described themselves as members of non-white ethnic minority groups, but only 3.5 per cent of the 50-59 years, 1.1 per cent of the 60 and over years and 0.5 per cent of the 75 and over years (A.M. Warnes). Nonetheless, it is evident that an ageing process is taking place in these groups as for the whole population. As they are for the time being generally concentrated in low-paying occupations and as their activity is relatively short, their pensions are much lower than for the native elderly.

In U.S.A., Black men live fewer total years, have fewer years of retirement, and spend more time disabled. In 1990, 10.1 per cent of White elderly, 22.5 per cent of Hispanics elderly and 33.8 per cent of Black elderly were poor, especially those who did not live with relatives or/and are women. Poverty rates among elderly American Indians were similar to those of Blacks.

In U.S.A. where migration flows have taken place in many instances long time ago, Black and Hispanic women are less likely to be covered by pension and health insurance on the same level as White (C. Taeuber).

4.2.2 The Cohort Effect of the Elderly

There is a very large heterogeneity among the cohorts who successively reach retirement age due to the historical, political and economic contexts of the different countries. The echo of economic and social crises may be found in the irregular flow of generations in the course of this century. The cohort effect should be distinguished from the age effect. Two persons of the same age may have experienced very different economic and social conditions. The distinction is not easy.

Let us take first the case of the industrialized countries. The generations born during the first decade, or a little later, whose demographic and economic weight is gradually dwindling, have lived through the last two world wars and the Depression and they have benefited very little from the legislation introduced since 1945, especially on pensions. These cohorts constitute the "very aged" within the elderly group.

The cohort effect is clear in the case of France, where in 1984 the resources of households whose head was aged 75 and over were 85.8 per cent of those households whose head was aged 55-64 (J. Gaymu). The same could be said of the other industrialized countries. The generations born between 1920 and 1930 have had a better fate, for they have participated in the period of full economic growth of the post-war years. They have benefited from the advanced social legislation introduced everywhere during that period. They constitute the "young aged" within the elderly group. With few debts, these cohorts have been able to harvest a relatively large patrimony. They are more frequently home owners. In Finland, for example, the age group 65-69 had the highest income of all the elderly (J. Lindgren). Demographically, these generations were relatively fertile, for they were the makers of the baby boom. The younger generations, especially those born since 1945, represent both the large generations born during the baby boom and the low-fertility generations which followed (theory of R. Easterlin). They are faced with unemployment on almost the same scale as during the Depression, in Western Europe at least, especially the young people who are suffering the repercussions of the oil crises and exceptionally high interest rates. However, young households have an increasing number of double incomes with the development of women's employment. Economically, these generations see their retirement threatened as a result of the demographic crisis. On the other hand, by the time they reach retirement age, their household incomes will be relatively comfortable. Of course, all of this will depend on long-term economic development, which is almost impossible to forecast.

With regard to the former socialist countries of Eastern Europe, it is likely that there will be a cohort effect between those who are presently retired with relatively low benefits, and younger generations whose retirement benefits will depend on the economic system under transformation. It is at this stage impossible to forecast how the new political climate will affect the fate of old people in the future, but it is probable that the change will take time.

As concerns the present and future economic conditions of the elderly in developing countries, at least those countries under review, it is likely that the family, still large, will continue to play an essential role in taking care of the elderly for decades ahead, before the state can start to take over. An important factor is affecting the situation of the elderly: migration. In many countries, both internal and international migrations are accelerating, often entailing family migrations. There is abundant literature showing how the difficulties of adaptation of the elderly contribute to deteriorating living conditions in the cities of developing countries.

In none of the countries with a pension scheme based on redistribution is the financing of pensions so arranged that each cohort is responsible for saving for its own old age. The demographic "shock waves" introduced by changes in cohort size create difficulties in avoiding "shock waves" in the benefits of the pension systems.

4.2.3 Sex Structure Effects

In all countries under review, the number of aged women is much higher than the number of aged men due to differences in life expectancy, and the sex ratio is changing rapidly with age, especially in the industrialized countries. In addition, the number of retired persons is much higher among women than among men, essentially for two reasons: higher life expectancy and earlier age of retirement for women.

In Canada in 1981, there were almost five times more widows than widowers in the age group 60 and over (B. Desjardins), and 21.1 per cent of widows in the age group 60-64, compared with only 4.2 per cent of widowers.

In China in 1982, the proportion of widows among women aged 60 and over was 58.09 per cent and the corresponding proportion of widowers was 26.91 per cent (J.-C. Chesnais and S.Wang). Most of the women depend on the support of their children: 36.7 per cent in cities, 44.1 per cent in small towns, 78.7 per cent in villages.

4.2.4 Age Structure Effects

As already mentioned, the cohort effect due to specific economic and demographic situations of the past should be distinguished from the individual age effect. As G. Vukovich has very rightly stated, there are differences in needs for a number of goods which are more typically consumed by the old.

In fact, three factors related to the ageing process influence consumption: at the macro level, cohort changes in consumption patterns; at the micro level, changes in consumer habits due to individual ageing (changes in taste, in lifestyle, etc.); still at the micro level, changes in needs, due for instance to health deterioration.

These modifications in consumption with age appear very clearly in France (J. Gaymu): the elderly prefer activities they can practise at home, such as reading or television. They stay at home in the evening rather than going out to the theatre or cinema. Clothing, transport, leisure (cinema, museum, etc.) are all under-represented in the budget of the elderly and this under-representation grows with age. Holidays away from home also decrease with age (35 per cent for the age group 70 and over *versus* 52 per cent for those aged 50-54). Nonetheless, substantial changes have recently emerged and, with the improvements in health and better income, the aged people are tending to become more mobile. They spend more on the car, telephone and holidays.

4.2.5 Effects of Former Branch of Activity

It is clear that the former branch and level of activity play an essential role on the living conditions of the elderly after retirement. Unfortunately, data providing income level of retirees by branch and level of activity before retirement are rare.

It would be interesting to know how many of those who reach retirement age stop working, by sector of activity, and in which sector of activity those who stay in the labour force are engaged. What is the relationship between activity before and after retirement?

All these questions should be analysed in relation to function of economic and social characteristics, especially the level of education.

4.3 Economic and Social Conditions of the Elderly

For many aged people, retirement marks a break in life, with loss of prestige and loss of contact with the human environment of former work companions. Retirement is a turning-point which is sometimes perceived as a release, but may also be a dramatic phase.

The economic conditions of the transition from working life to leisure depend in many instances on changes in the five points already mentioned: income, consumption, savings and assets, participation of some form in the labour force, and quality of housing associated with family arrangements. Let us take these points one by one. As can be seen, some general pictures emerge from the analysis of the country monographs.

4.3.1 The Four Sources of Income

The most recent detailed information concerning the various sources of income, as well as other characteristics of living conditions of the elderly, dates back to the mid-1980s or mid-1990s.

In most countries, pensions are the principal means of subsistence of the elderly, though with some variations.

In U.S.A., the Social Security Program was the major source of income for 61 per cent of beneficiaries in 1987. Private pensions are another important source of income for the elderly (C. Taeuber).

In socialist or former socialist countries, such as Hungary and Poland, the pension represents a relatively high share of all income for the elderly, and is in many cases their principal or even their only means of subsistence. In Poland, pensions represented 58.2 per cent of the average salary in 1987 (E. Fratzczak). As pension levels are still modest, the pensioners try to obtain a sizeable additional income from the employment they engage in after retirement. Half of the aged have to face low income situations in Hungary (G. Vukovich). The situation could be dramatic for widows and for former manual workers whose pensions are generally low.

In China, the principal means of subsistence of the elderly is the pension: 81.9 per cent for men in cities, 76.7 per cent for men in small towns. For women an important means of subsistence is their children: 36.7 per cent in cities, 44.1 per cent in small towns (J.-C. Chesnais and S. Wang).

In Cuba, the elderly receive the same income increases as the workers. It must be remembered that all workers and retirees receive free education and health care, and are charged low medical costs and rents. 51.8 per cent of the elderly receive an average income within the range of the workers' salaries (R. Castellon).

In Israel, the structure of the four sources of income in households headed by a person aged 65 and over in 1986-87 is: work 25 per cent, capital 27 per cent, pensions 20 per cent, and allowances and assistance 28 per cent (Z. Eisenbach and E. Sabatello).

In the Maltese Islands, according to a fairly comprehensive survey carried out in 1982 on the characteristics and life styles of the people aged 60 and over (Reno Camilleri), 55 per cent of the elderly depended entirely on their pension and 77 per cent considered their income was sufficient for their needs. Only 9 per cent were receiving some financial support from their family.

Continuing activity constitutes a second source of income in almost all countries, whether socialist or not, industrialized or developing, but with considerable differences in the volume of pensions and other incomes.

Sometimes there is a general limit in terms of number of hours the pensioners are allowed to spend in gainful employment annually, depending on the branch and limits in terms of salary (G. Vukovich). In Hungary, one fifth of all pensioners were engaged in gainful activities and this supplementary income amounted to almost one third of the total pension (G. Vukovich). The proportion is even higher for former manual workers in agriculture, who continue at least to cultivate plots of land.

The loss of income after retirement is compensated in the next years at least through part-time activity (G. Vukovich). In Canada, for the age group 65-69, the proportion of men in part-time activity is 28.9 per cent and of women 48.6 per cent (B. Desjardins).

Among women, work beyond the age of 60 is concentrated in the service sector: trade, restaurant, hotel (B. Desjardins).

A third source of income for aged people is their personal assets.

Generally speaking, in industrialized countries, the retired persons have lower pension income but higher wealth holdings than younger people.

In fact, in many countries the propensity to save grows with age, and the elderly have had a longer period to accumulate assets. Saving is more common among the elderly than in other age groups. This could be explained in part by their lower consumption as the retired grow older (J. Lindgren).

In many industrialized countries most elderly receive property income. And privately owned dwellings have spread very strongly since the 1950s. In the United Kingdom, where home-owning is one of the highest among developed countries, the majority of households with heads aged 60 years and over are homeowners, especially in the non-manual groups (A.M. Warnes).

In U.S.A., from the 1980 census, there is evidence that assets increase with age until the early eighties. Three-fourth of householders aged 65 or older own their homes, and elderly Whites are more likely than elderly Blacks or Hispanics to be homeowners. Also, elderly married couples are much more likely to be homeowners than elderly women who live alone.

In Finland, income from assets is largest among the households with an elderly head. In this country, savings formed 15 per cent of the disposable income of households in the age group 65 and over, growing from 11.5 per cent at ages 65-69, to 16.5 per cent at ages 70-74, and 22.9 per cent at ages 80 and over, while the figure is only 3.2 per cent for the non-pensioner households (J. Lindgren, Finland, and E. Thiltges, Belgium). In addition, the elderly often give away part of their disposable income in the form of donations and gifts, generally to members of their family to escape death duties, in countries where the pension level is relatively comfortable. It is estimated that in Finland, if savings were at the 1985 level in 2010, total savings would be 34 per cent higher, taking into account the projection of population and age structure (J. Lindgren).

In Canada, the elderly get into debt less than younger people. Old people consume less and save more (B. Desjardins).

In France as well, the elderly possess property in higher proportions than the other age groups. Income from patrimony represents 37.5 per cent of the budget of the population aged 65 and over. Average patrimony is highest in the age group 55-64, higher than in the group 65 and over, but still the latter has more patrimony than the average of all households (J. Gaymu). When the head of the household is a former "independent worker", income from assets rises to 34.9 per cent of the total income (J. Gaymu).

In Israel, resources from capital represent 27 per cent of all resources of the 65 years and over, *versus* 15 per cent for the households headed by a person aged 55-64 (Z. Eisenbach and E. Sabatello). About 67 per cent of the elderly own their homes (Z. Eisenbach and E. Sabatello).

A fourth source of income is the assistance provided to people who have to face very low-income situations or to those who are too old or too frail to work, or even to manage their households.

In Hungary, it is estimated that half of the elderly are in this situation, especially widows (G. Vukovich).

In France, an allowance called "*minimum vieillesse*" is provided to those whose income is below a minimum. The amount varies according to whether the person lives alone or as a couple (J. Gaymu). The allowance has increased substantially since 1970. In addition, 20 per cent of the elderly are eligible for the "*Fonds National de Solidarité*" provided to low income people; 70 per cent of the beneficiaries are women (J. Gaymu).

Public sources of income are essential for very old people with low incomes.

In Quebec, for the age group 65 and over, 58 per cent of income comes from state pensions, 24 per cent from salaries, 13 per cent from savings and 5 per cent from other sources (H. Gauthier). A "security programme for the elderly" explains that very few families whose head is aged 65 and over has an income below 10,000 dollars.

In Israel, for one third of the households headed by an elderly person, the only source of income is the pension and some allowances and assistance. The percentage of households depending on these sources alone increases with age (Z. Eisenbach and E. Sabatello).

In Kerala, the share of pensions in the total state government expenditure increased from 7 to 11 per cent between 1981-1982 and 1981-1988.

It could be said that, in most countries, the income of the elderly has improved substantially in the last two decades.

In some countries the change is spectacular. In U.S.A., in 1940, less than 1 per cent of the elderly received Social Security benefits and 26 per cent received general welfare assistance. In 1990, 92 per cent received Social Security benefits and 6 per cent received public assistance or supplemental Security Income.

The purchasing power of old people has increased more over the past two decades than in earlier periods. The analysis shows the increasing economic importance of old people, whose consumption habits are somewhat different from those of other age groups.

In Quebec, the average income of households whose head was aged 65 and over was 25 per cent higher in 1982 than it was in 1971, taking inflation into account. This increase is more substantial than for the other age groups, even though in 1982 the average income of households aged less than 65 was still 50 per cent higher than the average income of those aged 65 and over: 31,163 US\$ and 21,073 US\$ respectively (H. Gauthier). Nonetheless, if we take the income per head, the difference between the two categories becomes much less.

For Canada as a whole, the average income for men aged 65 and over has increased by 24.5 per cent between 1970 and 1980, and by 43.8 per cent for women. The higher increase of women's income was due to two factors: a catching up on men and an extension of women's careers.

In France, between 1970 and 1984, pensions of retired persons aged 65 and over increased by 1.8, while workers' salaries increased by 1.4 (J. Gaymu).

— André Babeau shows that, in six European countries, the purchasing power of the old-age benefits of persons aged 60 and over increased by between 3.2 and 6.6 per cent a year between 1970 and 1982. In France, on the incomes scale, the "young retired" occupy a more than respectable position, for they exceed the average income. The traditional image of old age, popularized in the novels of Emile Zola, in which old people live on low incomes, poorly housed and cared for, is changing radically from one generation to the next. This situation is constantly being consolidated by the growth of double-career households, even though the retirement incomes of women are still on average much lower than those of men.

Although in most countries the incomes of the elderly have improved, in some, like Poland, the runaway inflation has proved disadvantageous for them (E. Fraczkak).

In the Maltese Islands the improvement in the economic situation of the elderly is not very clear. According to Reno Camilleri, "Whereas, in the 1982 survey, 77 per cent thought their income was sufficient for their needs, the 1990 study found out that only 21 per cent of those interviewed considered their income adequate One plausible explanation could be that there has been a marked change in life styles and expectations of the Maltese elderly population which was not matched by enhanced economic benefits and assistance either by the state or by voluntary associations".

The end of working life has a substantial depressing effect on the resources of the elderly and therefore it is inaccurate to speak in general terms of "rich pensioners".

In Belgium the income of elderly people accounts for 60 per cent of active workers (E. Thiltges). In Israel, according to the 1986-87 Family Expenditure Survey, in urban households the average gross income of households headed by a person aged 65 and over was 40 per cent lower than that of households headed by a person aged 55-64. But as average household size is smaller for the elderly (1.9 compared to 3.0 persons), the per capita income is smaller by only 6 per cent (Z. Eisenbach and E. Sabatello).

In France, the drop in income is 15-20 per cent for men and 20 per cent for women. For the *cadres supérieurs* it is 25 per cent. The coefficient of replacement of the salary by the pension is on average 70 per cent (J. Gaymu), and the higher the last salary the lower the percentage. It goes without saying that the coefficient depends on the former activity. For farmers, the pension represents roughly half the former income. It is 40 per cent for "independent workers", 25 per cent for employers.

The picture is totally different for men and women. The coefficient of replacement of the salary by the pension is only 57.5 per cent for women. This low coefficient is partly due to women's shorter career durations. We can anticipate that the extension of women's careers will tend to narrow down the difference between men and women.

Surprisingly enough, in Quebec, the income situation of women aged 65 and over is better than that of the age group 55-64, as the loss of income from employment is more than compensated by other sources of income (H. Gauthier).

For the whole of Canada, for women aged 65-69, public resources account for 43.8 per cent of incomes, savings 27 per cent, work 12.2 per cent and pensions only 10.7 per cent. For men the percentages are respectively 26.1, 18.9, 26.3 and 16.7 (B. Desjardins).

For Canada, the drop in the average salary of men between ages 60-64 and 65-69 is considerable (from 11,279 US\$ to 3,461 US\$) and is not entirely compensated by pensions and other sources of income. The corresponding drop in total income is 33 per cent and, from ages 65-69 to 70-74, a drop of 25 per cent is noted (B. Desjardins).

In Australia, the average income of the population aged 65 and over drops by 40 per cent compared with age group 55-59 (D. Rowland).

In most developing countries, only part of the working population is covered by a pension programme.

Furthermore, the pension level appears inadequate to meet the cost of the basic requirements of the elderly, and this leads many pensioners to continue in the labour force. The pension is seldom adequate if the pensioner lives alone and has to pay rent for accommodation.

The social security system for the elderly in China (Wu Cangping and Du Peng) was launched a long time ago, in 1951, and has been developed step by step, but it has still a long way to go before it reaches cruising speed, due to the enormous size of the working population and the state of the economy. It includes two categories: retirement and welfare benefits. The retirement benefit is reserved for workers and staff members of state-run and collective-run enterprises as well as governmental organizations, essentially in urban areas. The welfare part consists of ensuring the "five guarantees" (food, clothing, housing, medical care and burial expenses) and is reserved for the rural population, and childless and infirm old persons in urban areas. Most of the rural elderly live on their own income and/or are supported by their children. In other words, social security pensions for the elderly do not exist among the rural population. The lack of financial autonomy results in the elderly needing to co-reside with their children.

According to a Chinese survey in 1987, pensions accounted for 63.7 per cent of the income of elderly in the cities, 56.3 per cent in towns and only 4.7 per cent in rural areas. Retirees from the state-owned enterprises enjoy a significantly higher pension than those from collective enterprises.

In Kerala, of the 8 million workers in 1981, only 1.1 million were in the organised sector and consequently were covered by pension programmes. The other workers were without any social security protection.

In all countries, the retirement income is much lower for women than it is for men.

Women are eligible for retirement 5 years earlier than men in most countries, and therefore the retirement benefit is also lower for women. In more general terms, the lower pension benefits for women can be explained by four main factors:

- Career duration is much shorter for women than for men
- Women's last activity is less lucrative
- Women are generally paid less than men for the same job
- The rate of widowhood is much higher for women than for men, and the income much lower for widows than for widowers.

We can expect that, with the extension of women's careers, the income gap will be reduced somewhat, but this will take time.

In France, women's pension benefits are 57.5 per cent those of men (J. Gaymu). This difference varies with the nature of the last activity. It is much more pronounced for the "independent workers" than for cadres or employees.

In Quebec, the average income of the age group 65 and over is 64 per cent higher for men than for women. As already noted, the income situation of women is better for the age group 65 and over than for the age group 55-64, as the loss of income

from employment is more than compensated by the benefits from other sources of income, especially public resources (public pensions and allowances).

For Canada as a whole, the average income has increased faster for women than for men: between 1970 and 1980, 43.8 per cent for women and 24.5 per cent for men, due to a catching up of women's pensions and an extension of their careers. But in 1980 the income of men aged 60 and over was still more than twice the income of the corresponding women: 13,128 dollars and 6,595 dollars respectively (B. Desjardins).

The more unfavourable conditions of elderly women are especially conspicuous when we consider the elderly living alone. In Canada, for the age group 65-69, the average income is 13,064 dollars for men living alone and 9,808 dollars for women of the same age group living alone (B. Desjardins).

In Australia, aged women have on average lower incomes at all ages than aged men: for the age group 65 and over, men's weekly income is \$124 compared with \$97 for women (D.T. Rowland).

In Kerala, even though men and women are theoretically eligible for pensions, in actual practice, if the husband receives a pension, the wife's application tends to be rejected.

The distribution of incomes for the elderly is concentrated in the lower income groups.

This is shown by the fact that the median income is lower than the average income. In Canada, for example, for males aged 65-69, the median income in 1980 was 9,728 dollars and the average income 13,732 dollars. For women of the same age, the figures are respectively 4,995 dollars and 7,100 dollars. The same observation can be made for Quebec, where for males aged 65-74 the median income in 1982 was 8,943 dollars and the average income 12,457 dollars, while for women the figures are respectively 5,818 dollars and 7,599 dollars (H. Gauthier).

4.3.2 Consumer Patterns

What are the motivations to stay in the labour force after 60-65? Is it by necessity or to have access to more luxury? The advantages of staying in the labour force, especially in part-time work, are quite evident in some countries and are mainly intended to get a better level of consumption or merely to keep active.

To what extent does the ageing process influence the volume and structure of consumption in the different countries?

The modification of the age structure will produce a slow reduction in the consumption of goods and services associated with childhood and a slow increase in the consumption of certain goods and services connected with the older ages. Even if the rise in demands for health care is by no means confined to the elderly, in all the countries under review it is clear that medical and health expenditures will increase as well as expenditures for housing and food.

The ageing process itself causes the growth of medical and health expenditures. In U.S.A., three out of five public health care dollars were spent in 1987 for the elderly, up from one-half in 1977 (C.Taeuber), and it is likely that this proportion will continue growing. Personal health care expenditures increase constantly with age. In U.S.A., they ranged in 1987 from US\$ 3700 for persons 65-69 years old to nearly US\$ 9200 for persons 85 years and older (C.Taeuber). Hospitalization accounts for most of the health expenditures. According to J. Lindgren, in the year 2030 about half of the health expenditure will go on the elderly in Finland. And the cost of hospital treatment will show the most significant increase.

In Finland, projections for the period 1985-2010 have been made to assess the effect of the ageing process on the future growth and structure of consumption. The data utilized are taken from the last household consumption survey in 1985 and the latest demographic household projections. The calculations are based on the following assumptions:

-- Future consumption will be affected by a modest increase in the GDP, by only one-half per cent per year, or 13 per cent from 1985 to 2010

-- The structure of consumption in the different age groups will be the same in 2010 as in 1985. This assumption is not very likely, since economic growth will entail rising incomes and a change in consumer patterns, especially among the elderly, whose income will continue to rise more than that of other age groups

-- Pensions will amount to 60 per cent of the wages or income before retirement, a percentage slightly higher than at present. The elderly will have higher pensions than those who are now retired

-- The total population will be practically the same in 1985 as in 2010, and the number of households in 2010 is based on the assumption that it will vary in the same proportion as the age groups. The growth of households from 1985 to 2010 is estimated at 9.2 per cent, with an increase of 31.5 per cent for elderly households.

The results of the calculations show that total private consumption expenditure will grow only slightly as a direct consequence of ageing: 3.9 per cent. Medical and health care expenditures exhibit, as expected, the most important increase: 11.1 per cent. The second largest growth, 7.7 per cent, will be in housing expenditure. The third largest will be on food. It could be said that more people in higher income groups, due to more people in older age groups, explain in large part the increase of consumption in medical and health care, housing and food.

The consumer patterns of the elderly are very similar in Canada or Quebec and in Finland (B. Desjardins). In Israel, for households headed by a person aged 65 and over, the highest single item of expenditure is housing (22.6 per cent *versus* 16.3 per cent for all households), followed by food (17.7 per cent *versus* 16.8 per cent), housing maintenance (10.8 per cent *versus* 8.9 per cent), transport and communication (10.6 per cent *versus* 14.0 per cent), fruit and vegetables (7.9 per cent *versus* 6.5 per cent), education, culture and entertainment (7.8 per cent *versus* 12.6 per cent), and health (6.5 per cent *versus* 5.2 per cent).

In France, as in Finland, food and housing are two large items which increase with age. The share of housing in the total expenditure increased between 1979 and 1985 by 33.8 per cent for households headed by a person of 75 years and over, while the increase was only 11.8 per cent for households headed by a person aged 55-64 (J. Gaymu). With increasing age, the resources of the elderly are more and more devoted to food and housing and less and less to clothes, transport, culture and leisure. The elderly prefer leisure activities that can be practised at home, such as television, radio and reading. Nonetheless, a recent trend shows that "young aged" people, relatively well-educated, in good health and well-off, spend more on holidays, car, theatre, etc. (J. Gaymu).

The same observation can be made for Australia (D. Rowland), because aged people fully own their assets, and because they have leisure time. Surprisingly, in Australia, consumers in households headed by a person aged 65 and over spend three times more on holidays and twice as much on hairdressing and beauty services as households headed by a 30-year old (D. Rowland).

Expenditure patterns depend on the principal source of income of the households. In many instances, durable goods are bought before retirement. In China, as in other socialist countries, the expenditure on housing is minimal. A survey in Shanghai in 1987 showed that at least 60 per cent of the elderly's expenditure is devoted to food (Wu Cangping and Du Peng). Interesting information is given by J.-C. Chesnais and S. Wang on nutritional status as reported by the elderly in the 1987 survey. In rural areas, the majority (53 per cent) considered that they were inadequately nourished.

4.3.3 Participation in the Labour Force

During the last two decades, the age of retirement has tended to fall in most countries.

There are many reasons for this trend: the decline of agriculture, increased unemployment, better productivity, utilization of sophisticated technology, higher incomes for the elderly in industrialized countries, changes in lifestyle placing more emphasis on leisure, etc. But there is still a wide variety of situations concerning retirement age and the requirements for obtaining a pension. In industrialized countries there is a strong positive association between activities requiring educational attainment and working life expectancies.

The official retirement age is approaching 60 years for men and 55 years for women in developed as well as in developing countries, with market economy and centrally planned economy alike.

In France, for instance, 30 per cent of men aged 70 and over were still in the labour force in 1962. Twenty years later, the labour force participation rate for this age group was as low as 2.9 per cent (J. Gaymu). Even for women, the rate for the age group 65-69 was divided by 4 between 1962 and 1982; it amounted to only 4 per cent in 1988. The official age of retirement for men fell from 65 to 60 in April 1983. The lowering of retirement age actually started as early as 1962.

Belgium has the lowest rate of activity for the age-group of 50 years and over (E. Thiltges). Less than 25 per cent were

in 1989 still active beyond the age of full pension eligibility (45 years of pension contribution for men and 40 years for women, much higher than in France for example). In Quebec, the labour force participation of men aged 60-64 fell from 81.0 per cent in 1951 to 65.8 per cent in 1981. For the age group 70 and over, the decrease was from 21.0 per cent to 9.8 per cent (H. Gauthier). In Australia, a dramatic fall in retirement age has taken place since 1960-1970. The participation rate of men aged 60-64 fell from 80 per cent in 1961 to 12.3 per cent in 1981, and for women from 26.5 per cent to 12.3 per cent (D. Rowland).

Blue-collar workers are everywhere leaving the labour force earlier than white-collar workers.

For women, the situation is more complex than for men. In Quebec, for the age group 60-64, the participation rate rose from 12.1 per cent in 1951 to 22.8 per cent in 1981, and for women aged 70 and over the rate did not change significantly from 4 per cent. For all Canada, the rate rose from 12.4 per cent in 1951 to 29.1 per cent in 1981 (B. Desjardins). In Australia, the same trend can be observed: a rise in participation for women aged 55-59 from 10.6 per cent to 17.2 per cent in 1991. It is projected that the rate will reach 24.2 per cent in 2001 (D. Rowland). The same tendency can be seen in Hungary, where female labour force participation rates have increased substantially above age 40, mainly in order to acquire the right to an old age pension (G. Vukovich). Women seem to be less willing than men to retire when they reach retirement age.

As noted by C. Taeuber for the U.S.A., women have become a larger share of the work force, partly because so many men are leaving the labour force at earlier ages. Among the surveys undertaken in the U.S.A., it is shown that the increase of participation of women and the levels obtained in old age are the highest, even if women often reduce the length of their work week and the number of weeks they work: for the women of 55-64 years old the work force participation has increased from 27 per cent in 1950 to 45 per cent in 1990 (C. Taeuber).

As women, until now, have participated less than men in the labour force and as their activities are less lucrative, their pension benefits are much lower.

It seems feasible that in the years ahead male labour force participation rates will not fall much more, for retirement age will tend to stabilize, or even move upwards. On the contrary, as many women do not afford to retire as early as they wish, it is likely that the participation rates of elderly women will increase to allow them to have been in the labour force long enough to have a decent pension in old age, especially as many are widowed.

Early retirement schemes have become attractive, or almost forced by circumstances.

As D. Rowland noted, "discouraged workers", after searching unsuccessfully for a job, may withdraw from the labour force. There is in many instances a close relationship between unemployment and early retirement. The phenomenon of discouragement in job hunting affects older workers more often than younger ones. The share of long-term unemployment as a percentage of total unemployment has increased in Europe over the last decade and is particularly high among older workers (L. Tabah).

The early retirement introduced in all industrialized countries in the 1980s has become highly popular, especially with the reorganization of enterprises due to the economic crisis and modernization. In some countries, such as France, retirement age has turned into a sensitive political issue.

In Finland in 1988, 13.2 per cent of the age group 55-64 were on unemployment benefit (J. Lindgren). Early retirement benefits start in many countries before the age of 60. In France, in March 1985, out of 153,000 men aged 60, 44,000 were on early retirement and 109,000 on retirement (J. Gaymu). A 1986 survey found that 45 per cent of men aged 45 and over and 68 per cent of women of the same age group retired voluntarily for reasons other than ill health or unemployment.

Paradoxically in Belgium early-retired persons in the private sectors are better off than fully-retired persons (E. Thiltges). A political will towards moderation in the income of early-retired elderly is noticeable in Belgium as in other countries.

As a result of early retirement and increased life expectancy, men in developed countries are spending more years in retirement and less in disability. In the U.S.A. men who are 55 years would on average live about 21 additional years, and during those years they would spend nearly 9 additional years in the labour force, 12 years in retirement and just under 1 year in disability.

In Australia, it is estimated that 86 per cent of the male labour force at ages 55-64 between 1973 and 1979 experienced voluntary early retirement.

An important proportion of those who remain in the labour force after age 65 work on a part-time basis, mainly in the service sector or agriculture.

Nonetheless the elderly still in the labour force after retirement enjoy less protection for their jobs than younger workers.

In Canada, in 1981, almost 20 per cent of men and 40 per cent of women aged 60 and over worked part-time (B. Desjardins). It is essentially between ages 60-64 and 65-69 for men that part-time work increases.

An interesting and surprising phenomenon is noticeable in Hungary: those pensioners who work after retirement have higher pensions than those who do not. This is partly because the former are better educated and find employment more easily (G. Vukovich). Another reason is that survivors' pensions are relatively low, since the survivors are often women.

As seems logical, it is in those countries where retirement benefits are lowest that the participation rates of the elderly are the highest. Many of those who reach retirement age do not stop working in order to get additional earned income.

In Hungary, the labour force participation of the elderly fell, as in other countries, between 1970 and 1984, from 43.7 per cent to 5.5 per cent for men, and from 17.1 per cent to 3.7 per cent for women. But, in fact, a time budget survey has shown that pensioners spend considerable time on earning income and producing for their own consumption (G. Vukovich). One has to remember that, in socialist countries, the elderly cannot rely on their assets.

In China, the situation varies considerably from urban to rural areas. The urban elderly retire mostly after the age of 50-60, and their employment rate is relatively low: 18 per cent in cities and 13.2 per cent in towns, in 1987 (Wu Cangping and Du Peng). In contrast, the labour force participation of the rural elderly is extremely high: 53 per cent for men and 12.4 per cent for women, as a considerable portion of the rural elderly have to support themselves.

In Cuba, a trend of decreasing participation of the elderly started many decades ago. The employment rate of urban men aged 65 and over fell from 51.5 per cent in 1953 to 17.8 per cent in 1981. For women, the figures are respectively 8.3 per cent and 2.0 per cent. In rural areas, the decline was from 65.8 to 29.7 per cent and from 9.1 to 2.0 per cent for men and women respectively.

In Guatemala, 71.5 per cent of the male population aged 60 and over were still in the labour force in 1986-87 and 16.0 per cent of the female population of the same age group (J. Arias de Blois). For the age group 60-64, the percentages for men and women were 88.5 and 20.6 respectively. These very high percentages are due to the necessity for the elderly to continue working. In the male labour force, the elderly are essentially engaged in agriculture and the service sector and, in the female labour force, in trade (J. Arias de Blois).

As has been noted for France (J. Gaymu), with ageing the scope of occupations is reduced to a few activities: for urban males - trade, managerial and professional posts, services, technical support. In rural areas, on the contrary, the occupational structure of the elderly shows little difference from that of pre-retirement adults.

The retirement age varies with the occupation. Employees leave the workforce first, followed by tradesmen, craftsmen and finally farmers.

In recent decades, unemployment has had a clear negative impact on the possibility for the elderly to find work.

In all industrialized countries, a process of general ageing of the labour force is noticeable.

Two opposite effects are taking place: a bulging in the most aged part of the pyramid, and simultaneously a shrinkage in the age groups of full activity. This is due to the repercussion of the waves caused in the age structure by the passage of the baby boomers and the succeeding cohorts through the working ages, producing a slow upturn in the proportion in the age group 20-59, followed by a fairly sharp drop due to the fertility decline of the past 20 years.

4.3.4 The Ratio of Retirees to Workers

Demographic projections for the majority of the industrial countries show that the share of persons of working age (15-64) in the total population will be higher in 2000 than it was in 1980. But after the beginning of the next century, in all countries, there will be a gradual reduction in the proportion of persons of working age. Almost everywhere, the percentage

The projections also show that the deterioration in the ratio of persons aged 20-59 to those aged 60 and over will be felt slowly at first, owing to the baby boom which swells the numbers in the higher working ages. But it will speed up from 2005, the year which all the long-term calculations indicate is a turning-point, for that is when the baby boom generations will reach retirement age and the number of persons of working age will be reduced by the fertility decline which began in 1964-65 in most countries.

Let us take the case of France, where the total fertility rate has been of the order of 1.8 for about 15 years. The ratio of persons aged 20-59 to those aged 60 and over, which at present is about 2.8, will move to 2.65 in 2005 and to 1.62 in 2035. The calculations clearly show that, between now and the year 2005, there will be slightly fewer than three persons aged 20-59 for one aged 60 and over, but that thereafter, if the present fertility rates remain unchanged, the ratio will move dangerously close to 1.5 working age adults for one elderly person.

It is not sufficient to calculate the ratio between the persons of working age and those beyond working age in the upper age groups in order to establish the ratio between workers and non-workers. Labour force participation rates must also be applied to the numbers of persons in the different age groups. Participation rates in most industrialized countries have tended to decline for males. This decline is caused by the upper working ages, owing to the later entry of young people into working life and to increasingly early retirement.

The same phenomenon of a shrinking working population and a broadening of the top of the population pyramid will be observed in Finland (J. Lindgren). It is expected that the labour force will diminish by 2 per cent from 2000 to 2005 and by 3.5 per cent from 2005 to 2010. The participation rate of the population aged 15-64 will decrease from 76 per cent in 2000 to 73 per cent in 2010.

In Poland, a similar and interesting calculation of future pensions has been made on the basis of diverse scenarios (E. Fratzczak). According to a projection that assumes a constant fertility rate of 2.31 -- actual rate in 1984-85 -- and life expectancy at birth of 66.6 years for males and 74.9 years for females till the year 2050, the pension expenditure will grow by 15 per cent from 1985 to 2000. If fertility declines gradually to the level of 1.6 in 2005, the growth will be 22 per cent. Beyond the year 2000, assuming constant fertility, the pension expenditure will equal 155 per cent of the 1989 level in the first scenario and 200 per cent in the second scenario.

The analysis shows that, in Poland as in France and all industrialized countries, the most significant growth in expenditure will occur between 2000 and 2015, when the baby boomers retire.

In the meantime, the size of the labour force will increase till the year 2050 in the first scenario, and till the year 2030 in the second scenario, and thereafter there will be a constant decrease.

As a consequence of these tendencies, the ratio of pensioners to members of the labour force will constantly increase in the first scenario, from 0.27 in 1985 to 0.34 in 2015, and in the second scenario from 0.35 to 0.41 in 2015, 0.50 in 2030 and 0.71 in 2050. In this second scenario, the burden due to old age will approximately double from 1985 to 2030 and will continue to increase in the second part of the next century.

It could be easily demonstrated that these rising ratios will be reached much earlier in Western European countries, especially Germany and Italy, where the fertility rates in 1985 were much lower than in Poland or France.

In the Maltese Islands, the persons aged 61 and over amount to 22.6 per cent of the 16-60 age group. As a proportion of the total population, the age group of 61 and over will grow from 13.8 per cent in 1990 to 15.2 per cent in the year 2000 and 21.2 per cent of the 2020 projected population (Reno Camilleri).

4.3.5 Living Arrangements and Housing Characteristics of the Elderly

With the decline of fertility and mortality, the family shape is shrinking horizontally -- few children in the last generation -- and is stretching out vertically -- coexistence of various generations within the same family.

Research on household composition shows that, in multi-generation families in modern societies, fewer elderly share the household of their descendants, contrary to what is commonly observed in traditional societies.

The propensity for the older persons to continue living independently and alone has increased recently in all developed countries. In the United Kingdom, for example, a third of elderly men and every other elderly woman live alone (A.M. Warnes). In modern societies, preference is often given to separate households for the elderly because their improved incomes allow them to live in their own dwelling, at least until they reach a frail old age. As observed earlier in this chapter, the elderly often own their dwelling, due to various historical circumstances, particularly the opportunity, in previous decades of relatively good economic environment with low interest rates, to acquire their house or apartment.

Many factors influence the living arrangements of the elderly, such as: income of the elderly and of their children, health, home ownership, size of the family, marital status of the elderly and of their children, ethnicity, sex of the children (daughters are more inclined than sons to take care of the elderly), composition of the family (those who are still raising their children may not be able to support their aged parents as well), distance between the residence of the family and that of the elderly, urban or rural location, etc.

Many family events in the later life cycle could also affect the living arrangements of the elderly, such as the death of the spouse, migration of the family, disability or ill health of the elderly, etc.

There is a clear tendency for the elderly to live apart from their children in the United States, Australia, Western Europe, and in most of the industrialized countries. In western societies the elderly prefer "intimacy at a distance" with their kin for as long as possible (D. Rowland). In many instances, co-residence of generations results from a lack of choice. Even when an elderly person becomes frail, alternative support arrangements are preferred.

In Australia, 13 per cent of men and 29 per cent of women aged 65 and over live alone, while the figure for widows is 46 per cent (D. Rowland). The distance between the residence of the elderly and the residence of the offspring can play an important role in deciding on the living arrangements, as was said earlier. In Sydney, 40 per cent of the elderly who had children but lived alone had at least one son or daughter within 8 kilometres, and over 80 per cent had at least one in Sydney.

When living arrangements are made, they result in households of two rather than three generations (D. Rowland). In Canada, three out of ten households have at least one elderly person, and among them 39 per cent have at least two elderly (B. Desjardins). The aged persons often opt to live with their spouse on their own and when they become widowed they live alone for as long as possible. Elderly men live in couples more often than women, in part because their life expectancy is lower than that of women.

Contacts and visits between generations are strong and evident children's neglect is rare. In the United Kingdom there is no significant effect of social class upon children's visiting frequency. These contacts depend to some extent on migrations and there are differentials in migration. In contrast with the relative immobility of manual workers, the higher status groups move more and over longer distances, and consequently are more dispersed. Besides, adult children are moving even more than their parents over long distances. Nonetheless the moves tend to be closer towards the home of the parents for all social groups.

Some studies have provided interesting information on the amenities and equipment of the houses or apartments where the elderly live. In Quebec, 53 per cent of households headed by a person aged 65-74 are home owners -- 43 per cent without a mortgage and 10 per cent with a mortgage. Almost all have bathroom, toilet, refrigerator and telephone, and 57 per cent have a car. But for the age group 75 and over, the proportion having a car falls to 29 per cent, due in all likelihood to health problems. The surface area of their homes is relatively large, in part due to the fact that they stay on in the house where they lived with their children (H. Gauthier).

In France, as well, a large proportion of aged persons own their home, but it seems that there are fewer amenities than in the average household, due partly to generation consequences as the house was often bought many years ago, and partly to lack of resources for modernizing it (J. Gaymu). The running costs - heating, tax, repairs, etc. - for the house weigh more in the budget of old people than in that of younger heads of households. In general, the elderly have the same type of home equipment as the younger heads of household, but somewhat less sophisticated or less modern.

In Cuba, in 1985, 91 per cent of all households had a television set, 50 per cent a refrigerator, 59 per cent a washing machine and, according to Raul H. Castellon, the elderly have the same kind of home facilities as other households.

No information is available on home equipment in Hungary, Poland and China in this series of monographs.

5. Conclusion

Demographic Aspects

In the light of all the statistical data presented in this project, one undeniable reality emerges: the advent of the ageing process of the population is underway in all countries and regions of the world. Whether in Africa, Europe, Asia or America, old persons become more and more important in absolute numbers as well as in the proportion of the population as a whole.

Now, the extent of this ageing process is tightly linked to the usual definition of the threshold to old age. We have seen that, by delimiting this threshold according to the number of years left to live, we greatly circumscribe the phenomenon at least in quantitative terms. It remains to be seen whether the years gained in life expectancy correspond above all to the additional years in good health. For if they corresponded more to years spent in a state of incapacity, the impact of the phenomenon of the ageing process would be just as heavy to bear as the most pessimistic estimates lead us to believe.

In the long-term evolution of our societies, every social or economic policy must bear this fact in mind. Hence it appears vital to us to pursue research and analysis on the phenomenon of the ageing process so as to develop original tools that will permit a better adaptation of societies to the present and future demographic situation.

Health Aspects

Population ageing is a clear manifestation of the remarkable demographic transition of the 20th century, in which replacement fertility levels have come to characterize most developed countries in the world today. The transition is also associated with continuing reductions in mortality levels and, thereby, extended survival. Notably these mortality declines have recently taken place at the advanced ages, which has led not only to growth of older populations, but especially to rapid growth of the oldest old age groups.

Population ageing, especially the ageing of the aged population itself, has had a major impact on the relative health status of older persons and the health care systems that increasingly have been called upon to serve the growing numbers of older persons. The country monographs have appropriately captured these trends and patterns for the most part, but in only a few cases have they attempted to probe deeply into the dynamic of changes in health status and to forecast future developments.

The field of medical demography is now bringing together demographers, epidemiologists and social scientists to examine, in more systematic ways, the complex ways that ageing impacts on health, both for individuals and aggregates. There is growing recognition that ageing does not necessarily involve immutable progression toward ill-health, disabilities and long-term care. Indeed, adverse health effects may be prevented, modified, delayed and even reversed by interventions. To do so requires further research on risk factors, health promotion and the role of technology. Moreover, research of a longitudinal nature is required to analyse how transitions in health status occur, especially for disadvantaged population groups.

These new research efforts serve to provide the data needed to assess societal level changes in both life expectancy and healthy life expectancy. Such demographic approaches are instrumental for health care system planning and implementation. The use of models enable us to examine future scenarios as population ageing proceeds and to inform policy analysts as to the financial consequences of these developments.

The monographs in the series have provided us with baseline data and initial conclusions about population ageing and health. The country monographs and cross-national analyses of the 1990s should provide a much deeper understanding of the dynamics of health status changes and likely health care system demands to be faced in future years.

Essentially, it is important to emphasize that the future should not be viewed with pessimism. Indeed, there are many positive signs that future cohorts succeeding into the older ages will be fitter, more educated, and economically better equipped to face the challenges of their extended lifetimes. So too, improved knowledge about ageing and health will enable our societies to more effectively respond to the consequences of further population ageing.

Economic and Social Aspects

There is considerable variety in the level of ageing among the countries under review, as demonstrated in the chapter on demographic aspects of ageing. Paradoxically, the market economy countries, which are most advanced in the ageing process, are also the best prepared to face the problems relating to resources and living conditions of the elderly. In these countries, the well-being of the aged has constantly improved in the last two decades. The economic and social conditions of the elderly have been less influenced by the demographic process, which has increased their numbers, than by the general development of these countries. Nonetheless, there is a cohort effect on their living conditions. The so-called "younger aged" currently near or beyond retirement, who have participated during the period of full economic growth of the post-war years and were able to harvest a relatively large patrimony, securing in particular home ownership, are especially advantaged with respect to older as well as to younger cohorts.

In general terms, there is more unequal distribution of income among the elderly than in the other age groups. Strong cohort differences as well as social differentials are noticeable in all industrialized countries for subgroups defined by characteristics, such as age, sex, race, ethnicity, marital status, living arrangements, education attainment, former occupational status and work history.

The improvement in the economic situation of the elderly is a new historical phenomenon.

In all countries, developed or developing, with market or centrally planned economy, with moderate or advanced ageing, pensions are the principal means of subsistence for the elderly. This is especially true in former socialist countries of Eastern Europe or in Cuba, where the pension is almost the only source of income for the elderly, especially in urban areas. The situation is quite different in China where the issue of ageing is relatively new, and is caused by the abrupt fertility decline. In this country, the elderly are eligible for pensions only if they are former workers of state enterprises and institutions and are living in urban areas. The rural elderly live on their own resources and are mainly supported by their children. As Wu Cangping and Du Peng have indicated, the social security system for the elderly has been revised gradually in a more liberal way since its inception in 1951, but there is still a long way to go to improve the economic conditions of the elderly, especially in rural areas.

In Western countries, contrary to socialist countries, pensioners can rely not only on the social security system, which provides most of their disposable income, but also on resources from assets and savings made during their working life. In these countries a large variation in wealth is noticeable. While many households have little or no assets, others have a substantial patrimony, especially if the value of their homes is taken into consideration. Besides, these assets increase with age 10 or 15 years after retirement contrary to the life cycle hypothesis that saving declines in this period of life. It is likely that, in the future, sources of income other than pensions will gain in importance, due to the shrinkage of the labour force and the swelling in the number of retired persons.

In many countries - socialist, formerly socialist or with market economy - the poorest strata of the population receive some form of public support, such as allowances. In China, for a large sector of the population, especially in rural areas, public assistance takes the form of aid in kind or in services, expressed by the "Five guarantees" (food, clothing, housing, medical care and burial expenses). In rich countries, it takes the form of special allowances, such as the "*minimum-vieillesse*" in France, mainly addressed to the older cohorts for whom pensions do not ensure a decent living. In the USA, the poorest people receive some aid in terms of medical services (Medicaid) and a pension is paid to all citizens, nationals or non-nationals, beyond the age of 60 who have worked for at least ten years in the country.

In all countries, the postwar decline in old age economic activity rates has continued during the 1980s. Simultaneously a propensity was developed to work on part-time basis in occupations amenable to partial activity. Moreover, early retirement eligibility has increased constantly. Those who remain in the labour force after retirement age pertain essentially to the agriculture or the white-collar sectors. Early retirement is more frequent in blue-collar occupations than in the highest social groups.

The cessation of activity has in all countries a depressing effect on resources after retirement, which is differently felt according to the nature and extent of resources, their lack or otherwise, available to pensioners. To take one example, in Quebec the average income of households headed by a person of less than 65 years is 48 per cent higher than the average income of the households headed by a person aged 65 or over. Generally speaking, the pension represents between 50 and 70 per cent of the last salary.

Continuing work means an additional source of income to the pensioner in all countries. Apparently the majority of those who reach retirement age withdraw from the labour force, but many pensioners do not stop working, especially when the pension benefits are insufficient for a decent living, and when the pensioners have the physical capacity to remain in the labour force. In many instances, the work after retirement is on a part-time basis. In some countries, there are limits to the duration of work and/or additional income received by retired persons. In rural areas the elderly often continue producing food for their own consumption. In China, the majority of the elderly labour force is engaged in farming.

In all the countries under review, whether developed or developing, with socialist or market economy, aged women constitute a disadvantaged sub-population, particularly when they are widows. This is the case for the majority of elderly women, since the male-female ratio is of the order of 70 for the age group 60-69, 55 for the age group 70-79 and less than 40 for the age group 80 and over. Women's pension benefits are generally low due to a number of circumstances: less time spent in the labour force, and therefore lower pension claims, less salary as the nature of the former activity was less lucrative than that of men. The situation may be tragic for the oldest cohorts, when widows cannot rely on children or the family. The only solution may be to live in an institution. That is why the living arrangements of elderly women are of special interest. In the West, the inferiority of their situation is to some extent compensated by public allowances provided to the poorest stratum of the society. In other countries, women seem less inclined than men to retire after reaching retirement age. They stay in the labour force more through necessity than to acquire luxuries. Nonetheless, it may be expected that, with the progression of women's careers, the differences between men's and women's pensions will somewhat lessen.

The surveys on living arrangements of the elderly show a divergence between the situation in the West, where the elderly generally prefer to live separately from their family in accordance with the formula "intimacy at a distance", while in most developing countries the elderly have no alternative but to share the dwelling of their family, in households often with three or four generations. In all developed countries the average household size has fallen and increasingly elderly people, especially elderly women, live alone. And those who live alone are more likely to live in poor circumstances than do married couples. The family constitutes the main, or even the only, support of the elderly in developing countries, whereas in developed countries the elderly can count on some form of back-up from the public sector.

In developed countries, the ageing process is influencing the amount and structure of consumption. The impact is for the time being not considerable, but might grow significantly in future. It is expected that in Finland, for example, the medical and health care costs will increase between 1985 and 2010 by a total of 22 per cent (J. Lindgren). In all Western countries, medical and health expenditures, especially in hospital treatment, and the cost of housing and food are increasing with the advance of age.

It would be interesting to analyse the former sector of activity of those who reach retirement age and decide to withdraw from the labour force, and concomitantly the sector of activity in which those who decide to stay in the labour force are engaged. What are the demographic (sex, age, residence), economic and social characteristics of both groups? As G. Vukovich noted for Hungary, the pensions of those who decide to stay in the labour force after retirement are, on average, higher than the pensions of those who do not have jobs. There are many reasons for this: those who can perform activities beyond retirement age are younger (cohort effect), in better health, and are likely to have higher levels of education.

In all developed countries, the ratio of the aged to the working population will deteriorate considerably during and after the first decade of the next century. The shrinking labour force, due to the fertility decline and the expanding numbers of aged persons, in turn due to the baby boomers reaching retirement age and to the decline in mortality, will entail growing difficulties for the retirement systems. The question of the funding of pensions by each cohort saving for its own old age is extremely doubtful in countries where the retirement schemes are based on redistribution systems, "pay as you go", and where demographic "shock waves" introduce large oscillations in population trends. In all industrialized countries, increased incentives have developed for more personal responsibility for future retirement and for private pensions at all ages of economic activity.

In all developed countries, the labour force ages as the "strong" cohorts born during the baby boom pass into the upper ages of the labour force while the "light" cohorts born since 1965 arrive at working age. The labour force is not only ageing but is also shrinking. The issue of the modification in the retirement age due to the growing shortage of the labour force is highlighted in some monographs. Finland raises rightly the question of the interrelationships between retirement, decreasing labour force, labour productivity, mobilisation of unemployed and immigration (J. Lindgren).

Better educated elderly tend to be healthier longer and better off economically. In most developed countries offering data for elderly migrants or elderly minority groups, their living conditions and pensions are much lower than for the native elderly population, due to lower occupations and shorter period of paid activity. In U.S.A., for example, C. Tauber noted

that older Blacks were four times and older Hispanics were three times as likely as Whites to experience labour market problems.

Policy makers and the general public have become more conscious of the demographic ageing process in the last decades in developed countries, as well as in some developing countries confronted with the problem because of the simultaneous decline in fertility and mortality.

Most industrialized countries are experiencing a widening gap in their social security system between receipts and payments as the level of pension expenditure as a percentage of GDP grows steadily (Reno Camilleri).

The media - newspapers, radio, television - are dealing with the subject of ageing with growing concern. Nonetheless, equating "elderly" with "indigence" or "frailty" has changed in recent years to a view that the elderly are better off than the other age groups.

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History of INIA:

The Vienna International Plan of Action on Aging, adopted by the World Assembly on Aging in 1982 and endorsed by the United Nations General Assembly in its resolution 37/51, recommended, *inter alia*, that practical training institutes should be promoted and encouraged in order to act as information exchange centres between and among developed and developing countries.

In harmony with the spirit and objectives of the Vienna International Plan of Action on Aging, the Government of Malta proposed to the Secretary General, in September 1985, that a United Nations International Institute on Aging should be established in Malta.

The United Nations reacted favourably to this initiative by Malta and conducted a feasibility study which was subsequently examined by an intergovernmental expert group, which recommended the establishment of an International Institute in Malta. As a result, the UN Economic and Social Council, in its resolution 1987/41, recommended to the Secretary General the establishment of the International Institute on Aging (INIA). The Secretary General responded positively to this resolution and accepted the Government of Malta's role as host to the Institute. On October 9th, 1987, the United Nations signed an official agreement with the Government of Malta to establish INIA as an autonomous body under the auspices of the United Nations. INIA was inaugurated on 15th April 1988 by the United Nations Secretary General, His Excellency Mr. Javier Pérez de Cuéllar.

INIA publishes a quarterly gerontological journal, *BOLD*, and the papers, proceedings and recommendations of the Institute's Expert Group Meetings.

History of CICRED:

The Committee for International Cooperation in National Research in Demography (CICRED) was created as a result of the meeting of directors of national population research institutes, organised by the Population Division of the United Nations Secretariat in Lyons (France) from June 3rd to 11th, 1971.

At that time, the United Nations was preparing the World Population Conference, foreseen for 1974, and the Population Division was seeking a means of establishing some kind of link with the world community of national population research institutes. Moreover, during the Lyons meeting, a number of participants emphasised the necessity of providing support to national research and of developing mutual collaboration.

CICRED is a non-profit association, its members are all the 300 centres conducting population research in the world. Its budget is jointly shared by UNFPA and the French Government. The activities of CICRED are currently covering three fields:

- (i) population literature storage, retrieval and exchange;
- (ii) promotion of inter-institutional cooperative research on population topics;
- (iii) assessment of population research potentialities.

CICRED publishes a quarterly, the *Review of Population Reviews*, and several books gathering the findings of its various collaborative research projects.

The collaboration between CICRED and INIA in the publication of this series of country monographs enhances the common aim of both institutions to disseminate information