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# World Population Ageing 2013



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**Department of Economic and Social Affairs  
Population Division**

# **World Population Ageing 2013**



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# DESA

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## Preface

The Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat is responsible for providing the international community with up-to-date and objective information on population and development. The Population Division provides guidance to the United Nations General Assembly, the Economic and Social Council and the Commission on Population and Development on population and development issues. The Division also undertakes regular studies on population levels, trends and dynamics, including trends in population ageing, changes in population policies and the interrelationships between population and development.

In the area of population ageing, the Population Division prepares national, regional and global estimates and projections of older populations, monitors levels and trends in population ageing and collects and analyses information on the relationship between population ageing and development. The Population Division also organizes expert group meetings on various aspects of population ageing.

This report is the fourth in the series *World Population Ageing*. The first report was released in 2002 in conjunction with the Second World Assembly on Ageing. The present report, which updates the 2007 and 2009 editions, provides a description of global trends in population ageing and includes new features on the socio-economic and health aspects of ageing. This report is accompanied by an interactive database on the *Profiles of Ageing 2013*.

This report was prepared by a team led by Jorge Bravo, including Hantamalala Rafalimanana and Mun Sim Lai, who carried out research and drafted chapters. Ivan Princevic contributed programming and data processing and Donna Culpepper and Neenah Koshy provided formatting and editorial support. John Wilmoth provided key guidance and useful comments on the draft report. The Population Division acknowledges the valuable research inputs provided by Luis Rosero-Bixby and Maliki Achmad.

The present report has been issued without formal editing. Responsibility for the *World Population Ageing 2013* report rests with the Population Division.

This report, as well as the profiles of ageing and data on older persons, can be accessed on the Population Division's website at [www.unpopulation.org](http://www.unpopulation.org). Questions and comments concerning this publication should be addressed to the Director, Population Division, Department of Economic and Social Affairs, United Nations Secretariat, New York, NY 10017, U.S.A. by telephone at +1 (212) 963-3209, fax at +1 (212) 963-2147, or e-mail at [population@un.org](mailto:population@un.org).

## Sources, methods and classifications

Data on demographic trends used in the present report are taken from the 2012 Revision of the official United Nations world population estimates and projections (United Nations, Department of Economic and Social Affairs, Population Division, 2013). In addition, data on labour force participation were obtained from the International Labour Organization (2011) and data on statutory retirement age from the United States Social Security Administration (2013). Data on living arrangements and marital status were compiled from United Nations (2012).

The population estimates and projections, which are prepared biennially by the Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, provide the standard and consistent set of population figures that are used throughout the United Nations system as the basis for activities requiring population information. In the *2012 Revision* of the *World Population Prospects*, standard demographic techniques were used to estimate the population by age and sex, as well as trends in total fertility, life expectancy at birth, infant mortality and international migration for the years 1950 through 2010, from data available from censuses and post-enumeration surveys; demographic and health surveys; population and vital registration systems; scientific reports and data collections; and from data and estimates provided by international agencies. The resulting estimates provided the basis from which the population projections follow. In the *2012 Revision*, the population projections are based on a probabilistic (Bayesian) method for projecting total fertility and life expectancy at birth. This method is based on empirical fertility and mortality trends estimated for all countries of the world for the period 1950 to 2010. The present report draws on the medium variant population projections through the year 2050.<sup>1</sup>

The countries and areas identified as statistical units by the Statistics Division of the United Nations and covered by the above estimates and projections, are grouped geographically into six major areas: Africa; Asia; Europe; Latin America and the Caribbean; Northern America; and Oceania. Those major areas are further divided geographically into 21 regions. In addition, the regions are summarized, for statistical convenience, into two general groups—more developed and less developed—on the basis of demographic and socio-economic characteristics. The less developed regions include all regions of Africa, Asia (excluding Japan), Latin America and the Caribbean, and Oceania (excluding Australia and New Zealand). The more developed regions include all other regions plus the three countries excluded from the less developed regions. The group of least developed countries, as defined by the United Nations General Assembly in its resolutions (59/209, 59/210 and 60/33) in 2007, comprises 49 countries. See Annex II for further detail.

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<sup>1</sup> Further information about data sources and methods underlying the estimates and projections of population can be found on the Internet at <http://esa.un.org/wpp/sources/country.aspx> and <http://esa.un.org/unpp/index.asp?panel=4>

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## Explanatory notes

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

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

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

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

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

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

A point (.) is used to indicate decimals.

A slash (/) indicates a crop year or financial year, for example, 2010/15.

Use of a hyphen (-) between dates representing years, for example, 2010-2015, signifies the full period involved, including the beginning and end years.

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

Reference to “dollars” (\$) indicates United States dollars, unless otherwise stated.

The term “billion” signifies a thousand million.



## Executive summary

This report updates prior *World Population Ageing*<sup>2</sup> editions. The series originated as part of the United Nations activities connected to the Second World Assembly on Ageing in April 2002,<sup>3</sup> where the Political Declaration and the Madrid International Plan of Action on Ageing (MIPAA) were adopted. MIPAA represented a milestone in addressing the challenge of building a society for all ages. The Plan focuses on three priority areas: older persons and development; advancing health and well-being into old age; and ensuring enabling and supportive environments. MIPAA links population ageing and the well-being of older persons to international frameworks for social and economic development and human rights, particularly those agreed to at the United Nations conferences and summits of the 1990s.

Issues related to population ageing and older persons have played an important role in the several major international conferences during the past two decades, including the International Conference on Population and Development (ICPD) held in 1994, which recognized the economic and social impact of population ageing in all societies.<sup>4</sup> Subsequently, the Key Actions for the Further Implementation of the Programme of Action of the ICPD, adopted in 1999, reiterated the need for all societies to address the significant consequences of population ageing in the coming decades.<sup>5</sup> In 2007, the United Nations Commission on Population and Development (CPD) dedicated its 40<sup>th</sup> session to the changing age structures of populations and their implications for development and adopted a resolution covering a range of policy issues related to ageing. The resolution also requested the Secretary-General to continue his substantive work on changing age structures and their implications for development.<sup>6</sup>

The United Nations Commission on Social Development (CSD) undertook the first review and appraisal of progress made in implementing the Madrid Plan of Action on Ageing in 2007 and 2008, and carried out a second cycle of review and appraisal of MIPAA during the 51<sup>st</sup> session of the CSD in 2013. The Secretary-General's report for that session renewed the call to "ensure social integration of older persons and that the promotion and protection of their rights form an integral part of the development agenda at the national and global levels".<sup>7</sup>

This report provides the demographic foundation for the follow-up activities of the Second World Assembly on Ageing and the aforementioned mandates of ICPD, the Commission on Population and Development and the Commission on Social Development. It considers the process of population ageing for the world as a whole, for more and less developed regions and major areas and regions.

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<sup>2</sup> *World Population Ageing, 1950-2050* (United Nations publication, Sales No. E.02.XIII.3); *World Population Ageing, 2007* (United Nations publication, Sales No. E.07.XIII.5); *World Population Ageing 2009* (United Nations publication, Sales No. E.10.XIII.5).

<sup>3</sup> *Report of the Second World Assembly on Ageing, Madrid, 8-12 April 2002* (United Nations publication, Sales No. E.02.IV.4), chap. I, resolution 1, annex II.

<sup>4</sup> *Population and Development*, vol. 1: *Programme of Action adopted at the International Conference on Population and Development, Cairo, 5-13 September 1994* (United Nations publication, Sales No. E.95.XIII.7).

<sup>5</sup> *Review and Appraisal of the Progress Made in Achieving the Goals and Objectives of the Programme of Action of the International Conference on Population and Development, 1999 Report* (United Nations publication, Sales No. E.99.XIII.16).

<sup>6</sup> Report on the fortieth session of the Commission on Population and Development, (10 May 2006 and 9-13 April 2007), Economic and Social Council Official Records, 2007, Supplement No. 5 (E/2007/25).

<sup>7</sup> Follow-up to the International Year of Older Persons: Second World Assembly on Ageing, Report of the Secretary-General to the sixty-eighth session of the Commission on Social Development, A/68/167.

In addition to the core demographic aspects of population ageing, the present edition of *World Population Ageing* introduces new sections and information on trends in the economic support ratio, the demographic dividend, independent living among older persons, international differences in the main causes of deaths among older persons, in health expenditures, intergenerational transfers, the sources of financial support in old age, and the prevalence of poverty among older people in different regions of the world.

This report includes the following major findings:

1. Population ageing is taking place in nearly all the countries of the world. Ageing results from decreasing mortality, and, most importantly, declining fertility. This process leads to a relative reduction in the proportion of children and to an increase in the share of people in the main working ages and of older persons in the population. The global share of older people (aged 60 years or over) increased from 9.2 per cent in 1990 to 11.7 per cent in 2013 and will continue to grow as a proportion of the world population, reaching 21.1 per cent by 2050.
2. Globally, the number of older persons (aged 60 years or over) is expected to more than double, from 841 million people in 2013 to more than 2 billion in 2050. Older persons are projected to exceed the number of children for the first time in 2047. Presently, about two thirds of the world's older persons live in developing countries. Because the older population in less developed regions is growing faster than in the more developed regions, the projections show that older persons will be increasingly concentrated in the less developed regions of the world. By 2050, nearly 8 in 10 of the world's older population will live in the less developed regions.
3. Population ageing has major social and economic consequences. The old-age support ratios (number of working-age adults per older person in the population) are already low in the more developed regions and in some developing countries, and are expected to continue to fall in the coming decades with ensuing fiscal pressures on support systems for older persons. In a number of developing countries, poverty is high among older persons, sometimes higher than that of the population as a whole, especially in countries with limited coverage of social security systems. While people are living longer lives almost everywhere, the prevalence of non-communicable diseases and disability increase as populations age.
4. On the positive side, population ageing and the increased prevalence of non-communicable diseases originate in the mostly positive trends of drastically reduced child and adult mortality, and declining fertility. Also, older persons can increasingly live independently (alone or with their spouse only), and in most countries, they support themselves financially with their own labour earnings, income from their assets, and through public transfers. In most countries with pertinent data, older persons make net financial contributions to younger family members until rather advanced ages.
5. Most developed countries already have aged populations. By contrast, a large number of developing countries are projected to experience high and increasing economic support ratios for years or decades to come, and can therefore benefit significantly from the "demographic dividend," provided that appropriate labour market and other policies allow for a productive absorption of the growing working-age population and for increased investments in the human capital of children and youth.

Other specific findings are:

- The older population is itself ageing. Globally, the share of older persons aged 80 years or over (the “oldest old”) within the older population was 14 per cent in 2013 and is projected to reach 19 per cent in 2050. If this projection is realized, there will be 392 million persons aged 80 years or over by 2050, more than three times the present.
- The older population is predominantly female. Because women tend to live longer than men, older women outnumber older men almost everywhere. In 2013, globally, there were 85 men per 100 women in the age group 60 years or over and 61 men per 100 women in the age group 80 years or over. These sex ratios are expected to increase moderately during the next several decades, reflecting a slightly faster projected improvement in old-age mortality among males than among females.
- Globally, 40 per cent of older persons aged 60 years or over live independently, that is to say, alone or with their spouse only. Independent living is far more common in the developed countries, where about three quarters of older persons live independently, compared with only a quarter in developing countries and one eighth in the least developed countries. As countries develop and their populations continue to age, living alone or with a spouse only will likely become much more common among older people in the future.
- Many older persons still need to work, especially in developing countries. In 2010, the labour force participation of persons aged 65 years or over was around 31 per cent in the less developed regions and 8 per cent in the more developed regions. Labour force participation among older men is decreasing in the less developed regions, but it is increasing in the more developed regions. In both development groups, despite their numerical disadvantage, men made up a large majority of the total labour force among older persons.
- The labour earnings of older persons are an important source of economic support in old age, especially in developing countries. Public transfers are a major source of old-age support in developed countries and in some developing countries with substantial social security coverage, while income from their own assets finances another substantial part of the consumption of older persons, especially in countries with less expansive public transfer systems. In most countries with available data, older persons are net givers of familial transfers.
- In much of Africa, the prevalence of poverty among older persons is either lower or only slightly higher than the total population average, while in Latin America the prevalence of poverty among the older population varies widely, from levels much lower than average in countries of the Southern Cone, to significantly higher than average in some Central American countries. Although older persons in most countries of the Organisation of Economic Co-operation and Development (OECD) are well covered by social protection systems, the poverty rate of older persons tends to be higher than the population average.





# Introduction

The world population has been experiencing significant ageing—the process that results in rising proportions of older persons in the total population—since the mid-twentieth century. Ageing had started earlier in the more developed regions and was beginning to take place in some developing countries and was becoming more evident at the global scale around the time of the International Conference on Population and Development took place in 1994 in Cairo, Egypt. Population ageing was further advanced by the Second World Assembly on Ageing, which took place in Madrid, Spain, in 2002, and the demographic projections at that time evidenced an unmistakable trend of continued ageing, which would no doubt consolidate during the twenty-first century. As this report makes clear, however, the intensity and depth of ageing will vary considerably among countries and regions.

Ageing has profound consequences on a broad range of economic, political and social processes. First and foremost is the increasing priority to promoting the well-being of the growing number and proportion of older persons in most countries of the world. Indeed, the Madrid International Plan of Action (MIPAA), adopted at the Second World Assembly on Ageing, emphasized that older persons should be able to participate in and benefit equitably from the fruits of development to advance their health and well-being, and that societies should provide enabling environments for them to do so.

While much attention has been given to the fiscal and macro-economic challenges represented by population ageing, which governments must certainly confront and prepare for, MIPAA also recognized the crucial importance of intergenerational interdependence, which needs to be redefined as the population distribution shifts to more older persons and relatively fewer children. Ageing also entails a change in the sex composition of the population, since women tend to outlive men and therefore constitute a substantial majority of the older population. As fertility has fallen, women's labour force participation has been globally on the rise, although women still engage less than men in paid work. At the same time, women play a key role as providers of family support and care for all generational groups, especially children and older persons.

Ageing is also partly the result of the trend toward longer and generally healthier lives of individuals, but because chronic and degenerative diseases are more common at older ages, they result in an increased prevalence of non-communicable diseases at the population level. Last but not least, as societies age, they also bring about changes in the living arrangements of older people vis-à-vis younger family members, and in the private and public systems of economic support for children, adults, and most critically, older persons.

This report begins with an overview of population ageing from a global perspective, starting with a discussion on the demographic determinants of ageing (chapter 1), namely, declining fertility and rising life expectancy, and presenting the basic trends in the extent and speed of ageing in different regions of the world. Chapter 2 reviews the changing balance of major age groups, and shows global and regional trends in child and old-age dependency ratios, as well as in aggregate economic support ratios. Chapter 3 gives a demographic profile of the older

population, including the age distribution within the older population, and the sex ratio and the living arrangements of older persons.

Selected characteristics of the older population are examined in chapter 4, starting with trends in the distribution of deaths by age and the major causes of death. The chapter also includes a discussion of international differences in health expenditures, labour force participation of older persons and ages at retirement. Chapter 5 uses data from National Transfer Accounts to discuss intergenerational transfers and well-being in old-age, distinguishing the major sources of economic support of older persons labour income, public transfers (which include pensions, public health and spending in other programmes), private transfers and asset reallocations. This chapter also includes a review of the available evidence on the prevalence of poverty among older persons, as compared with poverty rates of the total population. A final section of the report gives brief concluding remarks.

Annex I gives the definitions of the indicators of ageing used in this report and Annex II provides a list of countries or territories by major areas and regions. Annex III presents summary tables on the older population and selected ageing indicators for individual countries, development regions and major areas, drawn from the latest United Nations demographic estimates and projection, namely, the data of *World Population Prospects: The 2012 Revision* (United Nations, Department of Economic and Social Affairs, Population Division, 2013).

# I. Demographic determinants and speed of population ageing

Population ageing, which entails an increasing share of older persons in the population, is a major global demographic trend which will intensify during the twenty-first century. For statistical purposes, and unless otherwise specified, in this report older persons are considered to be those aged 60 years or older. Ageing results from the demographic transition, a process whereby reductions in mortality are followed by reductions in fertility. Together, these reductions eventually lead to smaller proportions of children and larger proportionate shares of older people in the population. Ageing is taking place almost everywhere, but its extent and speed vary. In most developed countries, the population has been ageing for many decades, while in developing countries, population ageing has taken place relatively recently, as their mortality and fertility levels have fallen. Currently, the most aged populations are in the developed countries, but the majority of older persons reside in developing countries. Given that the rate of growth of the older population in developing countries is significantly higher than in developed countries, the older population of the world will increasingly be concentrated in the less developed regions.

Ageing is a dynamic process, determined by the relative size of the younger and older cohorts in the population at different moments in time. The initial size of each cohort depends on the population in childbearing ages at a given point in time, and the prevalent fertility rates. Mortality rates determine the number of people of each cohort that survives to old-age. Migration may also affect ageing in different ways, although its actual impact at the national level is usually small.<sup>8</sup>

## A. REDUCTION IN FERTILITY AND THE SIZE OF BIRTH COHORTS

According to data from *World Population Prospects: the 2012 Revision* (United Nations, Department of Economic and Social Affairs, 2013), fertility has been falling in most regions of the world over the last several decades, and this decline has been the main factor driving population ageing. The world's total fertility rate (TFR) has dropped by about a half, from 5.0 children per woman in 1950-1955 to 2.5 children per woman in 2010-2015 (figure 1.1). These declining fertility rates were also previously reported by the United Nations Population Fund (UNFPA) and HelpAge International (2012). The decline in global fertility will continue during the coming decades. The global TFR will fall to 2.2 in 2045-2050 under the "medium" projection variant, or to 1.8 children per woman under the "low" variant. The faster the speed of fertility decline, the more rapidly ageing will take place.

### *Fertility is projected to continue to decline in the less developed regions*

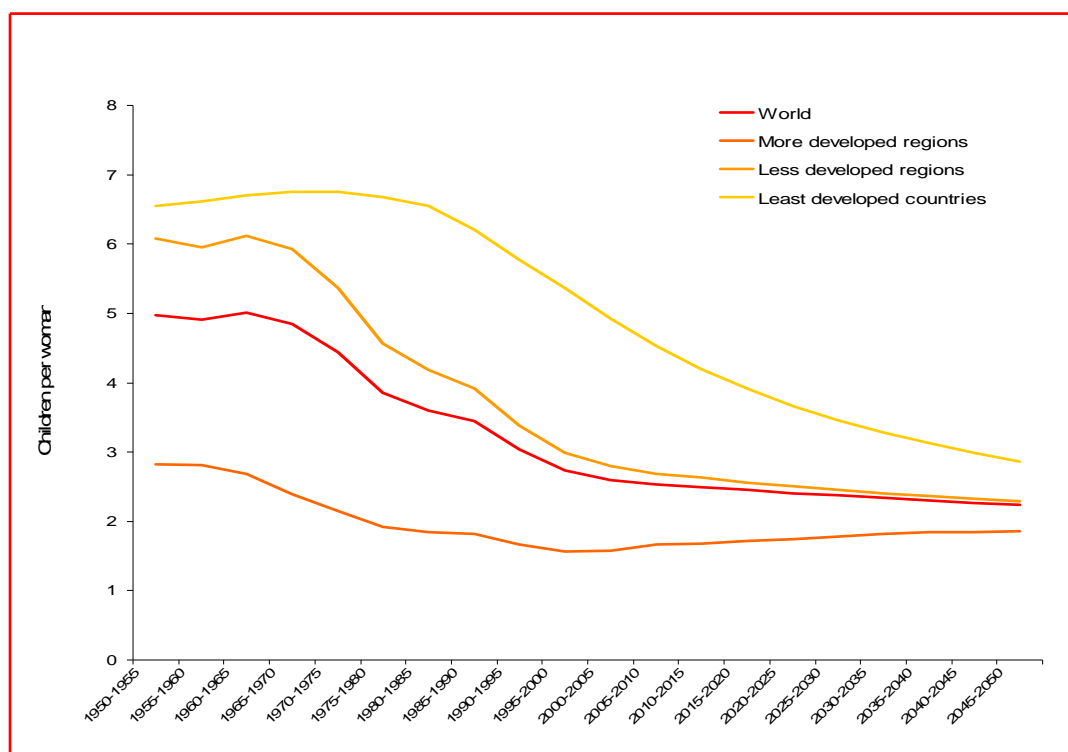
Most countries of the world experienced declining fertility during the last decades, and because the reductions were generally faster in the less developed regions, the gap in fertility

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<sup>8</sup> Massive out-migration may significantly reduce the size of youth cohorts, which can intensify population ageing, or large immigrations may swell the youth cohorts in countries of destination, thereby attenuating the pace of ageing to some extent.

levels with respect to the more developed regions has narrowed. After a consistent decline from 2.8 children per woman in 1950-1955 to 1.6 children per woman in 2000-2005, fertility in the more developed regions *rose* slightly thereafter to 1.7 children per woman in 2005-2010 (figure 1.1). The United Nations medium variant projects the level of fertility in 2045-2050 in the more developed regions to swing back to 1.9 children per woman, but to remain somewhat below the replacement level of 2.1 children per woman.

**Figure 1.1**  
**Total fertility rate: world and development regions, 1950-2050**



Total fertility in the less developed regions stood at 6.1 children per woman in 1950-1955, and fell sharply during the 1970s to the 1990s, reaching 2.7 children per woman in 2005-2010. Even though total fertility in the less developed regions is still well above that of the more developed regions, it is projected to fall to 2.3 children per women in 2045-2050, narrowing the gap to 0.4 children per women with the more developed regions.

Fertility started to fall more recently in the least developed countries (LDCs), only since the 1980s. But a significant decline has taken place since, from 6.6 births per woman in 1980-1985 to 4.2 births per woman in 2010-2015. Under the medium variant, fertility is projected to decline further in LDCs, to an average level of 2.9 children per woman in 2045-2050, which will narrow the fertility gap among all development groups.

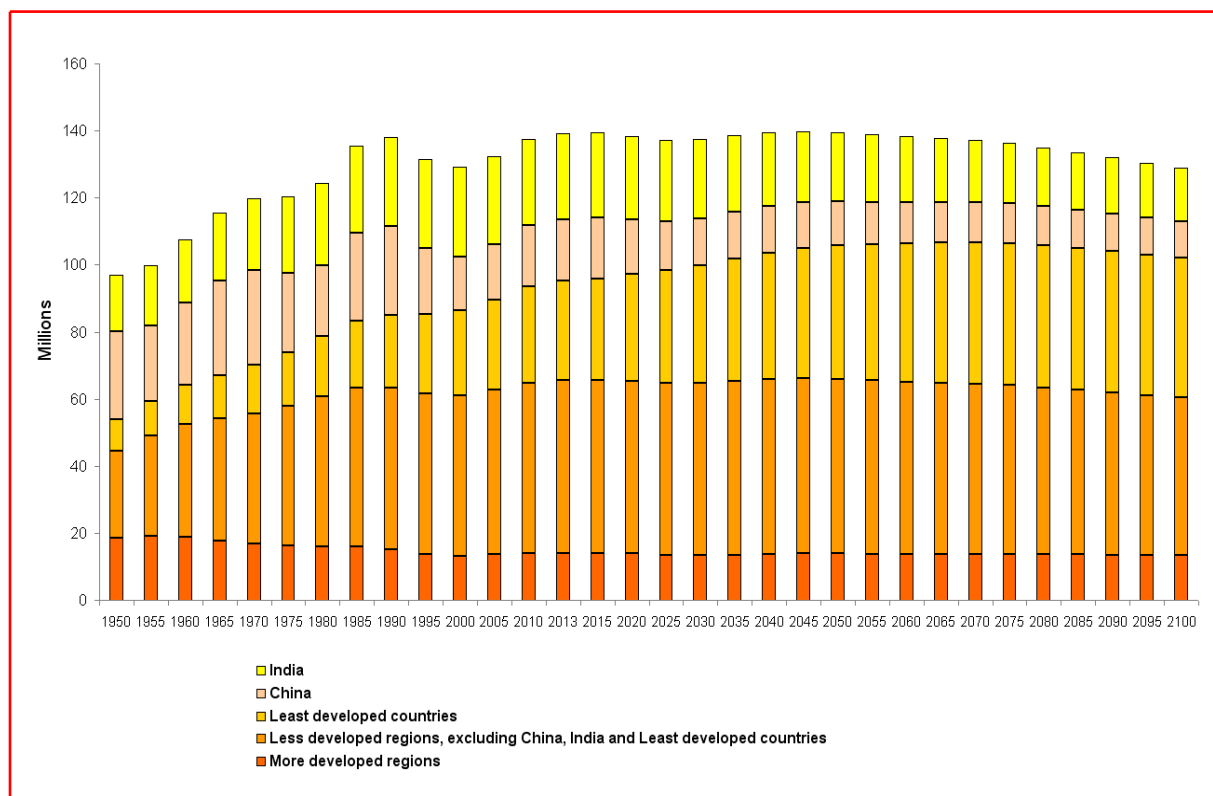
***The number of births is beginning to stabilize at the world scale***

Population size, a legacy of past demographic dynamics, together with current fertility rates, determines the number of births in the present time. Through most of the twentieth century, the

number of births in the world increased from one decade to the next. However, the world has just entered a period, projected to be quite long, in which the number of births is likely to stay near 140 million per year, and then decline slowly to levels approximating 130 million births per year by the end of the century (figure 1.2). This trend in the number of births, coupled with a long term trend of declining mortality, is changing the shape of the population pyramids into a nearly rectangular form until about age 60, a shape that is characteristic of a demographically “aged” population.

The number of births in the more developed regions, after declining during most of the second half of the twentieth century, has been stable since the early 1990s (figure 1.2). This has produced significant ageing in the population of these regions. China, the most populous country in the world, has also had a declining number of births since the 1990s, which will make its population age faster than many other developing countries. The projections show that the stabilization in the number of births in the least developed countries will not occur until after the middle of the twenty-first century. By contrast, India, the country with the highest number of births in the world, experienced a steady increase in this number—from 7 million to 26 million per annum—between 1950 and the mid-2000s. From then on, the number of births in this country is expected to decline slowly to its 1950 level by the end of the century.

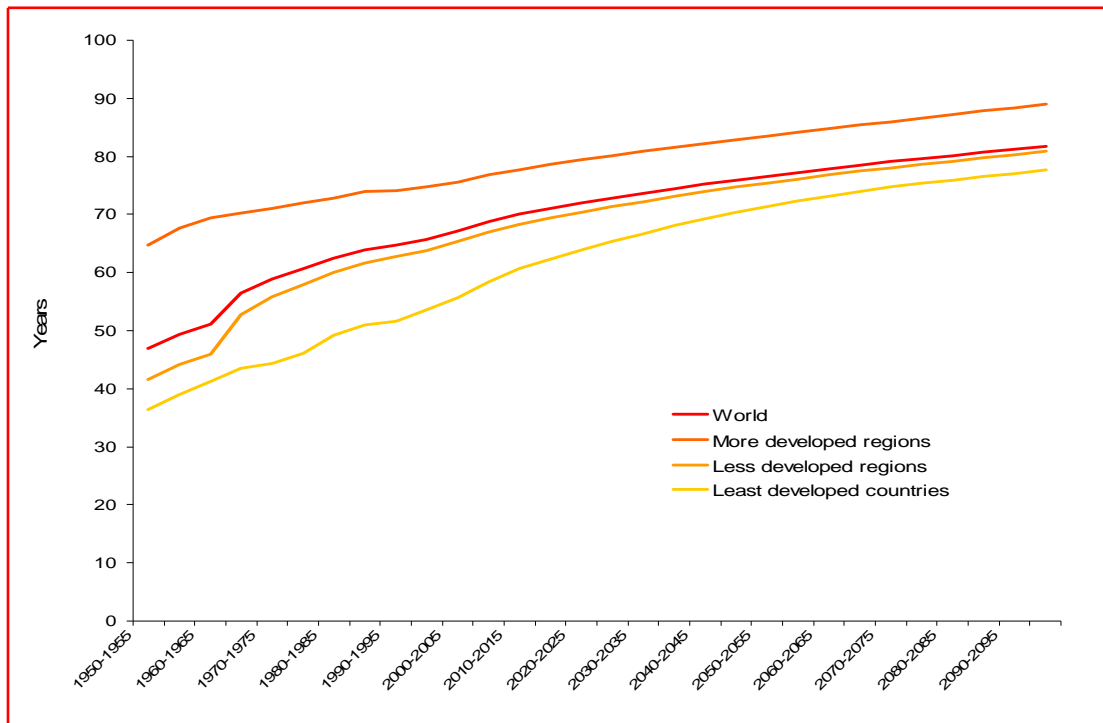
**Figure1. 2.**  
**Annual number of births by development region and for China, 1950-2100**



## B. INCREASE IN LIFE EXPECTANCY

Increases in life expectancy at birth have been registered in all major regions of the world (figure 1.3). The extension of average life span is one of the greatest achievements of humanity. However, the increase in life expectancy does not result immediately in population ageing. Since early improvements in life expectancy come mostly from declines in child mortality, this tends to produce, in a first instance, *increased* numbers of infants and children, and a *reduction* in the proportion of older individuals. Continued progress in life expectancy contributes to the increase in the proportion of older people, as more individuals survive to ever older ages. Thus, eventually, lower mortality and higher life expectancy end up reinforcing the effect of lower birth rates on population ageing.

**Figure 1.3**  
**Life expectancy at birth: world and development regions, 1950-2050**

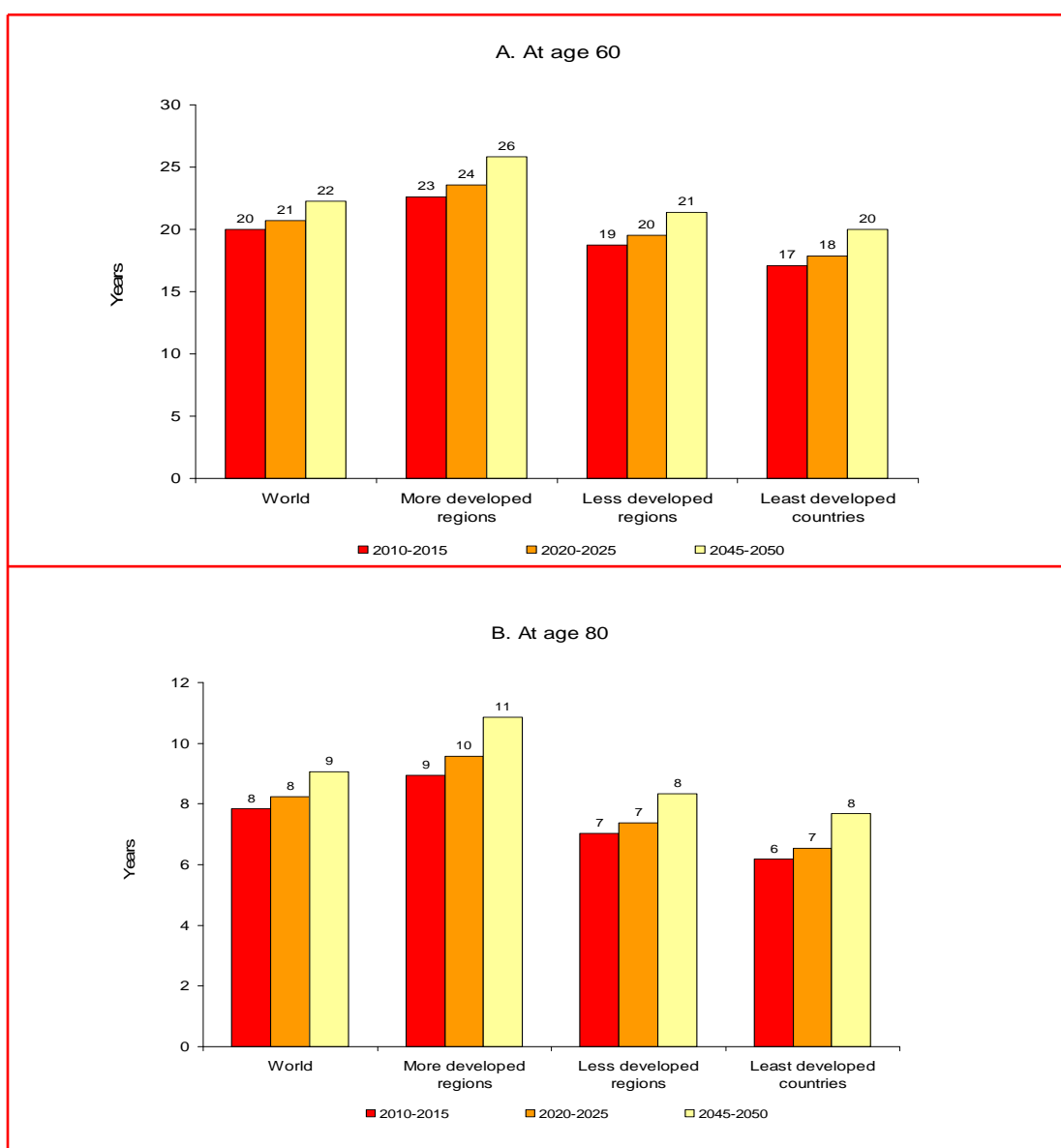


Life expectancy at birth is projected to continue to rise in the coming decades in all major regions of the world. Life expectancy was 65 years in 1950 in the more developed regions compared to only 42 years in the less developed regions in the same year. By 2010-2015, it is estimated to be 78 years in the more developed regions and 68 years in the less developed regions. The gap between the more developed regions and the less developed regions has narrowed and it is expected to continue to get smaller in the coming decades. By 2045-2050, life expectancy is projected to reach 83 years in the more developed regions and 75 years in the less developed regions. Thus longer life spans will contribute to future ageing in all major regions of the world.

*The gap in life expectancy at older ages is also narrowing, as the less developed regions continue to experience large gains in survivorship*

In 2010-2015, at the world level, people who survive to age 60 can expect to live 20 additional years. But again, this indicator varies by development region; in the more developed regions, 60-year old people will live on average 23 additional years while in the less developed regions and the least developed countries, they will only live an additional 19 years and 17 years, respectively (figure 1.4, Panel A).

**Figure 1.4**  
**Life expectancy at ages 60 and 80: world and development regions, 2010-2015, 2020-2025 and 2045-2050**



In the next 40 years, that is, between 2010-2015 and 2045-2050, life expectancy at age 60 is projected to increase by two years on average, from 20 years to 22 years for the world as a whole, from 19 years to 21 years in the less developed regions, and from 17 years to 19 years in the least developed countries. During the same period, life expectancy at age 60 in the more developed regions is expected to rise from 23 years to 26 years.

Mindful that the estimation of mortality at the older ages, particularly for ages 80 or above, is subject to greater levels of uncertainty than mortality at younger ages (United Nations, Department of Economic and Social Affairs, 2012a, p. 13), the available data and projections suggest that life expectancy at age 80 is likely to continue to increase in the coming decades (figure 1.4, Panel B). From 2010-2015 to 2045-2050, the gain in life expectancy at age 80 in the less developed regions will only be about one year (from 7 years to 8 years) whereas it is projected to be about two years (from 9 years to 11 years) in the more developed regions. In the least developed countries, life expectancy at age 80 is expected to rise faster than in the less developed regions as a whole, from 6 years to 8 years during this period. The combination of longer life expectancy with declining fertility will lead to significant population growth in the less developed regions, especially in the least developed countries.

*The gender gap in life expectancy is expected to narrow in the more developed regions, but to widen in the less developed regions*

Women live on average longer than men. While this gender gap in survival widened at the global level in past decades, current projections suggest that the gap will remain relatively constant in the next four decades at the world scale. However, in the less developed regions the gains in female life expectancy are expected to be larger than the gains for men, and this will lead to a widening of the gender gap in mortality. In contrast, the gender gap in life expectancy in the more developed regions is expected to narrow from 6.8 years in 2010-2015 to 5.8 years in 2045-2050 (figure 1.5).

### **C. MAGNITUDE AND SPEED OF POPULATION AGEING**

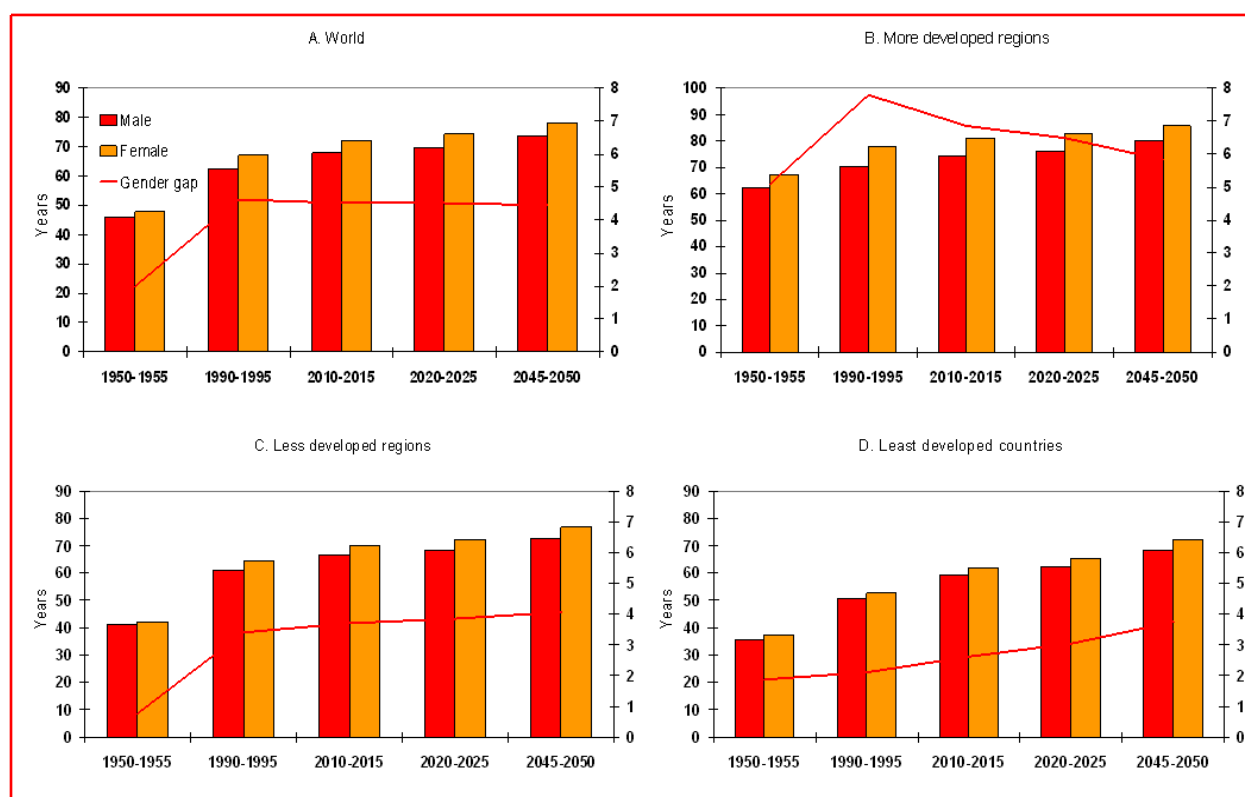
*The world is in the middle of a transition toward significantly older populations*

The world's population is changing in both size and age composition. Although the global population growth rate has been falling for around 40 years, the world has experienced record high annual additions to population size in recent years. These annual increments will soon begin to decline. The age composition of the world population has also experienced significant change, but the largest proportional changes will take place in the coming decades, as illustrated by the population pyramids in figure 1.6. The pyramid for the less developed regions in 2013 shows a transformation from the wide base of a youthful population in 1970, to the more rectangular shape of an older population in 2050. The age composition of the more developed regions is also in a transitional phase, from the already aged structure of 1970, which shows the demographic scars of the Second World War, to the even more aged structure expected for the year 2050.

In the more developed regions, the 2013 pyramid shows a full mid-section, an indication that there is a predominance of young and middle-age adults, together with significant volume at the older ages, an indication of ageing. But this structure is in rather rapid transition to a more aged population in the more developed regions, with more than 30 per cent of older persons by 2050.



**Figure 1.5**  
**Male and female life expectancy at birth and gender gap: world and development regions, 1950-2050**



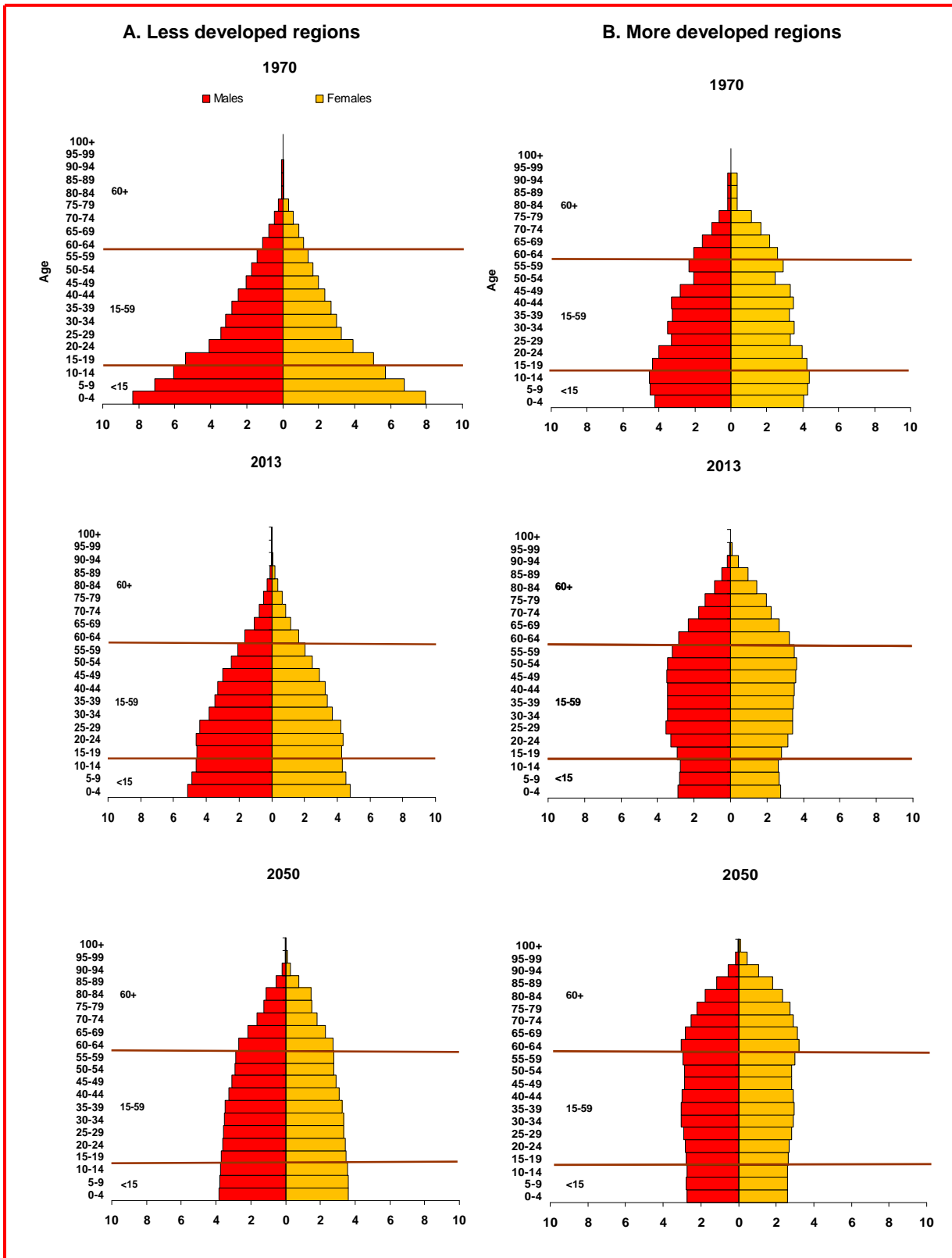
NOTE: The vertical axis on the right side of each panel indicates the gender gap in life expectancy at birth (in years, female minus male values).

### *The number of older persons is growing very fast*

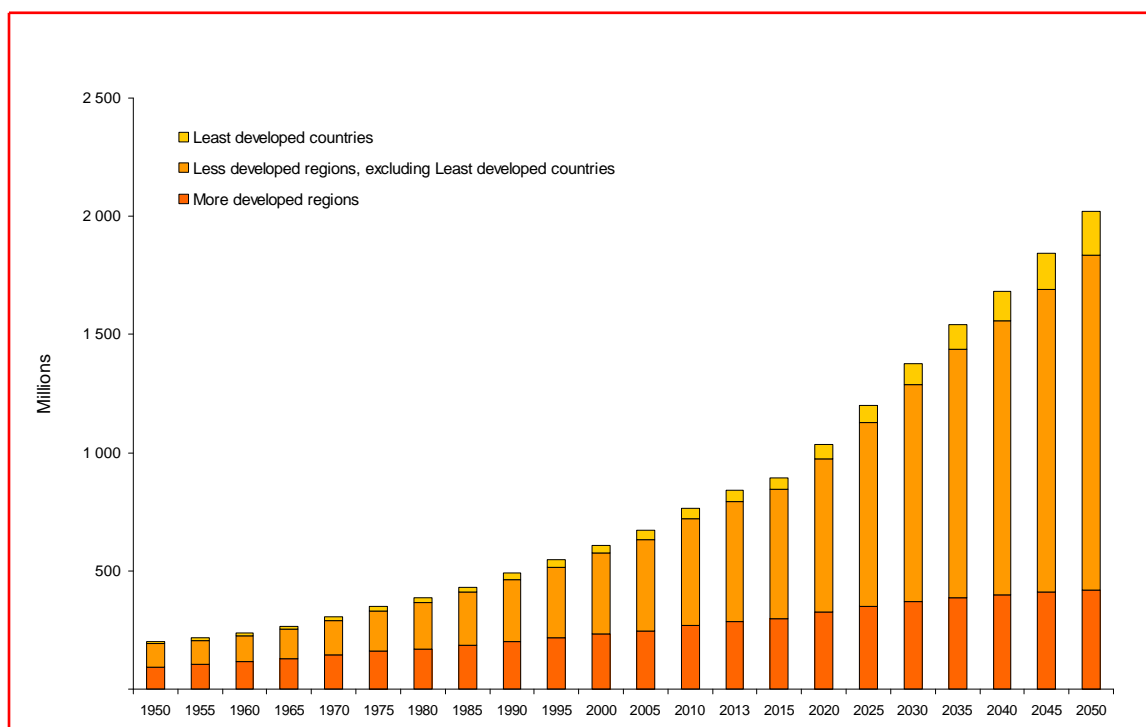
At the root of the process of population ageing is the exceptionally rapid increase in the number of older persons, a consequence of the high birth rates of the early and middle portions of the twentieth century and the increasing proportions of people reaching old age. The number of older persons is 841 million in 2013, which is four times higher than the 202 million that lived in 1950. The older population will almost triple by 2050, when it is expected to surpass the two billion mark (figure 1.7). The projection of older people has a higher degree of certainty than that of younger age groups, because all the individuals older than 60 years in 2050 were already born at the time the projection was made. Consequently, the projection to 2050 depends solely on attrition due to mortality, which entails a much smaller margin of uncertainty than the projection of fertility.

The trend in the number of older persons in the world is dominated by the fast growth of the older population in the less developed regions, where the size of the older population is 554 million in 2013, which is five times greater than in 1950 (108 million). The number of older people in these regions will further triple by 2050 to attain 1.6 billion. The speed of change in the more developed regions has been impressive too, but significantly slower than in the less developed regions. The older population of the more developed regions tripled between 1950 and 2013, from 94 million to 287 million, and it will increase further in coming decades, reaching 417 million in 2050.

**Figure 1.6**  
**Population pyramids of the less and more developed regions: 1970, 2013 and 2050**



**Figure 1.7**  
**Population aged 60 years or over by development region, 1950-2050**



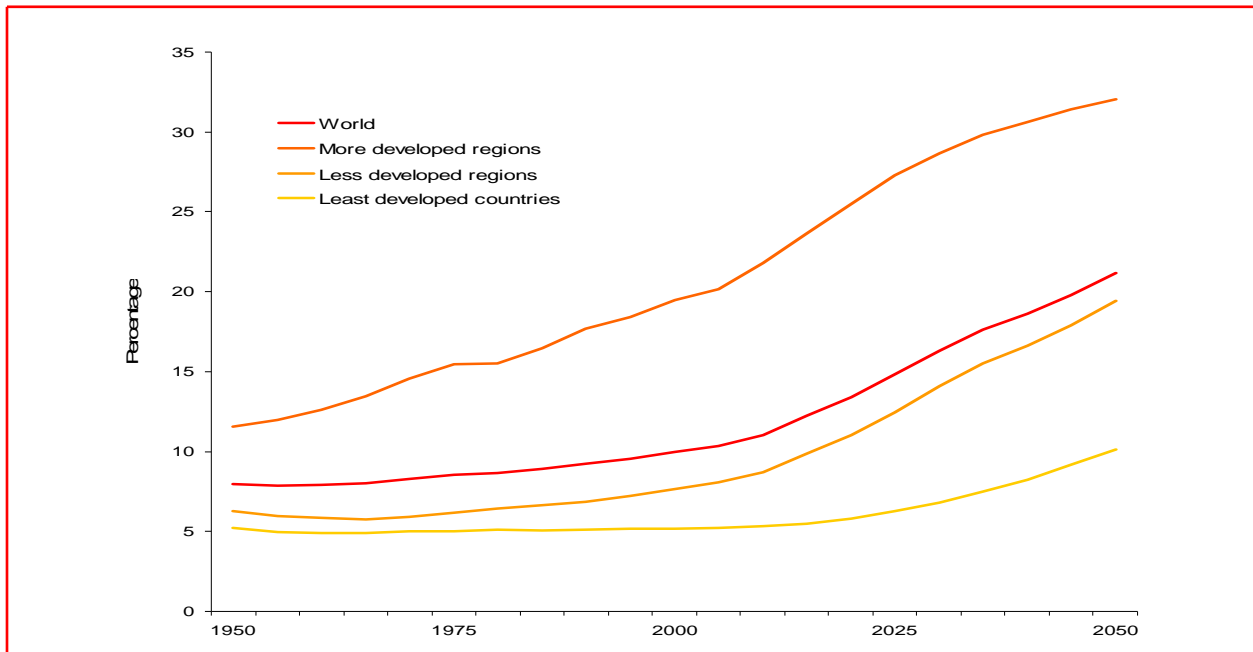
***Population ageing is taking off in the less developed regions...***

The proportion of the world's population aged 60 years or over increased from 8 per cent in 1950 to 12 per cent in 2013. It will increase more rapidly in the next four decades to reach 21 per cent in 2050 (figure 1.8). The stages and speed of ageing are quite different between the more and less developed regions. Ageing in the more developed regions started many decades ago, but it is just taking off in less developed regions, while it has yet to unfold in the least developed countries.

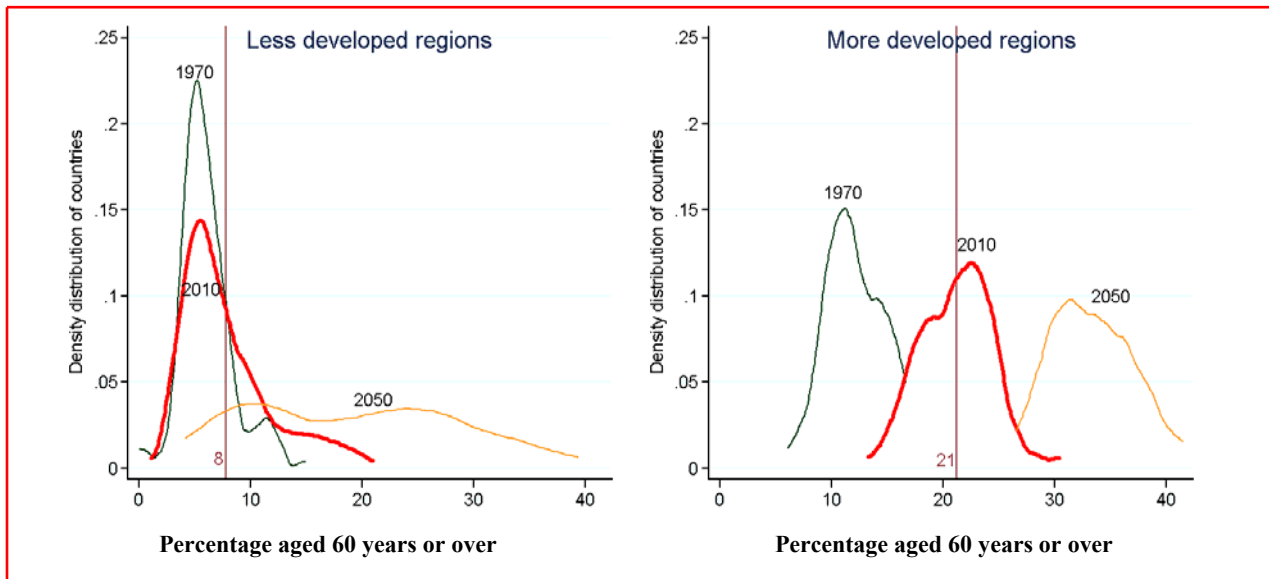
The proportion of the population aged 60 years or over in the more developed regions was 12 per cent in 1950, rose to 23 per cent in 2013 and is expected to reach 32 per cent in 2050. In the less developed regions, the proportion of older persons increased slowly between 1950 and 2013, from 6 per cent to 9 per cent; however, the increase in the proportion of older persons is expected to accelerate in the coming decades, reaching 19 per cent in 2050. In the least developed countries, the proportion of older persons has remained fairly stable at about 5 per cent for many decades, but this proportion is expected to double by 2050.

Ageing also differs substantially *within* the more and less developed regions, which display different trends in their variance over time. While the more developed regions seem to be moving as a group, at a similar pace across countries, in the less developed regions, there is much greater variability, including countries in a more advanced stage of ageing (Armenia, Argentina, Chile, China, Cuba, Cyprus, Georgia, Israel, Puerto Rico, Singapore and Sri Lanka) and those where the proportion of older persons is still very low and not yet increasing (all countries in sub-Saharan Africa with the exception of Mauritius, Réunion, Seychelles and Saint Helena; many countries in South-Central Asia, South-Eastern Asia and Western Asia).

**Figure 1.8**  
**Proportion of the population aged 60 years or over: world and development regions 1950-2050**



**Figure 1.9**  
**Distribution of countries by the proportion of the population that is aged 60 years or over in the less and more developed regions, 1970-2050**



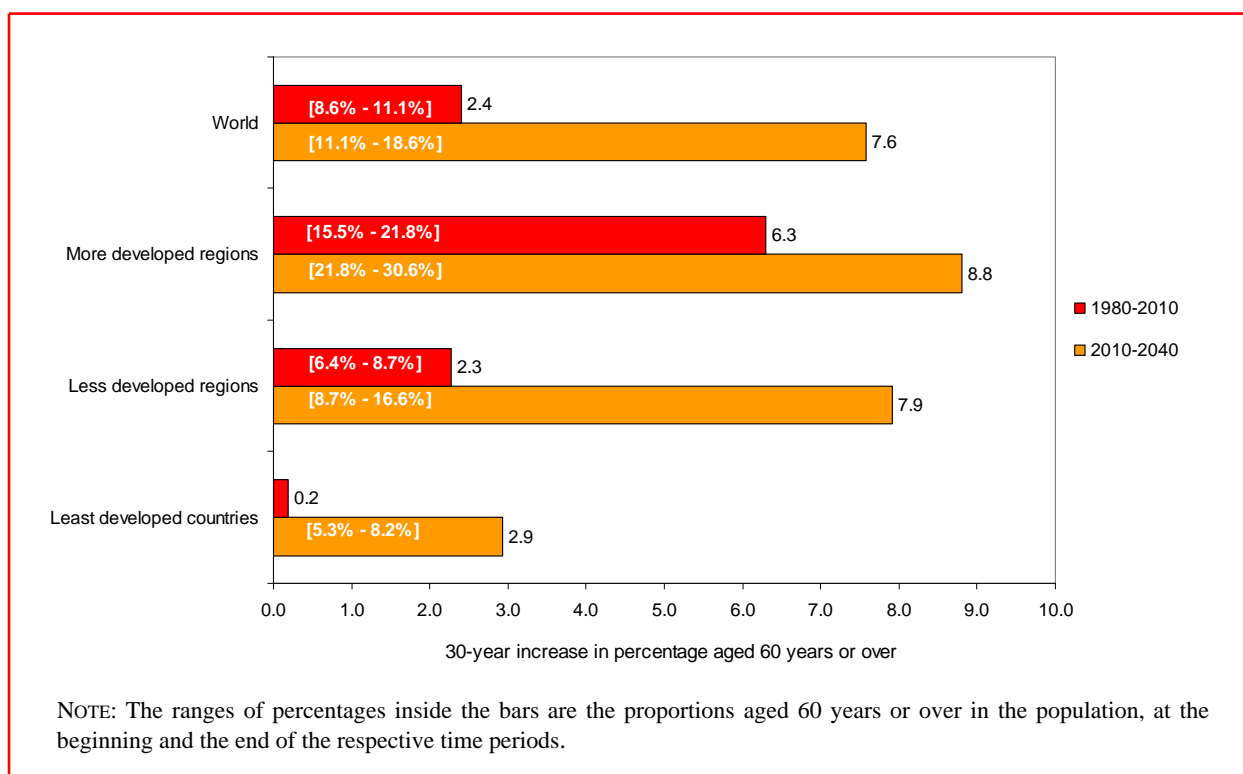
Within the less developed regions (left panel of figure 1.9), the cross-country variation in the proportion of population aged 60 years or over was relatively small in 1970. At that time, most countries clustered around proportions between 3 per cent and 10 per cent. In 2010, the variability increased to values up to 20 per cent, and the projection for 2050 points to an even wider dispersion, with the proportion aged 60 years or over in the population ranging from 4 per cent to 39 per cent. By contrast, developed countries have progressed in tandem, and the

variation in the proportion of older people has remained within a range of nearly 10 percentage points, with only a slight increase over time (right panel of figure 1.9).

*... and its speed will begin to accelerate*

World population ageing is about to start a phase of acceleration. During the past 30 years, between 1980 and 2010, the proportion of the population that is aged 60 years or over increased by 2.4 percentage points in the world as a whole, from 8.6 per cent to 11 per cent. The absolute change in this proportion was much greater in the more developed regions (6.3 percentage points) than in the less developed regions (2.3 percentage points). But these changes pale in comparison to the 7.6 percentage-point increase that is about to occur on average in the next 30 years (figure 1.10). Both the less and the more developed regions will experience large changes, of 7.9 per cent and 8.8 per cent, respectively. By comparison, the least developed countries will experience a significant, though much smaller increase of 2.9 percentage points.

**Figure 1.10**  
**Speed of population ageing (percentage point increase): world and development regions, 1980-2010 and 2010-2040**



It is well-known that population ageing is taking place much more rapidly now in developing countries than it had in developed countries in the past. For example, it took France 115 years and Sweden 85 years, and it will take the United States of America 69 years, to change the proportion of the population aged 60 years or over from 7 per cent to 14 per cent. In contrast, it will take China only 26 years, Brazil 21 years and Colombia 20 years to experience the same change in population ageing (Kinsella and Phillips, 2005). Indeed, change was slow during the early, “take-off” phase of population ageing. However, the speed of population ageing in the

more developed regions during the past three decades has been very fast. From 1980 to 2010, the more developed regions experienced the largest and fastest increase in the proportion of the population aged 60 years or over, from 15.5 per cent to 21.8 per cent. This increase of 6.2 percentage points in 30 years is several times larger than the increase of 2.3 points in the less developed regions.

**Figure 1.11**  
Average annual growth rate of population aged 60 years or over: world and development regions, 1950-2050



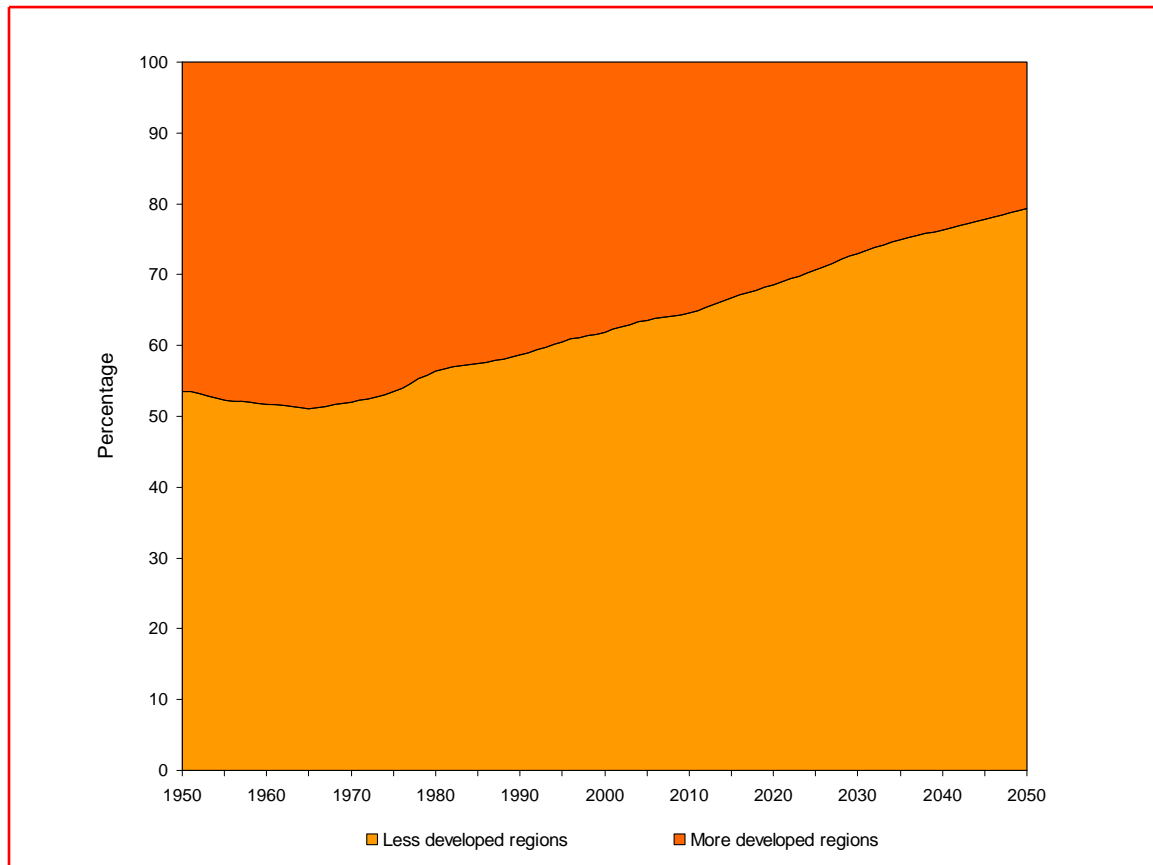
In the next 30-year period, from 2010 to 2040, fast population ageing will take place mainly in the less developed regions. In particular, China will see an increase of 15.7 percentage points in the proportion aged 60 years or over, from 12.4 per cent to 28.1 per cent. This increase will be the fastest in the world, although ageing in the more developed regions will continue at a quick pace of 8.8 points over this 30-year period.

The global rate of growth of the older population is 3.2 per cent in 2010-2015, and it is projected to decline continuously to 1.8 per cent in 2045-2050. The growth rate is higher in the less developed regions than in the more developed ones. Between 2010-2015 and 2045-2050, the growth rate is projected to decline from 3.8 per cent to 2.2 per cent in the less developed regions, while it is projected to go from 1.9 per cent to 0.4 per cent in the more developed regions. The growth rate in the least developed countries is projected to rise until around 2030 and will hover just under 4 per cent during the next few decades (figure 1.11).

**Nearly 80 per cent of older persons will live in the less developed regions in 2050**

The older population of the less developed regions has expanded continuously since the 1960s at a faster pace than in the more developed regions. Today, about two thirds of the global number of older people live in developing countries. Since the projections indicate that this trend will continue, older persons will be increasingly concentrated in the less developed regions of the world. In 2050, nearly 80 per cent of the world's older population will live in the less developed regions (figure 1.12).

**Figure 1.12**  
**Distribution of world population aged 60 years or over by development region, 1950-2050**







## II. The changing balance among age groups

As noted in chapter 1, the present and future age composition of a population evolves as a function of the past population size and distribution, and the present and future fertility and mortality rates. In countries where net migration flows are significant, the age structure is also affected by the migration history.<sup>9</sup> As a result of the documented changes in fertility and mortality, the balance among age groups in the global population is changing significantly. One major expression of these changes is population ageing and the trend toward a more uniform global population distribution by broad age groups than ever registered before.

### A. DISTRIBUTION OF THE POPULATION BY BROAD AGE GROUPS

#### *Cohort sizes will become more even over the twenty-first century*

It was indicated in chapter 1 that the number of annual births is expected to nearly stabilize, at a level of about 138 to 140 million births per year from the present to mid-century. As the more uniformly-sized cohorts grow older, a trend toward a more uniform population age distribution will set in. Figure 2.1 depicts this process by development groups, displaying the evolution of the sizes of four 20-year age groups: (1) children and adolescents under the age of 20 years; (2) “young” adults 20 to 39 years of age; (3) “middle-aged” adults aged 40 to 59 years; and (4) older persons aged 60 years or over. Historically, the group of older persons was much smaller than any of the other three groups. But this situation is no longer true in the more developed regions and the global situation will change significantly as the older population continues to grow rapidly while the younger age groups begin to stabilize. Toward the 2080s, these four age groups are projected to be of approximately equal size, a historically unprecedented fact. But the world population’s age distribution is not expected to stabilize at that point; the projections indicate that ageing will continue to intensify further into the future.

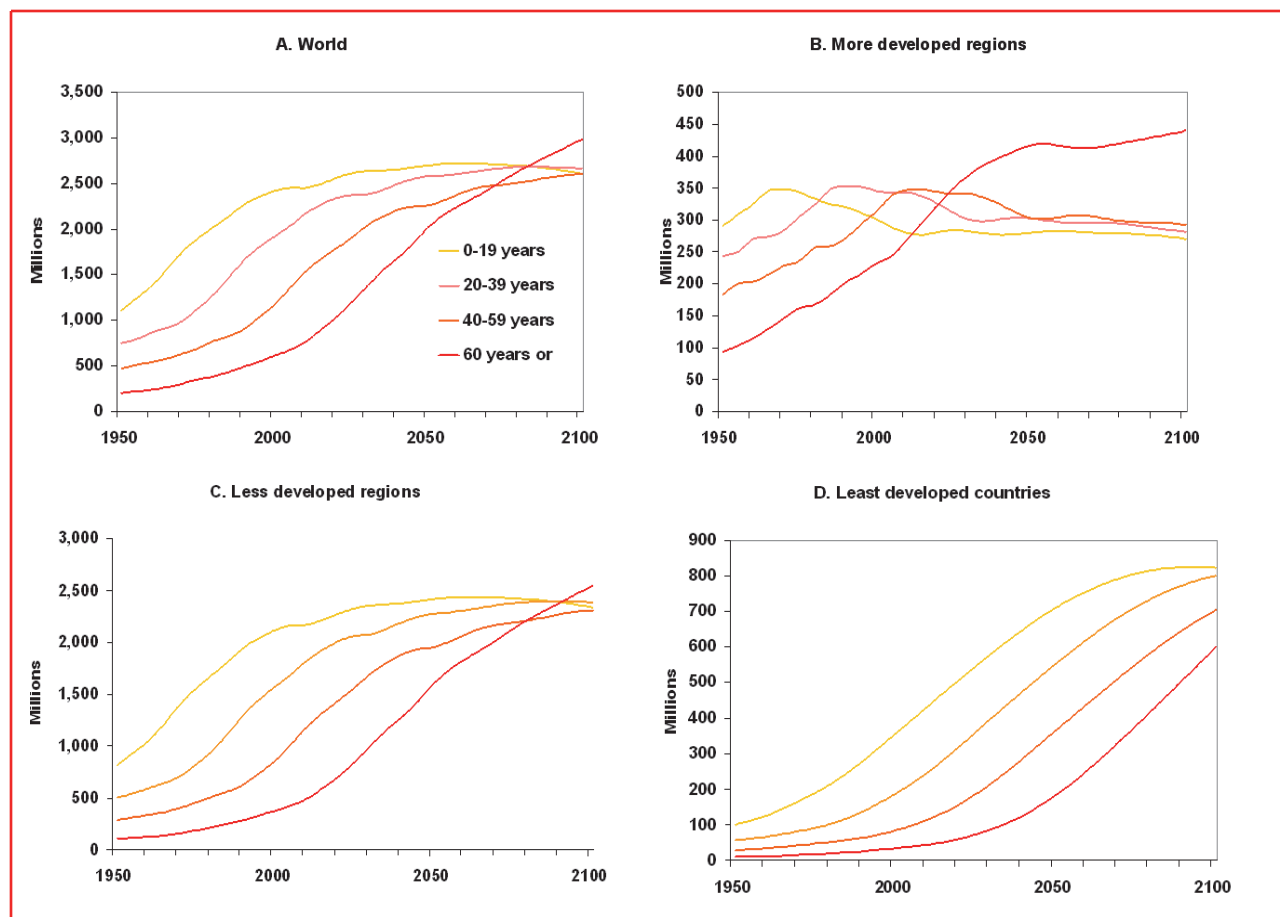
In the more developed regions, the size of the first three 20-year age groups are beginning to converge, with projections showing that during 2050-2100 they will stabilize at very similar levels, of about 300 million each. Older persons in the more developed countries have already outnumbered the population aged 0 to 19 years, and will surpass each of the two younger 20-year age groups of adults as early as 2024. Thereafter, the older population is projected to substantially outgrow the younger age groups; by the end of the century, the older population of the more developed regions will represent more than one third of their total population.

In the less developed regions, the projections suggest that the four broad age groups will be about the same size by 2090. At that point in time, the older population will represent 25 per cent of the total population, and this proportion will continue to grow, reaching 27 per cent by the end of the century. The group of least developed countries is following a similar trajectory of ageing as the other regions experienced in the past, but with a considerable time lag. Only the size of the youngest group (under age 20) will have stabilized toward the end of the twenty-first century. All the other age groups will continue to grow for many decades to come.

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<sup>9</sup> At the global scale, net migration is zero; therefore the present age structure is only affected by the population of childbearing ages, and past fertility and mortality rates.

**Figure 2.1**  
**Population by broad age group: world and development regions, 1950-2100**



***Older persons could outnumber children by 2047***

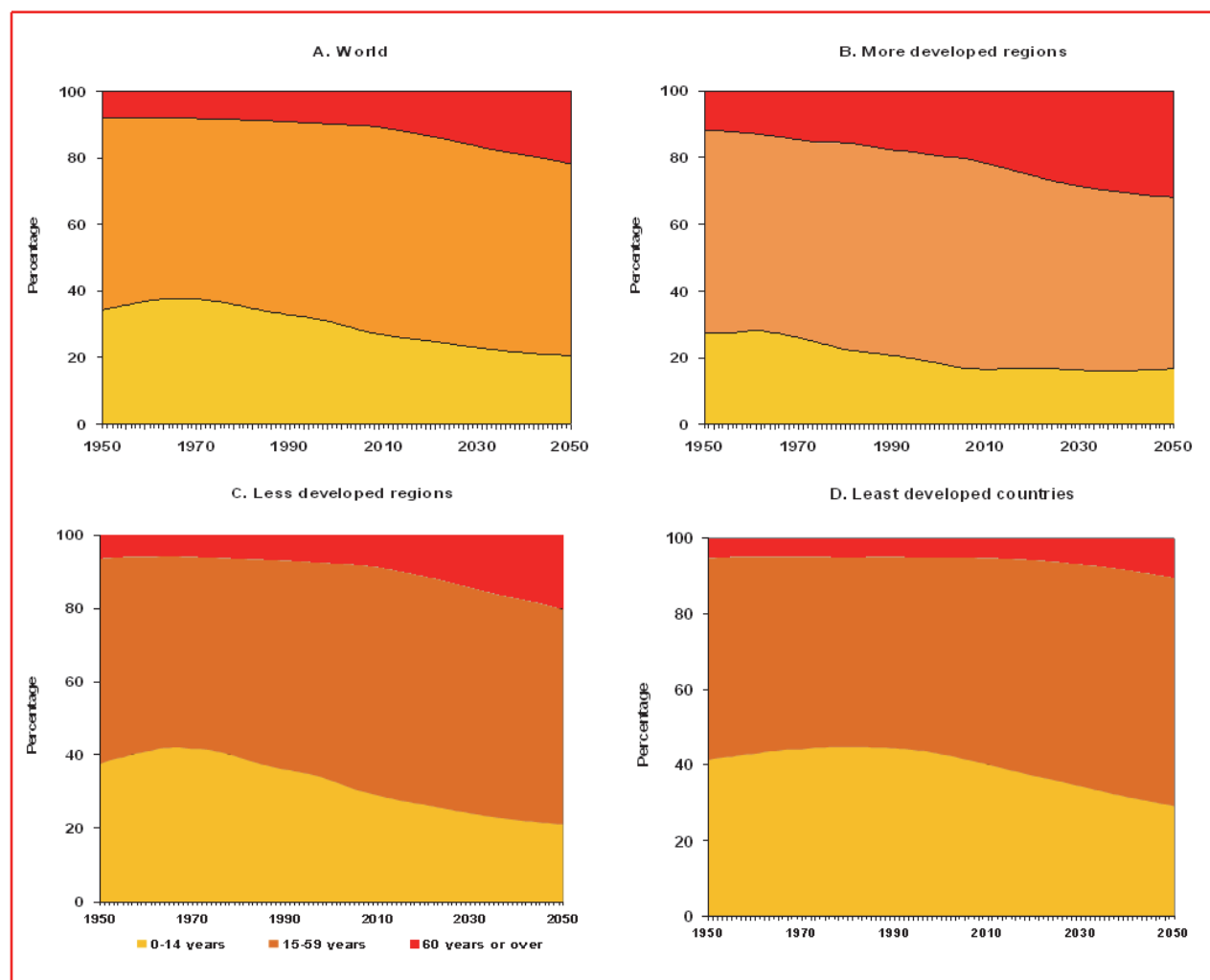
As a consequence of declining fertility, the proportion of children (persons under the age of 15) in the global population dropped from around 38 per cent in 1965 to 26 per cent in 2013, and will continue to decline in the future. During the same period, the proportion of “working-age” adults (persons aged 15-59 years) rose from 54 per cent to 62 per cent and is projected to decline gradually in the future. The population aged 60 years or over has shown a consistent increase in both number and proportion of the world’s population. According to the most recent United Nations population projections, older persons aged 60 years or over will outnumber children in 2047.

***The proportion of older persons is expected to double over the next four decades***

Fertility decline in the least developed countries is a very recent phenomenon. The proportion of children in the population has consequently remained high in this group of countries in contrast to the rest of the developing world, where the proportion of children has been falling for several decades. In least developed countries, the proportion of children began to fall recently, from 44 per cent in 1990 to 39 per cent in 2013 (figure 2.2). Meanwhile, the

proportion in the main working ages has been growing and is projected to reach 60 per cent in 2050. The proportion of the population aged 60 years or over is also projected to rise steadily from 5 per cent in 2013 to nearly 11 per cent by 2050.

**Figure 2.2**  
Distribution of population by broad age group: world and development regions, 1950-2050



The age structure of the less developed regions will continue to be dominated by working-age adults. By 2025, their proportion will increase to about 62 per cent of the total population, while the population of children will represent 25 per cent of the total population. The older population grew steadily in the past decades and has reached 9 per cent in 2013. Within the next 37 years, the number of older persons in these regions is expected to double, reaching 20 per cent of the total population and exceeding the population of children afterwards.

In the more developed regions, the older population had already surpassed the population of children in 1998 and it has come to represent 23 per cent of the total population in 2013. Despite its relatively low growth rates, the older population will steadily increase and its share in the total

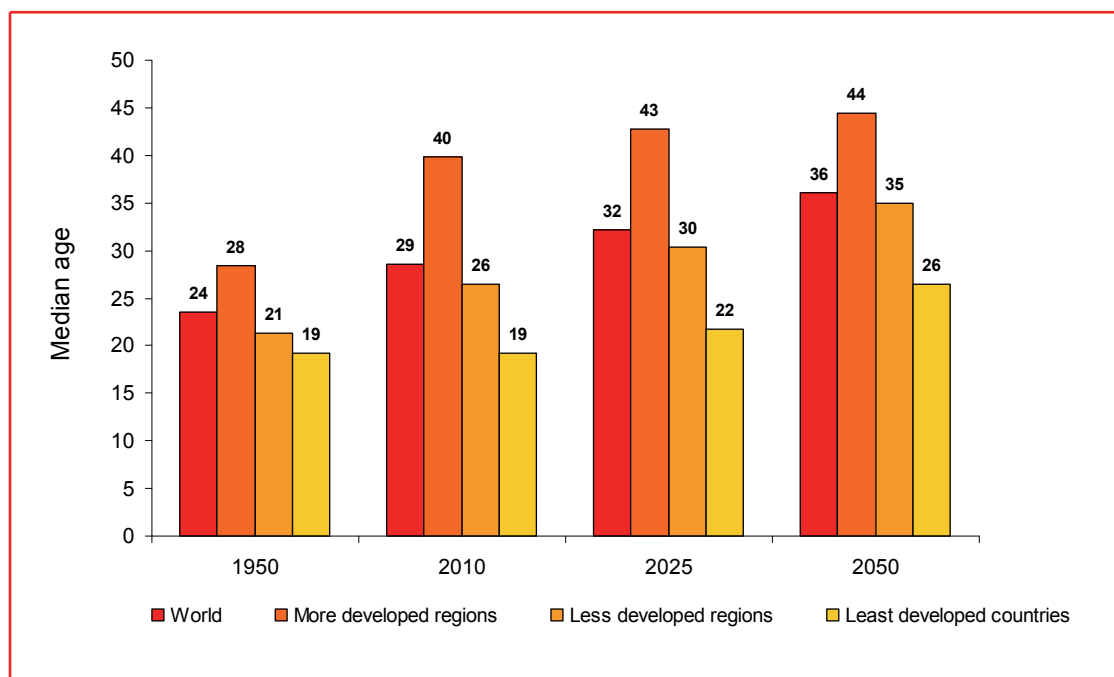
population is projected to be around 32 per cent in 2050. The working-age group, by contrast, has declined since 2006, following the past reductions in the number of births and the population of children. The share of the working-age population will continue to fall during the next four decades, to about 51 per cent in 2050.

## B. MEDIAN AGE

A manifestation of population ageing is the shift in the median age, the age that divides the younger from the older half of the population. Globally, the median age moved from 24 years in 1950 to 29 years in 2010, and will continue to increase to 36 years in 2050 (figure 2.3). The faster ageing in the less developed regions is reflected in the big shift in the median age from 26 years in 2010 to 35 years in 2050, which represents an eight-year increase during a period of 40 years. Meanwhile, the median age in the more developed regions increased rapidly between 1950 and 2010, from 28 years to 40 years. From 2010 on, the pace is expected to slow down and the median age is projected to reach 44 years in 2050.

Half of the population in least developed countries was 19 years or younger in 1950. The median age barely changed in these countries as total fertility was still high during the past several decades. By 2010, the median age had remained at 19 years. The projections show that, over the next four decades, half of the population in the least developed countries will be aged 28 years or over.

**Figure 2.3**  
**Median age of the population: world and development regions, 1950, 2010, 2025 and 2050**



Japan, Germany and Italy are the countries with the highest median ages in the world. In Japan, more than half of the population was older than 45 years in 2010, and its median age is projected to rise to 53 years in 2050. Japan is thus experiencing rapid ageing, at a faster speed than any other developed country. But Europe is ageing fast as well; by 2050, Bosnia and Herzegovina, Germany, Malta, Portugal, Serbia and Spain are projected to attain median ages of 50 years or more.

Among developing countries or areas, Hong Kong Special Administrative Region (SAR) of China and Martinique had relatively old age structures, with a median age of 40 years or more in 2010. In the next four decades, virtually all developing countries are projected to age further. By 2050, Cuba, Hong Kong SAR of China, Martinique, Oman, Qatar, Republic of Korea, Singapore and Thailand are expected to attain median ages of 50 years or higher.

### **C. DEPENDENCY RATIO**

The demographic dependency ratio is a simple indicator of the relationship between the population in mostly dependent ages and the population in the main working ages. It is defined as the ratio of the number of children under age 15 plus older persons aged 65 years or over, to the number of persons aged 15 to 64 years. The ratio is generally used as an indicator of the burden of demographic dependency in a population; that is, how many “dependents” need to be supported by each person of working age. Support for dependents can be provided in various ways (see chapter 4), including familial and public transfers. This simple dependency ratio implicitly assumes that all persons younger than 15 years and older than 65 years are unproductive and that all persons aged 15 to 64 years are productive, which is not always the case. For example, in the less developed regions, there are significant numbers of workers among children under the age of 15 and persons aged 65. In middle and high-income countries, many young adults are not fully productive until in their late twenties. The dependency ratio is therefore a good initial approximation to assess the degree of economic-demographic dependency in a society, but it should be interpreted with caution.<sup>10</sup>

#### ***The dependency ratio is at its minimum in the world***

The dependency ratio peaked at 76 dependents per 100 working-age persons at the world level and at 84 per 100 in the less developed regions. These high levels were reached in 1965, as a result of high fertility rates in the 1950s and 1960s. As total fertility declined, the world dependency ratio also started to fall gradually, to about 52 per 100 in 2013. In the more developed regions, the highest value for the dependency ratio (58 per 100) was reached in 1960, a few years earlier than in the less developed regions.

After falling for about four decades, the world dependency ratio is approaching a minimum in the present decade, and will begin to rise soon (figure 2.4). Globally, the minimum of 52 dependents was reached in 2010 and it is projected to stay nearly at that level for about 15 years. The dependency ratio is expected to rise to 58 per 100 in 2050 and to increase further by the end of the century. The turning point is particularly sharp in the more developed regions, where the

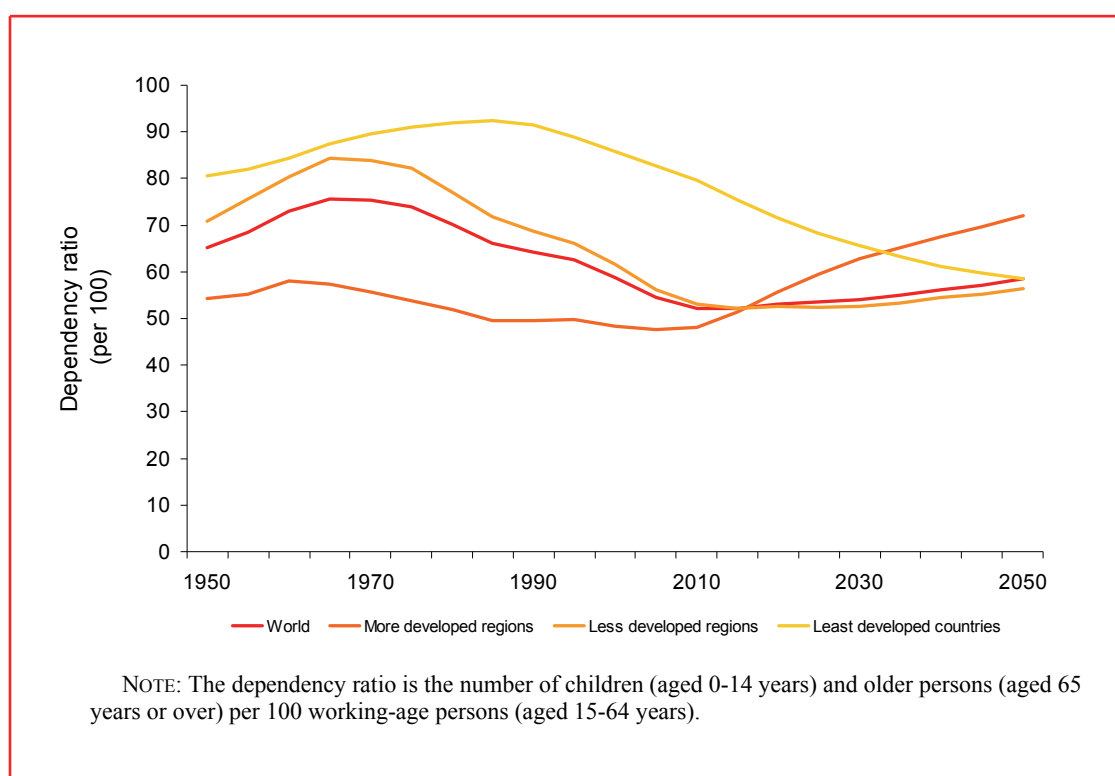
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<sup>10</sup> In section E of this chapter, a brief analysis of economic dependency and support ratios is presented, based on newly available information from National Transfer Accounts (see <http://ntaccounts.org/web/nta/show/>).

average dependency ratio remained at a low of 48 dependents per 100 working-age persons throughout the 2000-2010 decade, and it is expected increase in the future, reaching 72 per 100 in 2050.

In the less developed regions, the dependency ratio of 52 dependents per 100 working-age persons in 2013 will follow the global trend albeit at slightly lower levels. The dependency ratio will start to rise slowly after 2030 and is projected to reach 56 per 100 in 2050. The expected future increases in the dependency ratio just described, mirror the ageing process taking place in most countries and regions of the world. The exception is the group of the least developed countries where the dependency ratio has been declining from 92 per cent since 1985 and will continue to fall in the foreseeable future to reach 59 per cent in 2050.

**Figure 2.4**  
**Dependency ratio: world and development regions, 1950-2050**



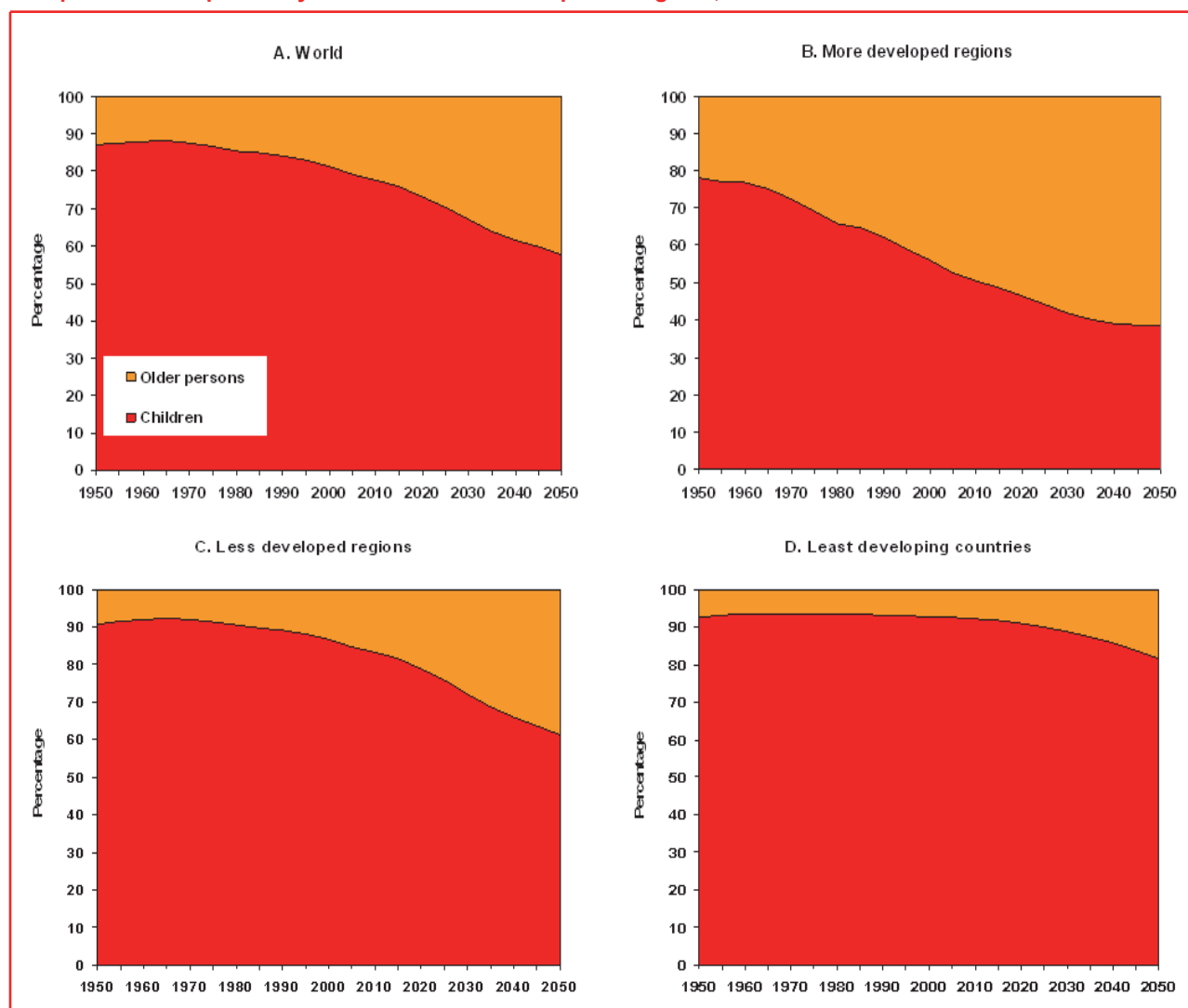
### ***Older people will grow to represent half of all dependents in 2075***

The changes in the dependency ratio of the world have been driven by the combined effect of the declining proportion of children and the rising proportion of older persons. In 1950, 87 per cent of dependents were children and 13 per cent were older persons. That mix is changing rather rapidly and older persons will come to represent 50 per cent of dependents by 2080.

The dependency ratio will increase continuously during the next four decades in the more developed regions, mainly driven by the rising proportion of older persons. The older

population's share of the dependency ratio was half (51 per cent) in 2013 and is projected to reach 62 per cent in 2050 (figure 2.5).

**Figure 2.5**  
**Composition of dependency ratio: world and development regions, 1950-2050**



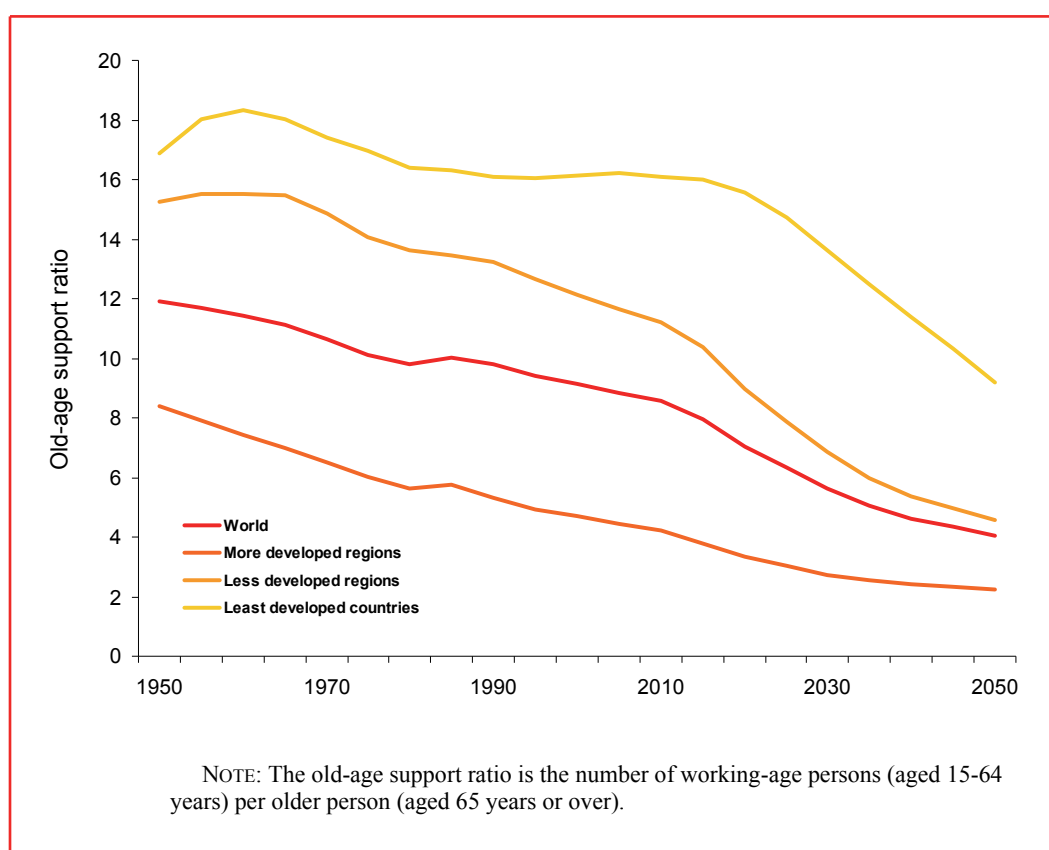
### D. OLD-AGE SUPPORT RATIO

The demographic old-age support ratio measures how many persons in the main working ages there are to support each older person. In this report, the old-age support ratio is calculated as the number of persons aged 15 to 64 years divided by the number of persons aged 65 years or over.

### *The old-age support ratio varies widely across development groups and over time*

Since 1950, the world's old-age support ratio has been declining continuously, meaning that there are increasingly less people in the working ages to support every person aged 65 years or over. The ratio went from 12 working-age persons for each older person in 1950 to 8 in 2013, and is expected to drop to 4 in 2050 (figure 2.6). The differences in the old-age support ratio across development regions are quite large. In 2013, there were 16 persons of working age for each older person in least developed countries, compared to 11 working-age individuals per older person in the less developed regions and just 4 in the more developed regions.

**Figure 2.6**  
**Old-age support ratio: world and development regions, 1950-2050**



The old-age support ratio is expected to continue to decline in all development regions, albeit at a differential pace. The old-age support ratio in the more developed regions is expected to decline in an almost linear fashion during the period 1950-2050 (figure 2.6), from 4 working-age persons per older person in 2013 to just 2 in 2050. In the other regions, an acceleration of the decline is foreseeable over the coming decades. The decline will be particularly steep in the least developed countries, from 16 working-age persons per older person in 2013 to only 9 in 2050.

In the major areas of Europe, Northern America and Oceania, where the population has been ageing for some time, the old-age support ratios are low and will continue to decline in the next four decades, reaching an average value of about 3 producers per older person in 2050

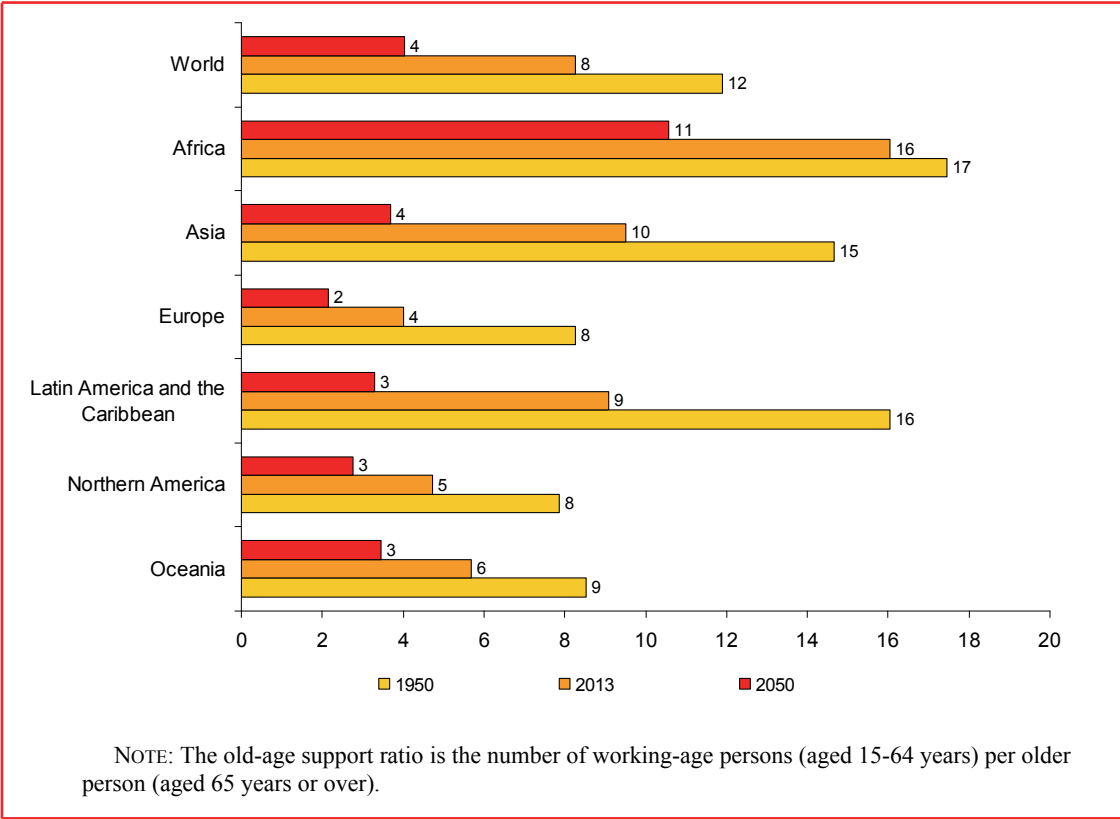


(figure 2.7). In Europe, the ratio will be as low as 2 in 2050, in line with the more developed regions as a whole.

The population of Latin America and the Caribbean is also projected to age quickly and as a result, it will have only 3 working-age persons per older person in 2050. Within this major area, Brazil and Chile have been experiencing rapid population ageing and are projected to have low old-age support ratio in the future. A number of Asian countries, including Japan and the Republic of Korea are also ageing quickly.

The old-age support ratio in Africa, however, will remain relatively high in the near future. It hardly changed between 1950 and 2013, moving from 17 working-age persons per older person to 16. However, it is projected to decrease significantly to reach 11 working-age persons per older person in 2050, which represents a proportionate reduction of roughly one third over this 37-year period.

**Figure 2.7**  
**Old-age support ratio by major area, 1950, 2013 and 2050**

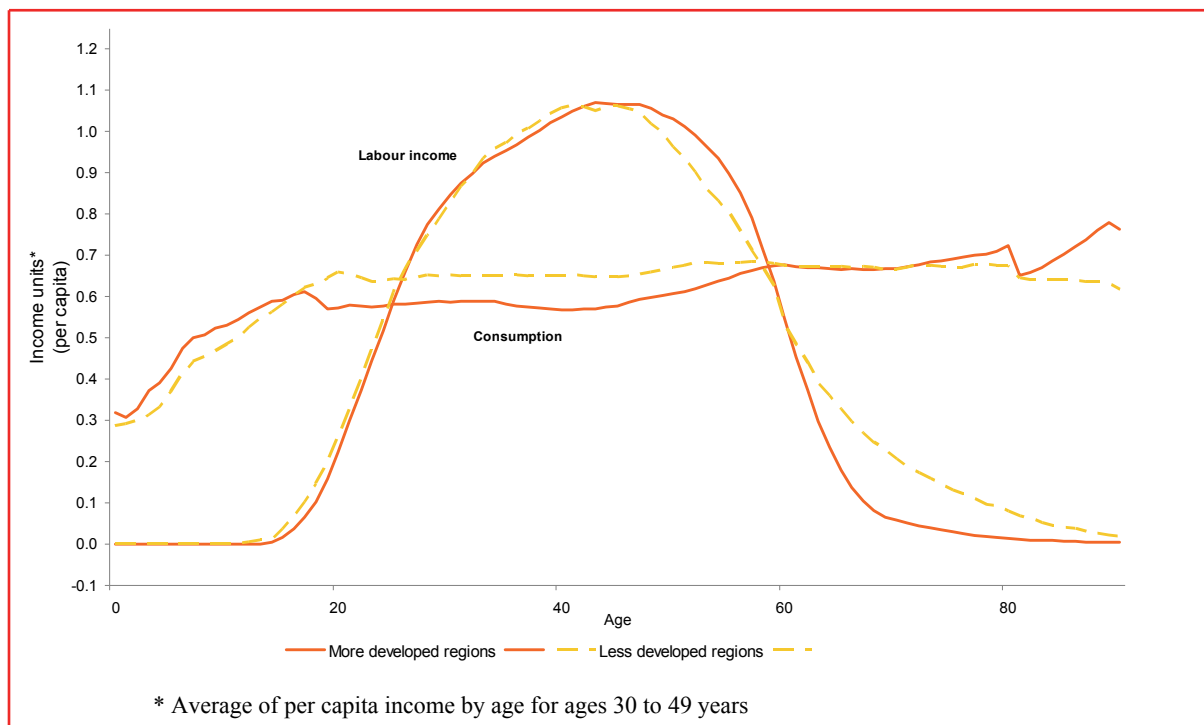


## E. ECONOMIC SUPPORT RATIO

### *The economic life cycle: Production and consumption over the lifecycle*

The economic support ratio is an alternative measure of dependency that explicitly incorporates age variations in consumption and labour productivity.<sup>11</sup> It is defined as the number of equivalent producers or workers divided by the number of equivalent consumers in a given population. This ratio weights the population of a given age by the productivity and consumption of persons of that age. The curves representing the age-specific (or “life-cycle”) production and consumption are depicted in figure 2.8. By taking into account productivity at the different ages, the economic support ratio addresses three shortcomings of the simple demographic dependency ratio: (1) not all older and younger persons are economically dependent, or dependent to the same degree; (2) not all persons between the ages 15 and 64 years are identically productive; and (3) persons of different ages do not have the same level of consumption as implicitly assumed by the simple dependency ratio.

**Figure 2.8**  
**Economic life cycle for the less and more developed regions**



The curves in figure 2.8 depict the economic life cycle, comparing per capita labour income to per capita consumption by age. Although the level and shape of these curves vary across countries and over time, they generally show that the beginning and the end of the human life span are periods of life-cycle deficit, where people consume more than what they produce, on average. The curves also show that during the middle phase of the life cycle, often between the

<sup>11</sup> The concept and measure of the economic support ratio was formally introduced by Mason and Lee (2006).

ages of 25 and 60 years, there is a surplus, where individuals produce more than they consume, on average. Social institutions such as the family, the government and financial markets allow inter-generational transfers of resources from the surplus to the deficit ages. The National Transfer Accounts (NTA) framework (Lee and Mason, 2011; United Nations, 2013) allows for the estimation of these transfers as well as the levels of consumption and production by age as described above. This report uses available NTA data on labour income and consumption by age for 14 developing and 9 developed countries. The estimated values presented here for development regions have been calculated as simple averages of the per-capita age schedules for the countries of the respective regions.<sup>12</sup> Figure 2.8 shows the resulting curves of the economic support ratio for the more and less developed regions.

### ***Trends in the economic support ratio differs markedly by level of development***

As indicated above, the economic support ratio reflects the effective producers or workers per effective consumer in the population, normalized (i.e., divided by) by the mean per capita labour income of persons aged 30 to 49 years. For example, a support ratio of 1 to 2 (that is, 0.5) indicates that on average, each worker is supporting him or herself and one other person's consumption in that population. Therefore, a higher economic support ratio indicates more equivalent workers per consumer and a lighter burden of dependency than a lower support ratio.

Between 1950 and the 1990s, the support ratio was below 0.5 in both the less and more developed regions (figure 2.9). However, more developed regions had higher economic support ratios because their populations were more concentrated around the peak earning ages and had relatively high productivity at these ages, while developing countries had a larger concentration of their populations in children and youth, who have low or zero productivity. After the 1990s, these two development groups took divergent paths with less developed regions experiencing higher support ratios than more developed regions. In the more developed regions, the support ratio had been decreasing since 2000 and is projected to continue falling, reaching 0.42 in 2050. On the contrary, the support ratio in the less developed regions has been rising so far, but is projected to turn around from its peak of 0.54 till 2024 to reach nearly 0.50 by 2050.

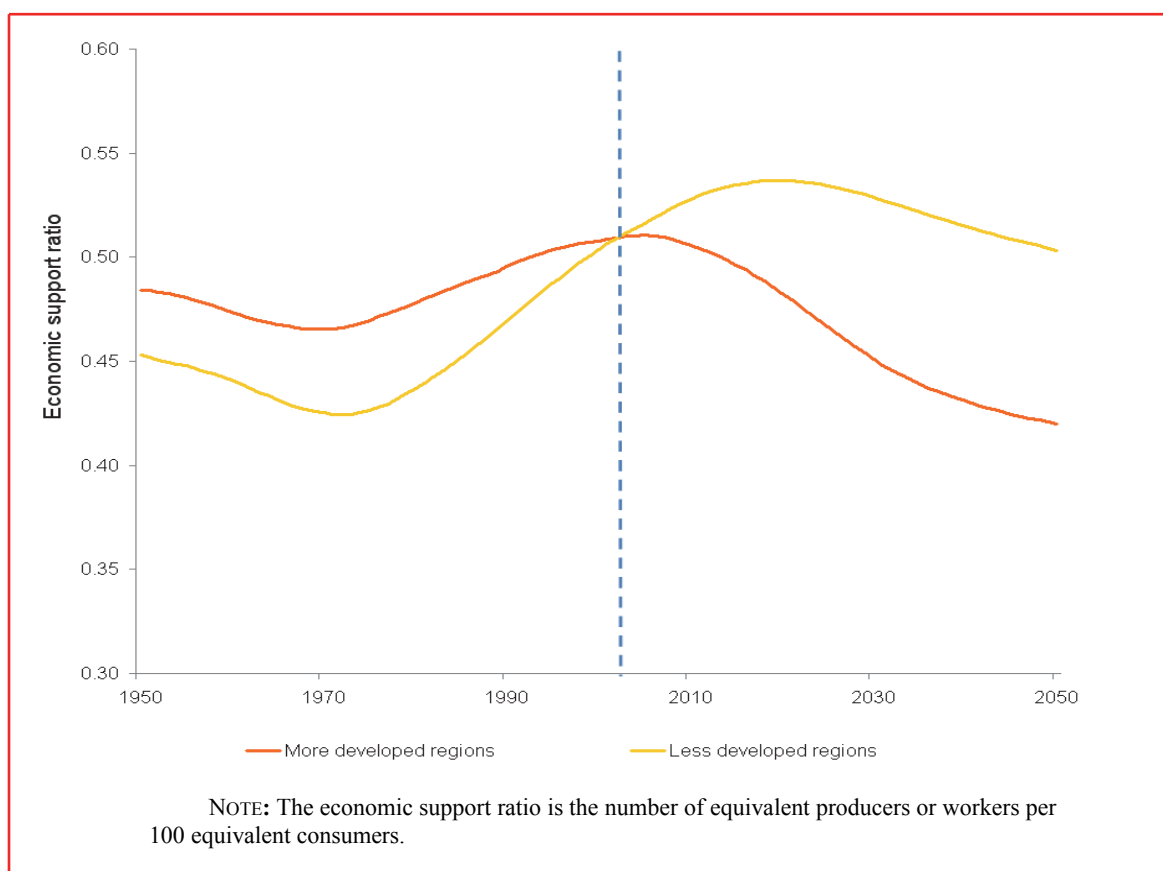
### ***The “window of opportunity” of the demographic dividend has mostly passed for developed countries, but it remains open for a majority of developing countries***

The growing global economic support ratio observed during the last decades provides a rather unique opportunity that could have beneficial effects on the macro-economy, through the so-called *demographic dividend*. The (first) demographic dividend is defined as the increase of per capita consumption brought about by a growing economic support ratio. The demographic dividend is an expression and consequence of population ageing: as populations move from the young age structure associated with high fertility levels to the older age structure of low fertility populations, there is a transitional period of slow growth (and eventually, a decline) in the number of children and relatively fast growth of youth and middle-age adults.

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<sup>12</sup> Country-specific curves were first normalized by dividing by the average of per capita labour income values for ages 30 to 49 years. Complete information regarding the National Transfers Accounts (NTA) project, is available from <http://www.ntaccounts.org>.

**Figure 2.9**  
**Economic support ratio by development region, 1950-2050**



The (first) demographic dividend can be expressed as the difference between the growth rate of the number of equivalent workers and that of equivalent consumers.<sup>13</sup> The difference gives the rate of economic growth that would result if the age profiles of production and consumption remained constant, and only the population age composition changed, as projected over time. In other words, the difference can be interpreted as the economic growth attributable to the changing age structure alone.

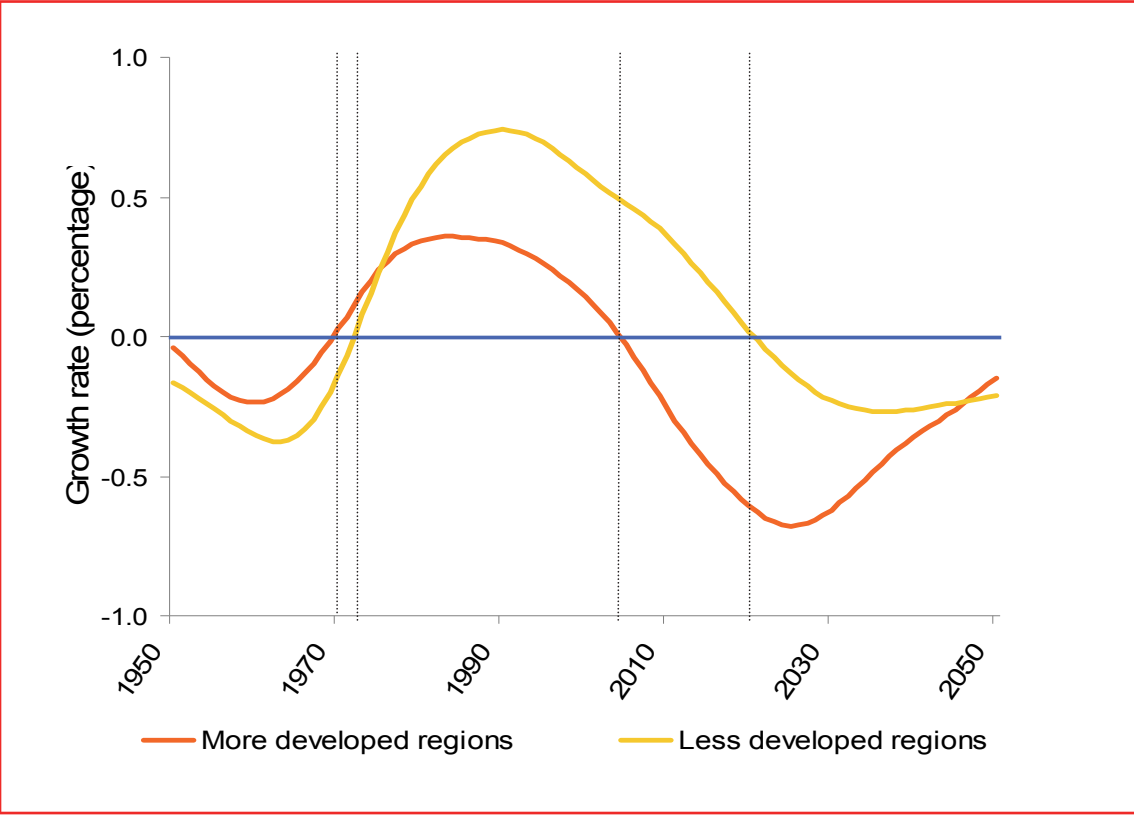
A positive growth in workers per consumer means that there are more resources available per capita in the economy that can be used to improve current consumption or to invest in human or physical capital, which increases future productivity and standards of living. This beneficial effect is a potential that will materialize only if employment and productivity do not worsen concomitantly. The dividend would not materialize, for example, if because of a drastic worsening of the labour market, the faster growth of the young-adult population resulted only in higher youth unemployment. If, by contrast, the employment rate and the levels of productivity do not fall significantly during the window of opportunity, the increased per capita resources can be used partly to increase consumption (economic well-being in the present) and partly to

<sup>13</sup> The “window of opportunity” is defined as the demographic dividend period, that is, the period during which the support ratio is increasing.

increase human capital investments or to build a better physical infrastructure with multiplicative effects on present and future economic growth and well-being.

Figure 2.10 shows the projected demographic dividend, that is, the difference between the growth rates of equivalent producers and consumers induced by demographic change alone. Values above zero reflect positive economic growth, while values below zero indicate a “negative dividend”, that is, a period during which demographic change is contributing to a reduction in economic growth, all things being equal.

**Figure 2.10**  
**Demographic dividend (demographically induced economic growth rates) by development region, 1950-2050**



In the less developed regions, a positive demographic dividend has been experienced since the early 1970s as the effective number of workers has been growing faster than the effective number of consumers. The projections indicate that this favourable trend will continue until about 2020. The more developed regions also benefitted from the demographic dividend, albeit to a smaller extent and during a shorter period of time, from about 1970 to 2005.



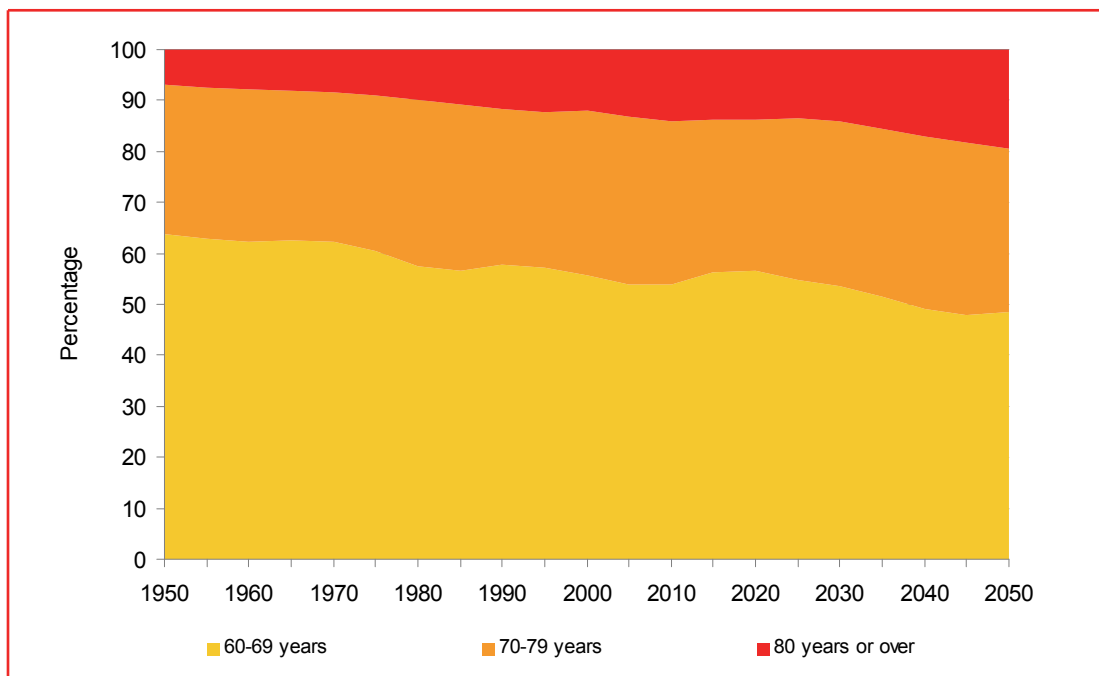
### III. Demographic profile of the older population

#### A. AGE COMPOSITION

##### *The older population itself is ageing*

Ageing is taking place in the world’s adult population and within the older population itself. The proportion of persons aged 80 years or over within the older population increased from 7 per cent in 1950 to 14 per cent in 2013 (figure 3.1). According to the medium-variant projection, this proportion of “oldest-old” within older persons is expected to reach 19 per cent in 2050 and 28 per cent in 2100. If this projection is realized, there will be 830 million persons aged 80 years or over by the end of the century, seven times as many as in 2013. As indicated in earlier chapters, the present number of persons aged 80 years or over is the result of a) the birth rates of many decades ago, which determined the initial size of these cohorts and b) the survival rates, which have been improving dramatically since these cohorts were born.

**Figure 3.1**  
Distribution of population aged 60 years or over by broad age group: world, 1950-2050



The rise in the population aged 80 years or over is occurring at a faster pace in the less developed regions than in the more developed regions (figure 3.2). In 1950, there were 6 million people aged 80 years or over in the less developed regions and 8 million in the more developed regions, but by 2013, people aged 80 years or over are already slightly more numerous in the less developed regions than in the more developed regions. By 2050, persons aged 80 years or over will reach 268 million in the less developed regions compared to only 124 million in the more developed regions (figure 3.2).

**Figure 3.2**  
**Population aged 80 years or over in the less and more developed regions, 1950, 2013, 2025 and 2050**

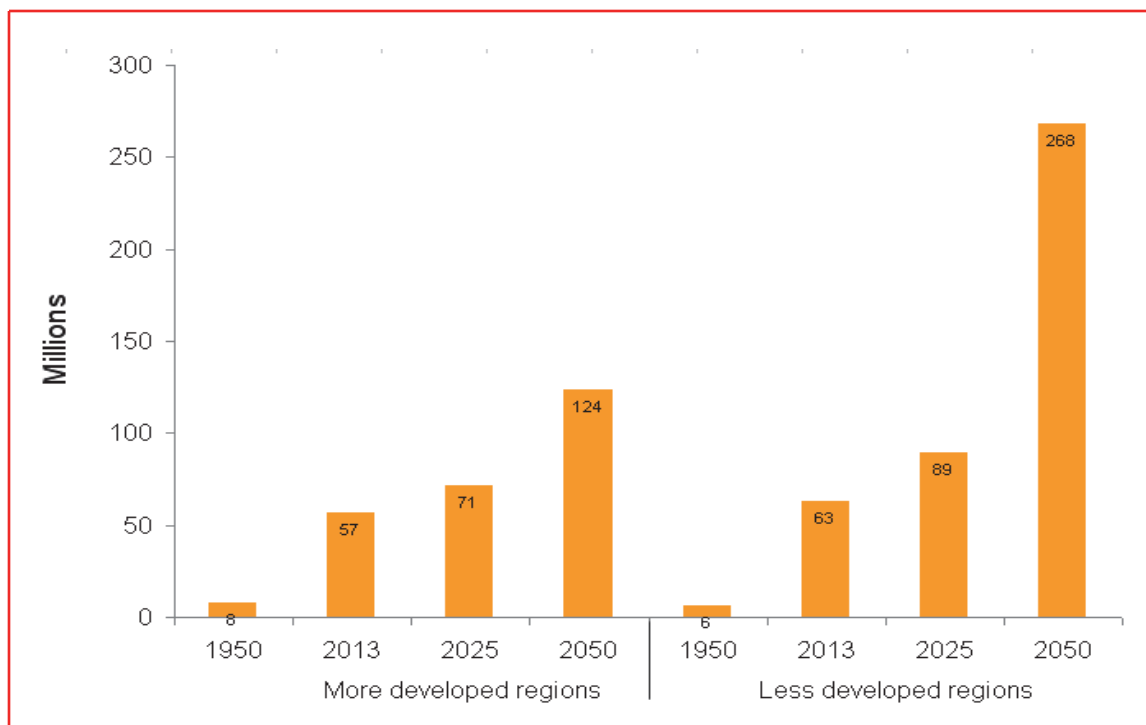


Figure 3.3 shows the ten countries with the largest number of persons aged 80 years or over in 2013. Twenty-three million persons aged 80 years or over were living in China in 2013, the country with the largest population of persons in that age group. The United States of America had about 12 million, followed by India and Japan, which had 10 million and 9 million, respectively. Other countries with large numbers of persons aged 80 years or over were Germany, the Russian Federation, Italy, France, the United Kingdom and Brazil, where the size of the population in that age group varied between 3 and 4 million.

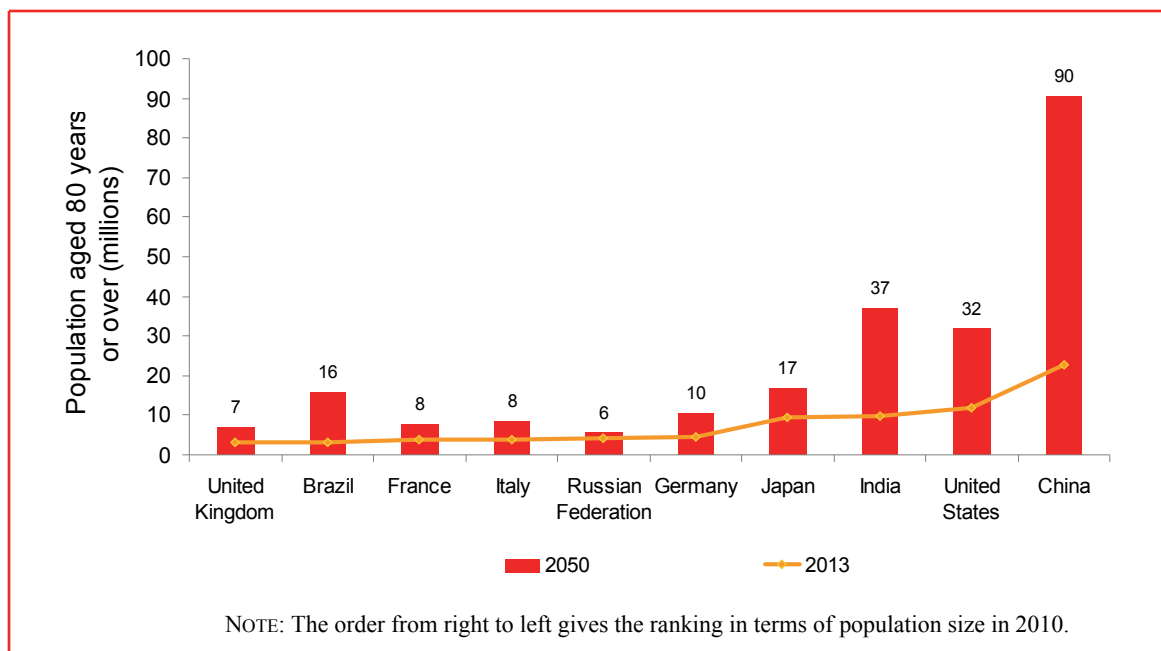
In 2050, China will still be the country with the largest population aged 80 years or over—90 million. India, which is projected to have 37 million persons in that age group, will outnumber the United States of America (32 million) as the country with the second largest population of people aged 80 years or over in the world. In 2050, several new developing countries will join the top ten countries in this regard, including Indonesia and Mexico, with approximately 10 million and 9 million persons, respectively.

The number and proportion of centenarians (people aged 100 years or more) is growing even faster. The number of centenarians in the world is projected to increase rapidly from approximately 441,000 in 2013 to 3.4 million in 2050 and 20.1 million in 2100.<sup>14</sup>

<sup>14</sup> Since all the centenarians from the present to 2100 have already been born, this projection has a relatively high degree of certainty.



**Figure 3.3**  
**Top ten countries with the largest population aged 80 years or over in 2013**



### **B. SEX RATIO OF THE OLDER POPULATION**

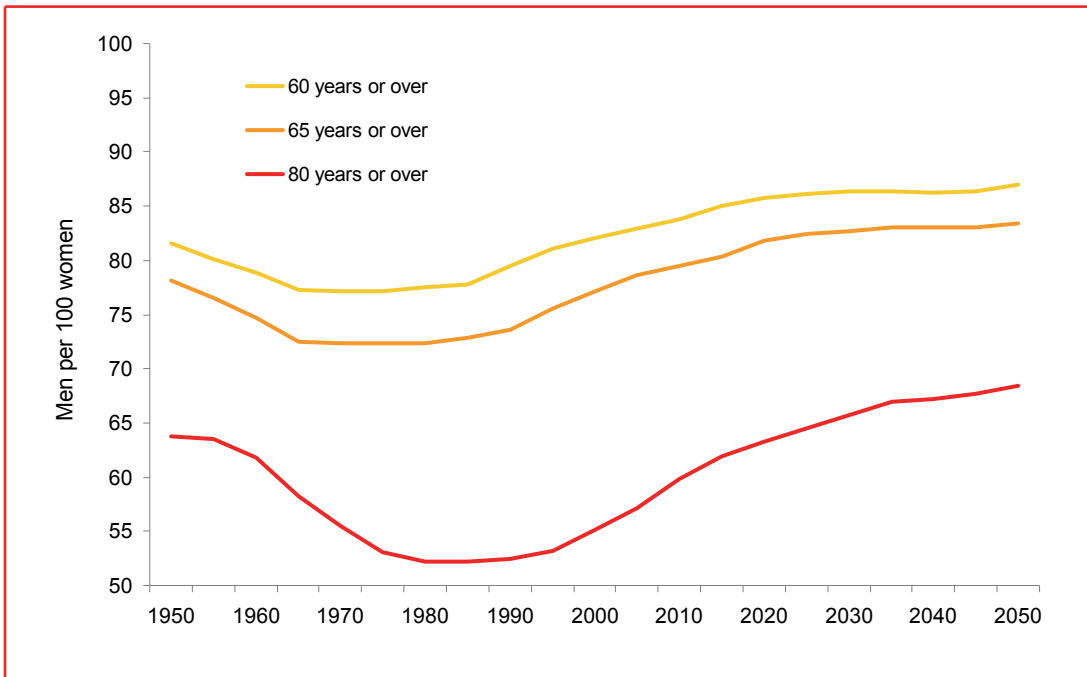
The majority of older persons are women and the female predominance tends to increase with age. This fact is reflected in that sex ratios (number of men per 100 women) are lower the older the age group (figure 3.4). In 2013, the global sex ratio was 85 men per 100 women in the age group 60 years or over, 80 men per 100 women in the age group 65 years or over and only 62 men per 100 women in the age group 80 years or over.

#### ***Predominantly female, the sex distribution of the older population is becoming slightly more balanced***

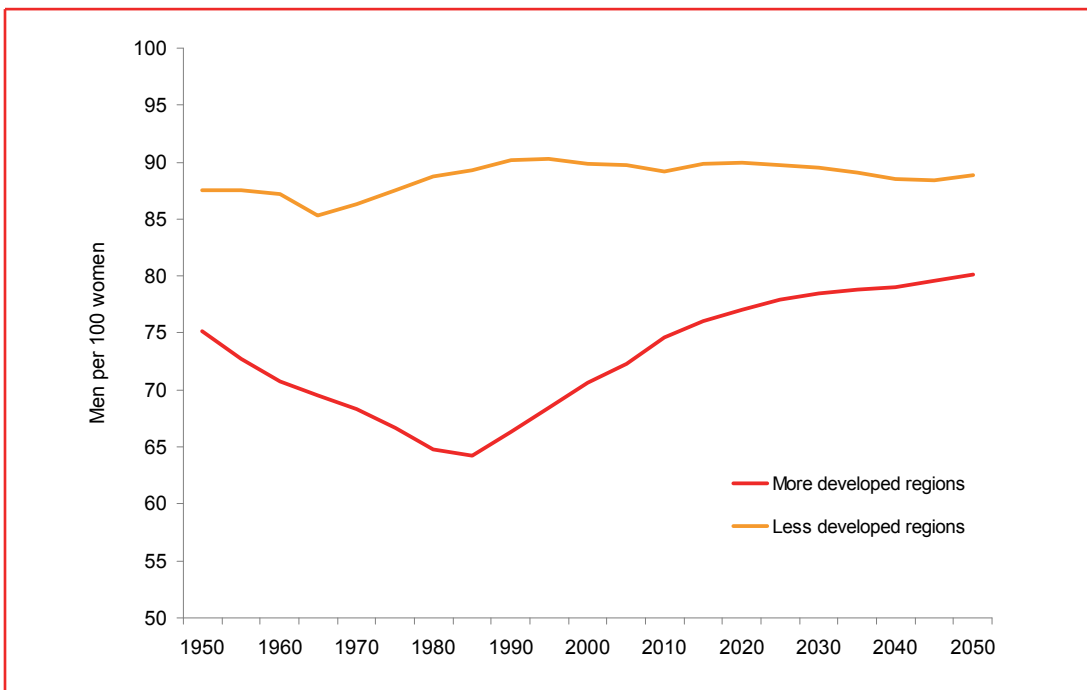
The distribution of the older population by sex is gradually becoming more balanced over time (figure 3.4). The sex ratio is projected to increase to 87 men per 100 women among persons aged 60 years or over by the year 2050. The corresponding ratios are 83 men per 100 women among persons aged 65 years or over and 69 men per 100 women among persons aged 80 years or over. The gradually increasing sex ratio over time is due to the somewhat faster projected decline in adult and old-age mortality of men compared to women, as documented in chapter 1.

The time trends in the sex ratio of the older population differ by major development region (figure 3.5). In the less developed regions, the sex ratio hovered narrowly between 85 and 90 men per 100 women until now, and is projected to stay slightly under 90 men per 100 women between 2013 and 2050. In the more developed regions, by contrast, the sex ratio among persons aged 60 years or over has been increasing significantly since the mid-1980s, and it is projected to rise further from 76 men per 100 women in 2013 to 80 men per 100 women in 2050. The sex ratios for persons in older-age groups follow similar time trends, albeit at different levels.

**Figure 3.4**  
**Sex ratios at ages 60 years or over, 65 years or over and 80 years or over: world, 1950-2050**



**Figure 3.5**  
**Sex ratio at age 60 years or over by development region, 1950-2050**

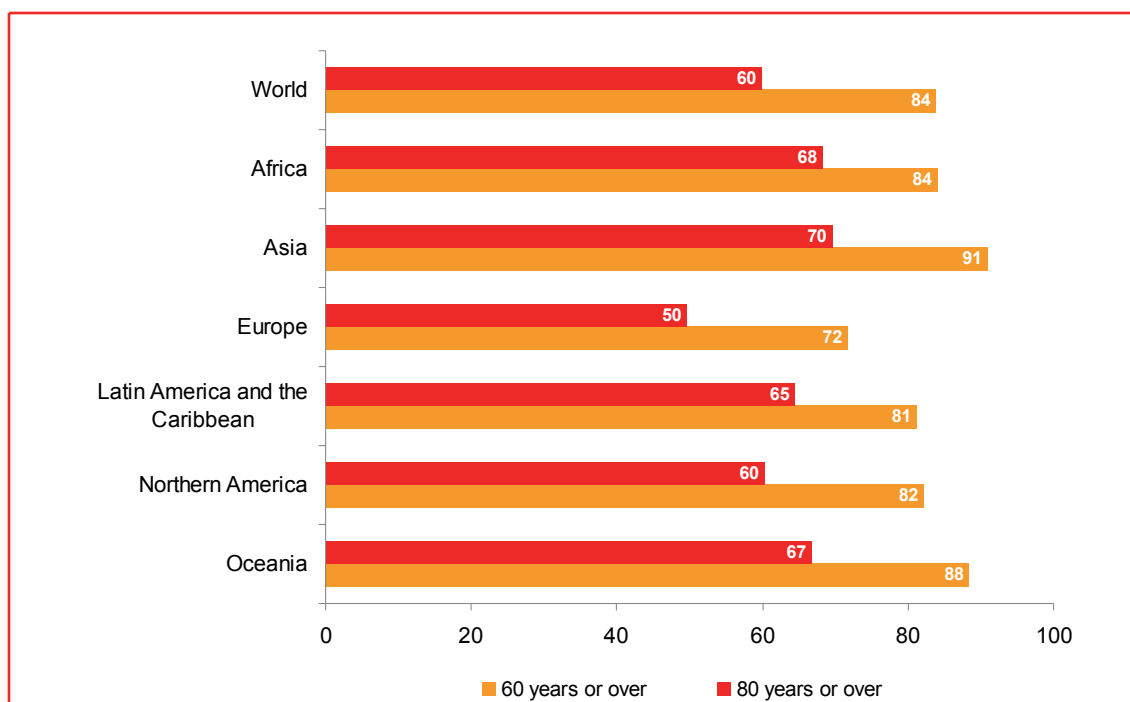


### *The sex ratio of the older population is lowest in Europe and highest in Asia*

The sex ratio among persons aged 60 years or over varies greatly by major area (figure 3.6). In 2013, the sex ratios were much lower in Europe (72 men per 100 women) and Northern America (82 men per 100 women) than in Oceania and Asia (88 men per 100 women and 91 men per 100 women, respectively). These statistics indicate that in the older population, women outnumber men by a wide margin in Europe, while in Asia the female predominance is much smaller.

Similarly, the sex ratios among the oldest-old (persons aged 80 years or over) are very low in Europe and Northern America (50 men per 100 women and 60 men per 100 women, respectively). By contrast, these ratios were much higher in Africa and Asia (68 men per 100 women and 70 men per 100 women, respectively). In other words, among the oldest-old, there were twice as many women as there were men in Europe, whereas in Africa and Asia, the ratio was about 1.5 women for every man in that age group.

**Figure 3.6**  
Sex ratios for the population aged 60 years or over and 80 years or over: world and major areas, 2013



### **C. MARITAL STATUS**

The marital status of older persons is mostly determined by the mortality rates of spouses and remarriage rates. Male spouses are more likely to die before their wives because of the higher male mortality and the fact that men tend to marry younger wives. In most societies, remarriage probabilities are lower for older women than for older men, partly because of the reduced availability of men of similar or older age. These two factors reinforce each other and

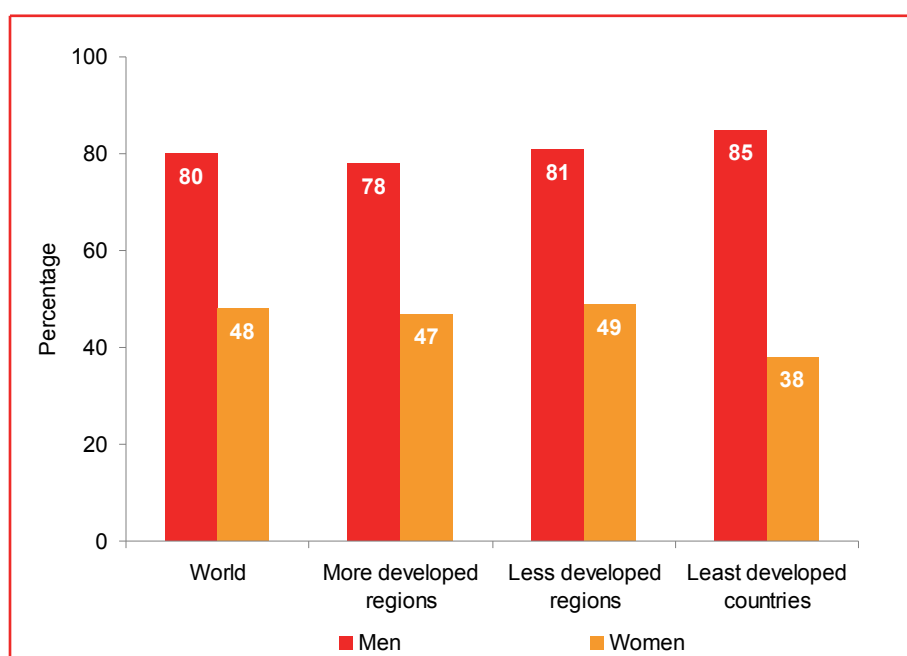
result in a rather wide gender gap in the marital status of older persons. In most societies, there are much more widows than widowers, and the proportion in a marital union is lower among older women than among older men.

*The proportion married among older persons is much higher for men than for women in both the less and more developed regions...*

The marital status of older persons varies little by development region. The overall proportion married (both sexes combined) among older persons aged 60 years or over in the less developed regions is 64 per cent, a little higher than the 60 per cent in the more developed regions.

In both the less and more developed regions, the proportion married among men aged 60 years or over is around 80 per cent and among women aged 60 years or over, it is slightly below 50 per cent (figure 3.7). In the least developed countries, the percentage married among older men is higher than the world average, and the percentage married among women is significantly lower (United Nations, 2012).

**Figure 3.7**  
Proportion currently married among persons aged 60 years or over by sex:  
world and development regions, 2005–2008

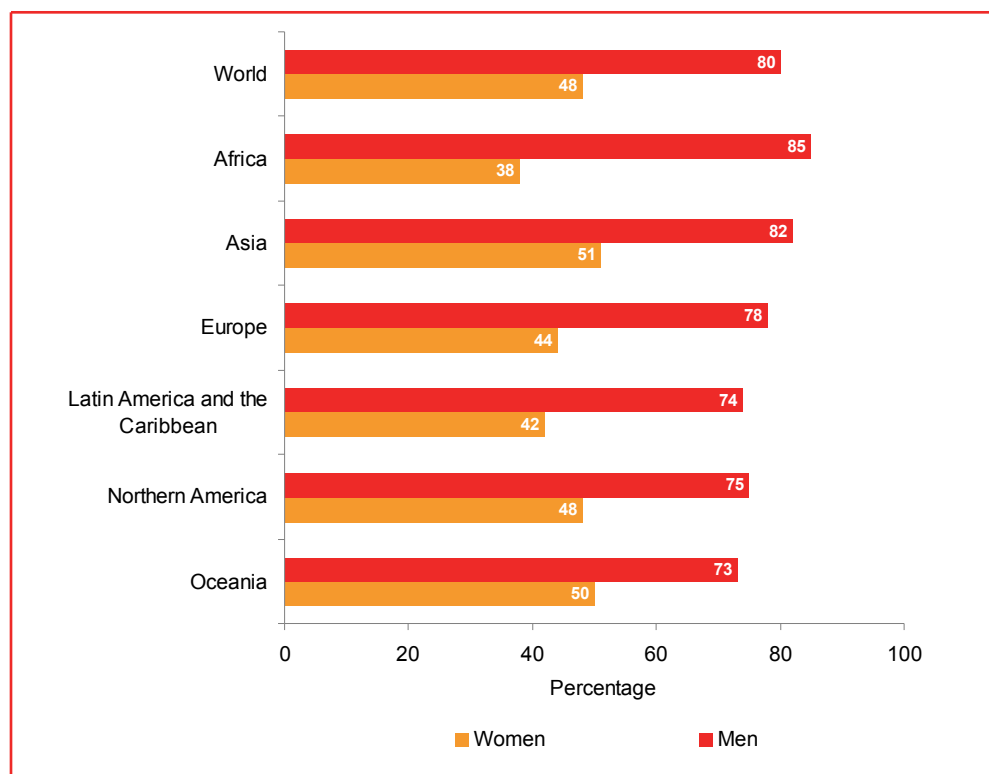


*... and varies greatly across major areas and countries*

The proportion married among older men (figure 3.8) is highest in Africa and Asia with 85 per cent and 82 per cent, respectively and lowest in Oceania, where it is 73 per cent. The proportions for Latin America and the Caribbean (74 per cent), Northern America (75 per cent) and Europe (78 per cent) fall in between these extremes.

Among older women, the proportion married is highest in Asia (51 per cent), followed by Oceania (50 per cent) and Northern America (48 per cent). The proportion is lower in Europe (44 per cent) and Latin America and the Caribbean (42 per cent) and lowest in Africa (38 per cent). The gender gap in the proportion married among older persons is substantial everywhere, but is highest in Africa (47 percentage points) and lowest in Oceania (22 percentage points).

**Figure 3.8**  
**Proportion currently married among men and women aged 60 years or over:**  
**major areas, 2008**



Some countries in the Middle East, Northern Africa and Southern Asia, have exceptionally high proportions of married older men. More than 90 per cent of older men in Kuwait, Morocco, Bangladesh, United Arab Emirates and Saudi Arabia, among other countries, were married. Still a large majority (under 75 per cent) but relatively smaller proportions of older men in Latin America and the Caribbean<sup>15</sup> and Oceania were married.

Among older women, the highest proportions married were found in Asia. More than half the older women in China and Japan were married and that proportion was as high as 66 per cent in Sri Lanka and 71 per cent in Nepal. The largest gender gap of marital status in the world

<sup>15</sup> These figures may be biased downward to the extent that consensual unions, which are quite common in the countries of this major area, may not have been fully reflected as marriages in the statistics.

occurred in Chad, where only 16 per cent of older women were married, compared to 85 per cent of older men. Other countries with a large gender gap in marital status were the United Arab Emirates, Bangladesh and Kuwait, where the proportion married was greater than 90 per cent among older men compared to only between 30 to 38 per cent among older women.

#### **D. LIVING ARRANGEMENTS<sup>16</sup>**

The living arrangements of older persons are determined by cultural norms regarding co-residence and inter-generational ties and familial support. Living arrangements are also fundamentally affected by demographic change, and, in particular, by population ageing. In an aged population, older persons have relatively fewer children and grandchildren than in a youthful population. Partly because of this situation, older persons in more aged populations are less likely to live in multi-generational households and are more likely to live independently, that is, either alone or with a spouse only. The longer life spans associated with ageing populations open opportunities for more complex intergenerational living arrangements, such as three- or even four-generation households (United Nations, 2005).

#### ***Living independently is rare among older people in developing countries, but is the dominant living arrangement in developed countries***

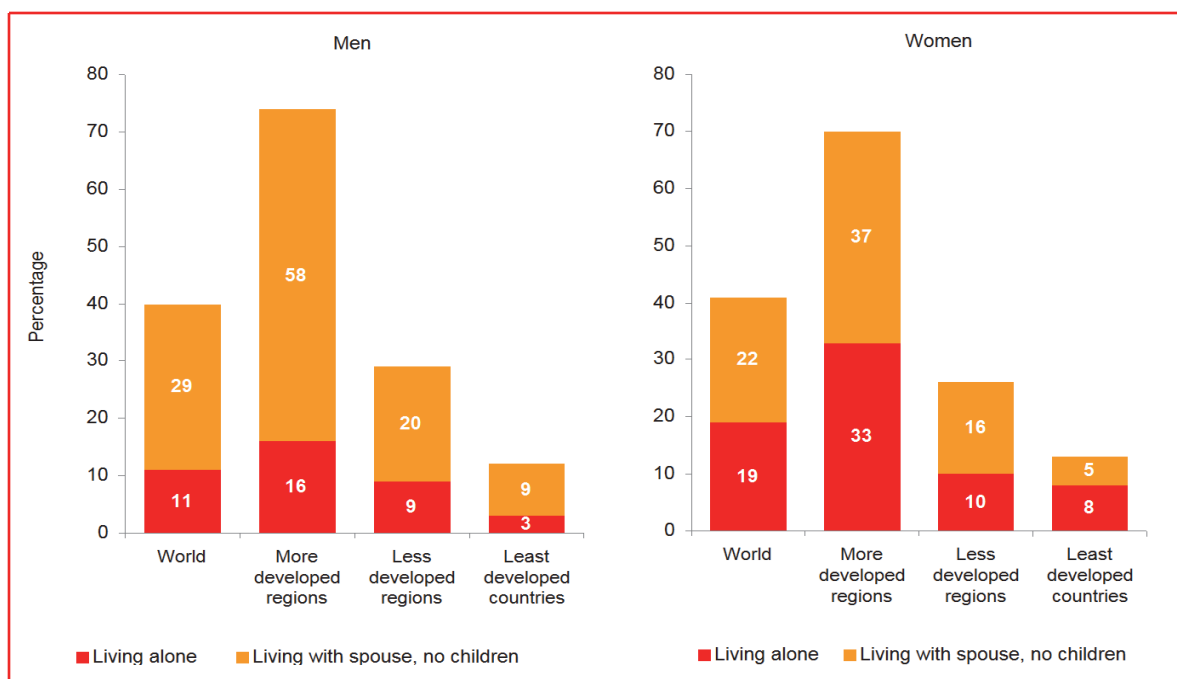
Living independently might be the preferred arrangement for some older individuals, but it might be an undesired situation for others, depending on the cultural norms and the inter-generational support system of the particular society. In developing countries where older persons have limited resources to sustain themselves and rely heavily on support from children, living independently, especially alone, could be a disadvantage or even an indication of neglect. In societies where older persons have sufficient economic resources, including public pensions and asset income, living independently tends to be a sign of economic self-sufficiency and higher standards of living.

At the world level, 40 per cent of the world's older population lives independently, with no significant difference by sex (figure 3.9). Almost half of women living independently live alone (United Nations, Department of Economic and Social Affairs, Population Division, 2012b; United Nations, 2012; UNFPA and HelpAge International, 2012). By contrast, only a minority of older men live alone. The gap in the proportion living independently between the more developed regions and the rest of the world is remarkable. Older persons who live independently represent almost three quarters of all older persons in the more developed regions compared to just over 10 per cent in least developed countries and one quarter in the less developed regions.

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<sup>16</sup> This section is based on information from the databases of the Integrated Public Use Microdata Series (IPUMS), International project (Minnesota Population Center, 2011), the Demographic and Health Surveys (DHS) programme (MEASURE DHS, 2011) and the Survey of Health, Ageing and Retirement in Europe (SHARE) study (Munich Center for the Economics of Aging, 2011). When several databases were available for a country, the most recent information was used with one exception: censuses from the 2000 wave were preferred over more recent surveys. Overall, estimates could be computed for 101 countries; the sources of data were the IPUMS for 52 countries, the DHS for 43 countries and the SHARE for 6 countries. The modal year of the databases was 2005. The median sample size for the estimates were 110,000 persons aged 60 or over in the IPUMS census micro-data, 3,100 older persons in the DHS data and 1,800 older persons in the SHARE data. Finally, the information for China came from a 20-per cent sample of 314,000 individuals of China's 2005 mini-census.

**Figure 3.9**  
**Proportion living independently (alone or with spouse only) among persons aged 60 years or over by sex: world and development regions, 2005**



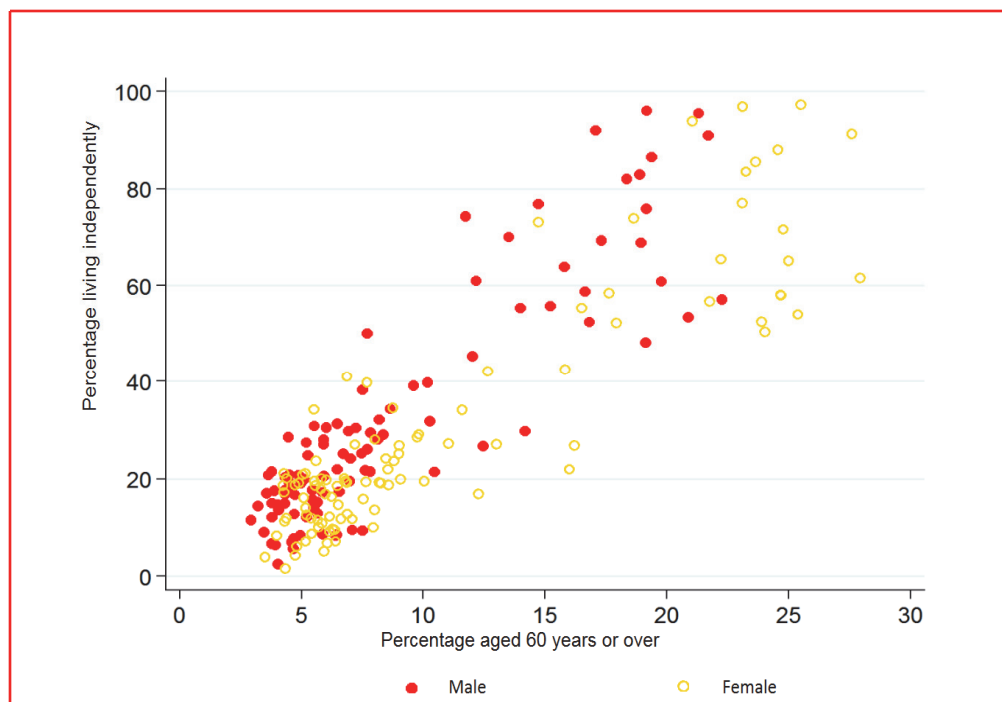
*Independent living among older people is becoming more common*

Despite significant cross-country variability, there is a generally positive correlation between the proportion of older persons living independently and population ageing across countries (figure 3.10). In countries where the proportion of persons aged 60 years or over is less than 10 per cent, the proportion living independently hardly ever surpasses 40 per cent.<sup>17</sup> In contrast, in all countries where the proportion of older persons is higher than 20 per cent, older persons living independently constitute a majority (more than 50 per cent of all older persons). In demographically aged countries, large differences by region exist in the proportion living independently. In Northern Europe for instance, more than 90 per cent of older persons live independently, according to the Survey of Health, Ageing and Retirement in Europe (SHARE), whereas in Southern Europe (Greece, Italy, Spain and Portugal), less than 60 per cent live independently (SHARE, 2011).

If this association between the degree of ageing and independent living continues to hold in the future, more older persons will be expected to live independently in both the more and less developed regions, as their populations continue to age.

<sup>17</sup> The only two exceptions are older males in Kazakhstan and older females in the Islamic Republic of Iran.

**Figure 3.10**  
**Independent living and percentage of older persons, around 2005**



***A minority of older persons are subordinated to younger household members***

A key issue on older persons who do not live independently is the nature of the co-residence. Is the older person living in the household of others or are the other household members living in the home of the older person? This question is relevant because it reflects the status of the older person in the household, who may either be the person controlling the resources and making the decisions, or a dependent person who is subordinated to others.

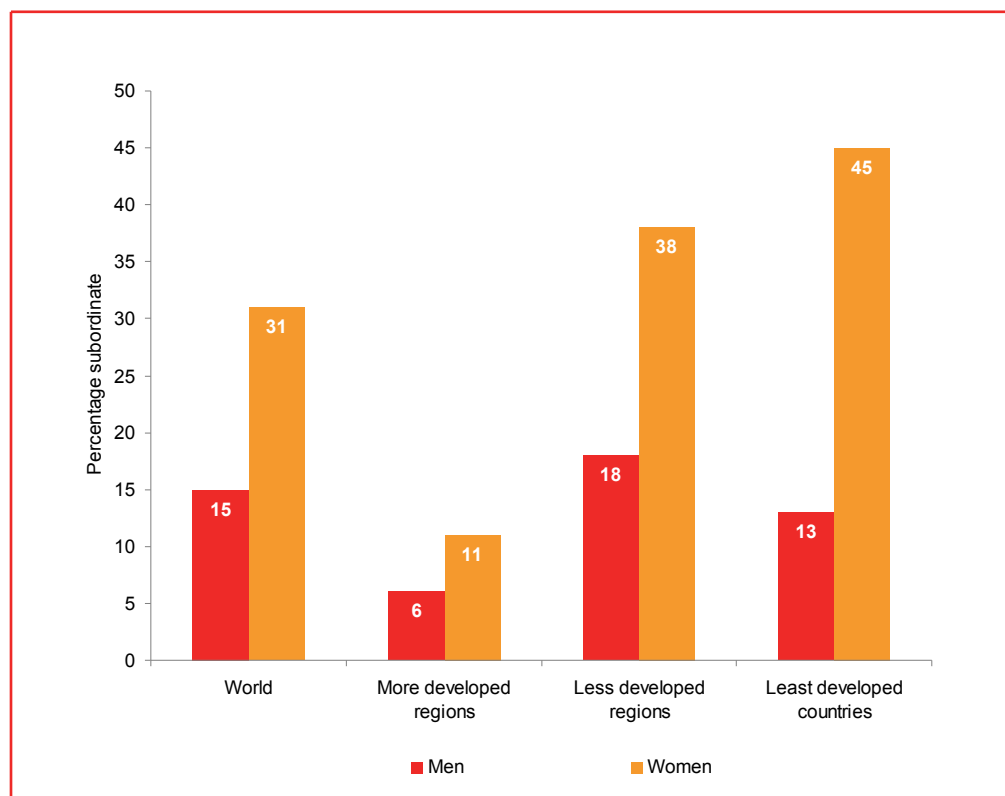
An indirect way of addressing this question is by examining who is the reported household head in the survey or census. The available data show that a large majority of older persons not living independently, specifically, 85 per cent of older men and 69 per cent of older women are household heads or their spouse is the household head (figure 3.11). In other words, only 15 per cent of older men and 31 per cent of older women live in households in which neither themselves nor their spouses are the head of the household. These figures can be taken as an indicator of the proportion of older persons in a “subordinated” position within the household hierarchy.

Subordination of older persons within the household affects only a minority of older persons (figure 3.11). Nonetheless, the data show that, where it exists: 1) subordination is far more prevalent among women—45 per cent of older females are subordinated, compared to only 13 per cent of males; and 2) subordination is much larger in the less developed regions than in the more developed regions—the proportion of older persons who are not household heads and whose spouses are not household heads either, is 28 per cent in the less developed regions (18 per cent among men and 38 per cent among women). This level is approximately three times as



great as the proportion of only 9 per cent in the more developed regions. Thus although inter-generational companionship at older ages sometimes comes with subordination to younger persons in the household, the opposite is more often the case, as a large proportion of older persons remain the heads of their households even when they live with younger relatives.

**Figure 3.11**  
**Proportion of “subordinate” older persons (neither the older person nor his or her spouse is the household head) by sex: world and development regions, 2005**





## IV. Characteristics of the older population

### A. HEALTH OF THE OLDER POPULATION

Increasing life expectancy raises the question of whether longer life spans result in more years of life in good health, or whether it is associated with increased morbidity and more years spent in prolonged disability and dependency. The major causes of disability and health problems in old age are non-communicable diseases including the “four giants of geriatrics,” namely: memory loss, urinary incontinence, depression and falls or immobility, as well as some communicable diseases and injuries. As population age, health expenditures tend to grow rapidly since older persons usually require more health care in general and more specialized services to deal with their more complex pathologies. The number of deaths also increases sharply due to the exponential increase in mortality with age. Furthermore, older women generally experience higher rates of morbidity and disability than older men, in large part because of their longer life expectancy (WHO, 2007).

This section starts with an overview of trends in old-age mortality, and is followed by a brief examination of the major causes of death.

#### *The world’s crude death rate is beginning to rise because of population ageing*

The world’s crude death rate, the ratio of annual total deaths to the total population, is increasing because population ageing shifts the age distribution towards the older ages, which are subject to higher risk of mortality (figure 4.1).<sup>18</sup> Because of this, population ageing causes two seemingly paradoxical situations: (1) an increase in the crude death rates despite the increasingly longer life expectancy and (2) highest crude death rates observed in regions with the lowest overall levels of mortality. The global crude death rate is expected to reach its lowest point in 2015 with about 8.0 deaths per 1,000 population per year, and to gradually increase thereafter, reaching 9.8 deaths per 1,000 population by 2050.

In the more developed regions, the crude death rate has been increasing since the 1970s and will continue to rise in the foreseeable future, from 10.1 per 1,000 population in 2010 to 12.4 deaths per 1,000 population in 2050. In the less developed regions, the crude death rate is expected to decrease until 2015, to 7.5 deaths per 1,000 population, and then rise to 9.4 deaths per 1,000 by 2050. The group of least developed countries is the only development group where the crude death rate is expected to continuously decline to reach the low level of 6.8 deaths per 1,000 population by 2045.

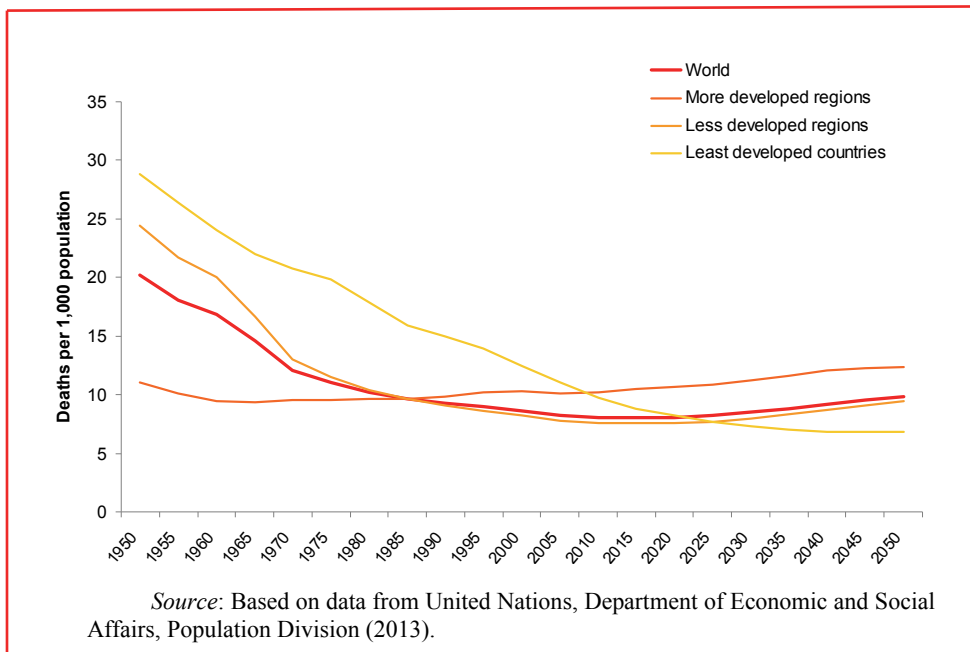
#### *Deaths will increasingly be concentrated at older ages*

Population ageing, along with population growth, results in a rapidly growing number of deaths in the world, especially in the less developed regions and least developed countries (figure 4.2). The annual number of deaths in the world was rather stable, even slightly declining from 1960 to 1970, a decade in which the lowest level—51 million—of deaths per annum was recorded. From then on, the annual number of deaths has been rising; in 2010, it reached 64 million, with more than three fourths of the deaths taking place in the less developed regions.

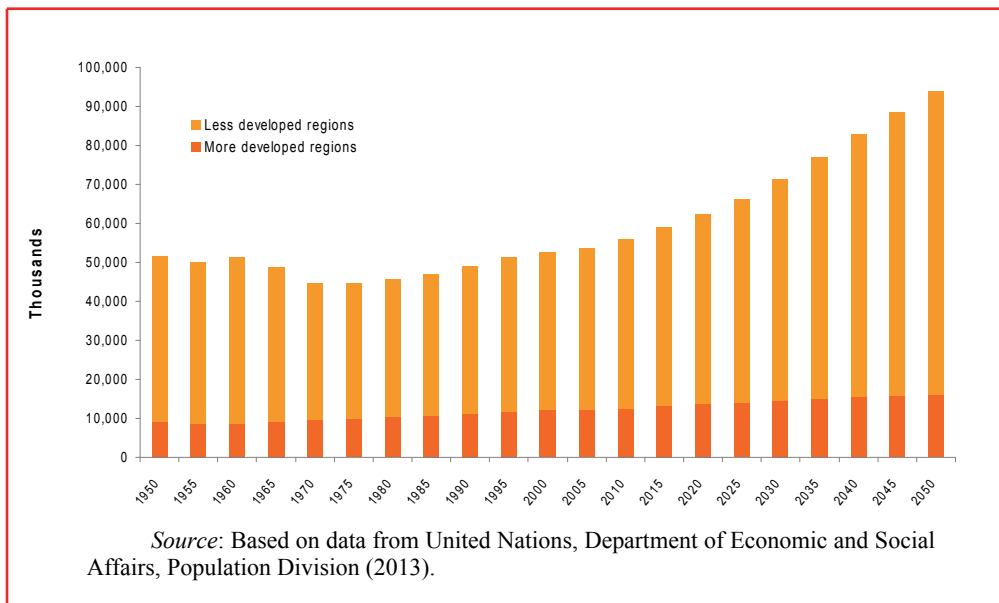
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<sup>18</sup> A major exception is the least developed countries, where the ageing process has not yet started or is very incipient.

**Figure 4.1**  
**Crude death rates: world and development regions, 1950-2050**



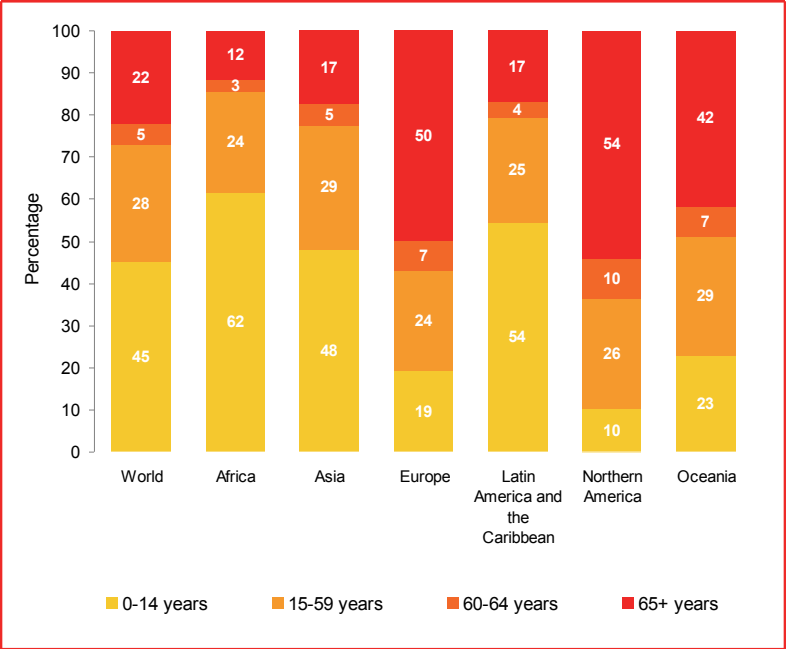
**Figure 4.2**  
**Annual number of deaths: world and development regions, 1950-2050**



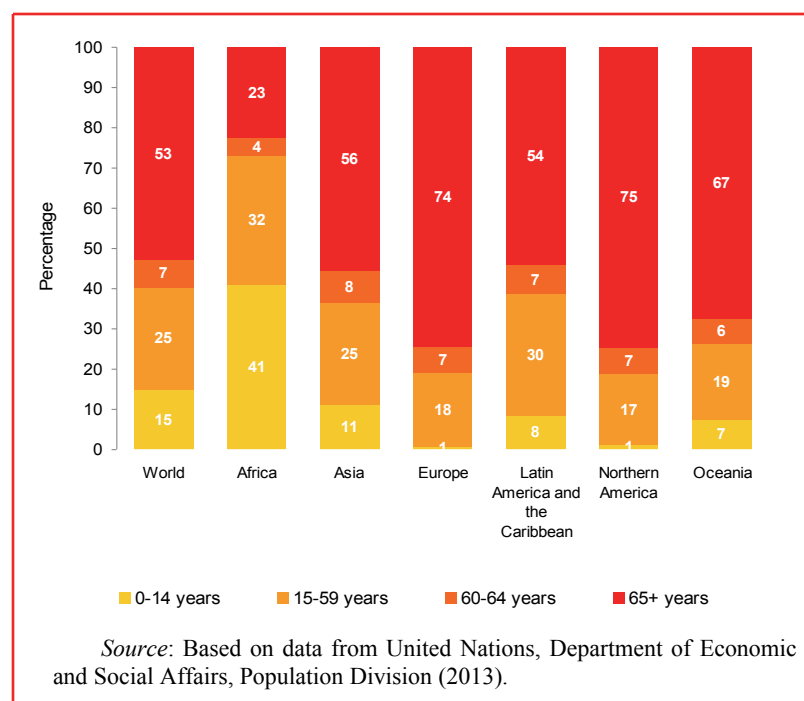
Just half a century ago, when the world’s population was still young, a large proportion of deaths came from children. In 1950-1955, 45 per cent of deaths were of children under the age of 15 (figure 4.3a), while deaths of persons aged 65 years or older represented only 22 per cent of the total. The highest share of child deaths was recorded in Africa, Asia and Latin America and the Caribbean, with 62 per cent, 48 per cent and 54 per cent, respectively, of all deaths. In contrast, in the more developed regions, about half of all deaths were concentrated in ages 65 years or over, while deaths among children represented less than 20 per cent of the total.

As countries have made progress in their demographic transitions, the distribution of deaths has shifted towards older ages. In 2005-2010, over half (53 per cent) of all deaths in the world were concentrated in the population aged 65 years or over, while the proportion of deaths among children (aged 0-14) had declined to 15 per cent (figure 4.3b). At the regional level, the more developed regions of Europe, Northern America, Eastern Asia and Oceania had higher death rates in older ages than in the less developed regions of Asia and Latin America and the Caribbean. In Oceania and Eastern Asia, approximately two thirds of deaths were of persons aged 65 years or over. In Europe and Northern America, almost three quarters of all deaths were among this same age group, while in Southern and Western Europe, it was as many as 9 out of 10 deaths. In Asia and Latin America and the Caribbean, approximately half of all deaths were of people in this age range. In contrast, only about a quarter of deaths in Africa were of people aged 65 years or older.

**Figure 4.3a**  
**Distribution of deaths by age group and major area, 1950-1955**



**Figure 4.3b**  
**Distribution of deaths by age group and major area, 2005-2010**



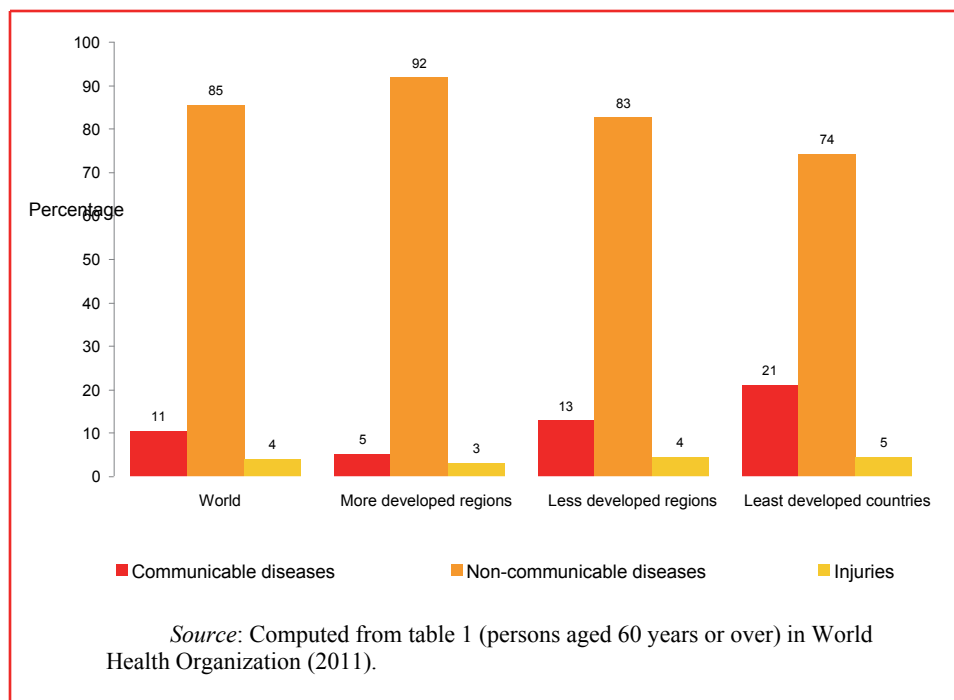
***Non-communicable diseases are the main cause of disability and death among older persons***

As more people are living longer almost everywhere in the world, the causes of death and disability are changing from infectious to non-communicable diseases, and in some countries, to injuries. The disability-adjusted life years (DALY) measure the burden of disease, injury and death in a given population. DALYs are calculated as the sum of the years of life lost (YLL) due to premature death and the years lost due to disability (YLD) resulting from disease or injury. One DALY can be thought of as one lost year of “healthy” life (WHO, 2011). The main causes of DALY for the older population are almost everywhere non-communicable diseases such as heart disease, cancer and diabetes, in all development groups (figure 4.4). Communicable diseases and injuries are responsible for a much smaller fraction of DALY among the older population of the world.

The distribution of DALYs by age group varies greatly across development regions and it is closely associated with the level of development. In the more developed regions, 33 per cent of DALYs were attributable to persons aged 60 years or over in 2004. By contrast, in the less developed regions, only around 12 per cent of DALYs were attributable to the same age group, and in the least developed countries, the proportion was even lower, of only 6 per cent.

At the world level, 85 per cent of persons aged 60 years or over died from non-communicable diseases in 2008. The percentage by region show that in the more developed regions 92 per cent of persons aged 60 years or over died from non-communicable diseases, while in the less developed regions and least developed countries the percentages were 83 per cent and 74 per cent, respectively.

**Figure 4.4**  
**Distribution of deaths among persons aged 60 years or over by cause, 2008**



Since susceptibility to non-communicable diseases increases with age, continued population ageing will result in significant increases in mortality due to non-communicable diseases, even if the age-specific mortality risks of dying from a non-communicable disease stay the same or even decline moderately (United Nations, 2012). Furthermore, the increasing levels of exposure to risk factors such as tobacco use, unhealthy diet, physical inactivity and the harmful use of alcohol in developing regions could have long-term consequences as these risk factors can have cumulative effect over the life-cycle (Palloni, 2013).

Communicable diseases, which are largely contained in the more developed regions, still claim a minority but significant number of lives among older persons in the less developed regions. In 2008, the proportions of old-age deaths due to communicable diseases were 13 per cent in the less developed regions and 21 per cent in least developed countries (figure 4.4), while the corresponding proportion was only 5 per cent in the more developed regions. Deaths caused by communicable diseases are commonly associated with low income, poor diets and limited sanitary and health care infrastructure found in developing regions (WHO and U.S. NIA, 2011).

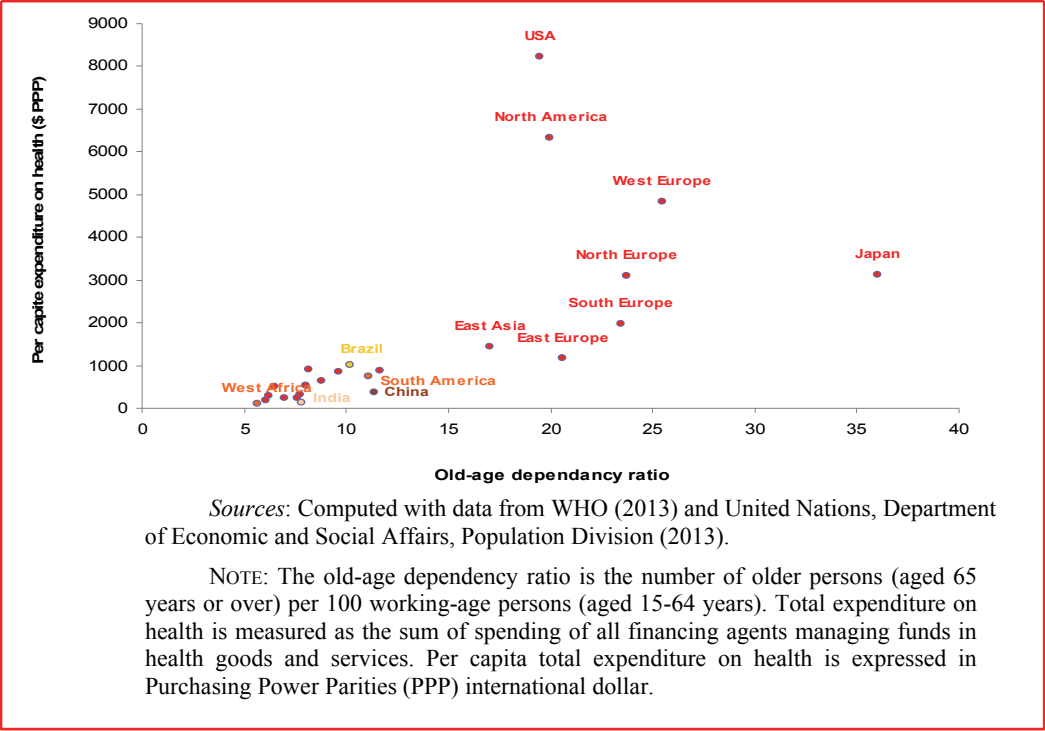
### ***Population ageing could drive increases in health expenditure***

Population ageing is associated with higher health expenditure, partly due to the increase in the proportion of older persons, which have higher prevalence of morbidity and demand for health care than younger adults. This effect is reinforced by increased survivorship into the oldest-old ages that lengthens the period between onset of significant morbidity or disability and death, and therefore augments the lifetime cost of health care. In the more developed regions

with comprehensive social security systems, the majority of the health expenditure is covered by social insurance schemes. In the less developed regions with low levels of health care coverage, health expenditure is mainly financed with private spending by individuals.

Per capita health expenditure,<sup>19</sup> both public and private, tends to increase with population ageing (figure 4.5). The more aged societies of Europe, Northern America and Australia, which have high old-age dependency ratios,<sup>20</sup> spend more on health than countries with younger populations. The association, however, is not perfect or linear, for example, the United States of America has the highest level of per capita health expenditure among the more developed countries, although it has a younger age structure than many of the countries in this group. Western European countries spend about \$4,833 per capita on health, although their populations are more aged than those in Northern America. In Eastern Asia, per capita health expenditure is \$1,438 on average, excluding the exceptional case of Japan, the most aged country in the world, which spends about \$3,120 per capita on health. Another interesting case is that of China, which still has a relatively young population structure and spent only \$374 per person in health care services in 2010. Nevertheless, China is set to experience very fast ageing over the coming decades, with ensuing pressures to increase both per capita and total spending in health.

**Figure 4.5**  
**Old-age dependency ratio and per capita expenditure on health (\$PPP): selected countries and regions, 2010**



<sup>19</sup> Measured in U.S. dollars at Purchasing Power Parity, or PPP.

<sup>20</sup> The old-age dependency ratio is the number of persons aged 65 years or over per 100 working-age persons aged 15 to 64 years.



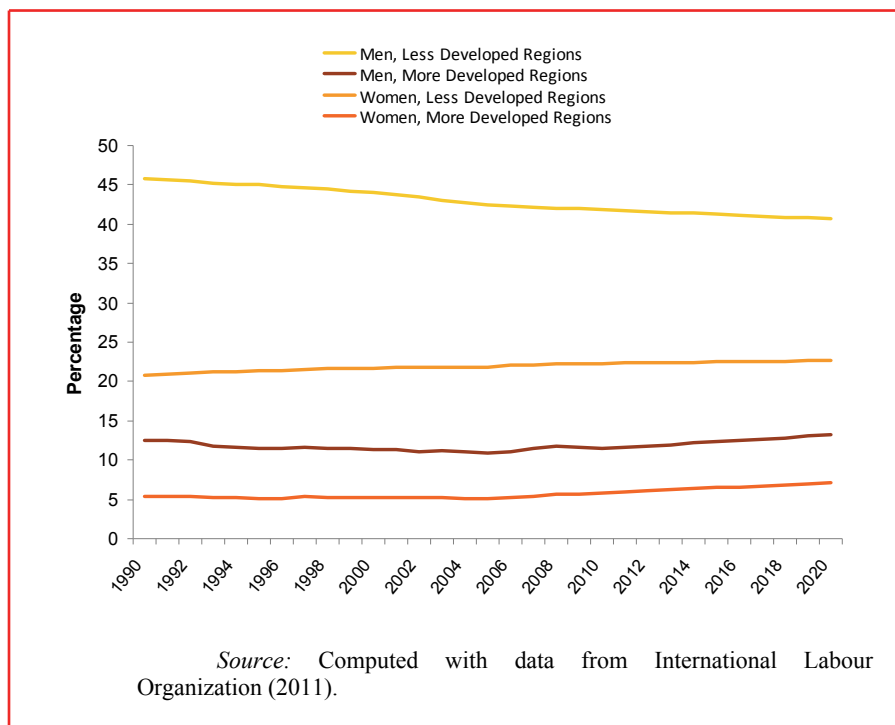
## B. LABOUR FORCE PARTICIPATION

### *Older persons in less developed regions work until later in life*

Many older persons still need to work into older ages, especially in developing countries. In 2010, the labour force participation of persons aged 65 years or over was around 31 per cent in the less developed regions and 8 per cent in the more developed regions. In both development regions, men made up a large majority of the total labour force among older persons.

In the less developed regions, 42 per cent of older men were in the labour force in 2010, compared to only 11 per cent in the more developed regions (figure 4.6). There were also, proportionately, more older women working in less developed regions (22 per cent) than in the more developed regions (6 per cent).

**Figure 4.6**  
**Labour force participation of persons aged 65 years or over by sex and Development region, 1980-2020**

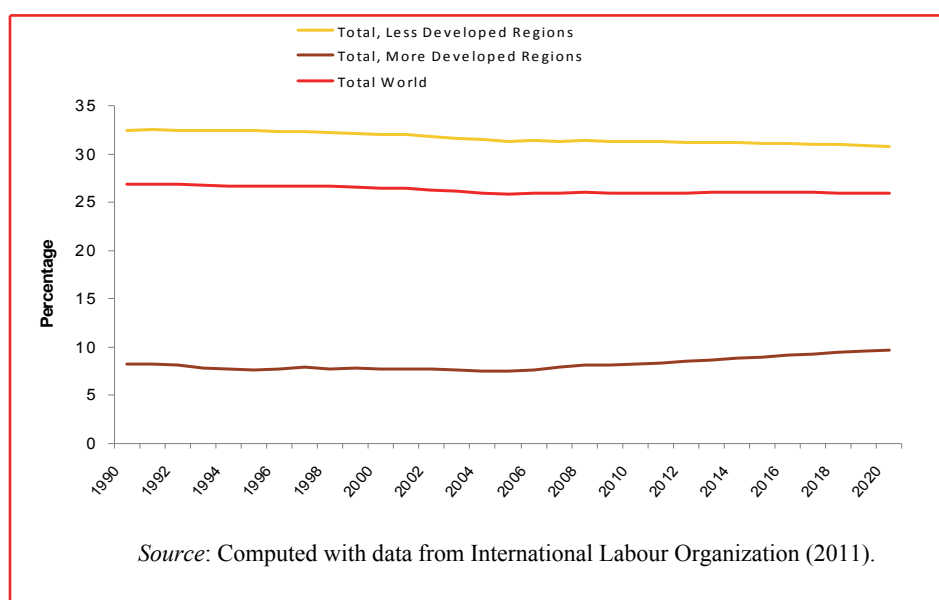


### *Working at older ages is declining in developing countries but rising in more developed regions*

According to data from the International Labour Organization (ILO), at the world scale, the labour force participation of the older population gradually declined from 1990 to 2005 and is projected to remain relatively stable until 2020 (figure 4.7). At the regional level, the total labour force participation of the older population is declining in the less developed regions and increasing in the more developed regions. More specifically, figure 4.6 shows that the labour

force participation among older men is decreasing in the less developed regions and increasing in the more developed regions. The labour force participation of older women is increasing in both the more and less developed regions, but since men still outnumber women by far in the labour force, the total labour force participation trend is decreasing in the less developed regions.

**Figure 4.7**  
**Labour force participation of persons aged 65 years or over, 1980-2020**



The increase in female labour force participation among older persons in the less developed regions is consistent with the more general trend of higher participation of women in the labour market, at all ages. In the more developed regions, after a long decline beginning around 1980, the labour force participation rate of older males started to increase in the mid-2000s (figure 4.6), driven partly by the institution of higher retirement ages in many countries.<sup>21</sup> In contrast, the labour force participation rate of older males in the less developed regions has been declining rather steadily.

On the whole, however, the increased participation of older women in the labour force is expected to roughly offset the decline in the participation of older men over the next 10 years or so (ILO, 2011).

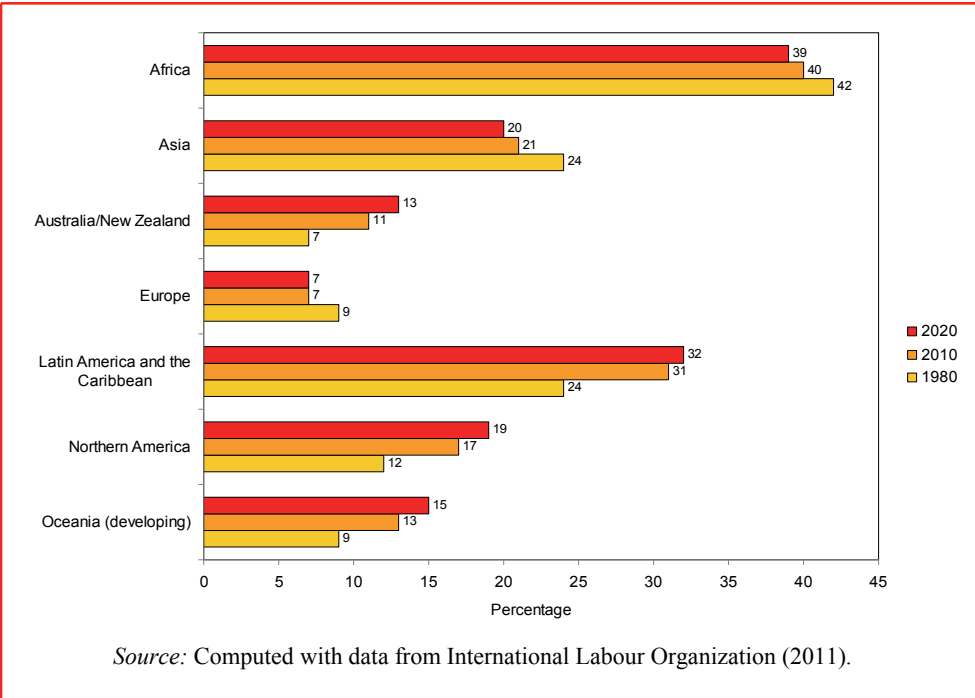
#### **Wide regional and international variations in old-age labour force participation**

Figure 4.8 shows that labour force participation among older persons is highest in Africa (40 per cent), followed by Latin America and the Caribbean (31 per cent), Asia (21 per cent), Northern America (17 per cent), Oceania (12 per cent), and finally Europe (7 per cent). Latin

<sup>21</sup> In more recent years, the postponement of retirement has been also affected by the financial and economic crisis, and slow ensuing recovery.

America and the Caribbean, Northern America and Oceania have seen increases in the labour force participation of older persons since 1980, and this is projected to continue until 2020. Participation rates are projected to decline in Africa and Asia and to remain at its current low level in Europe by 2020.

**Figure 4.8**  
**Labour force participation of persons aged 65 years or over by major area, 1980, 2010, and 2020**



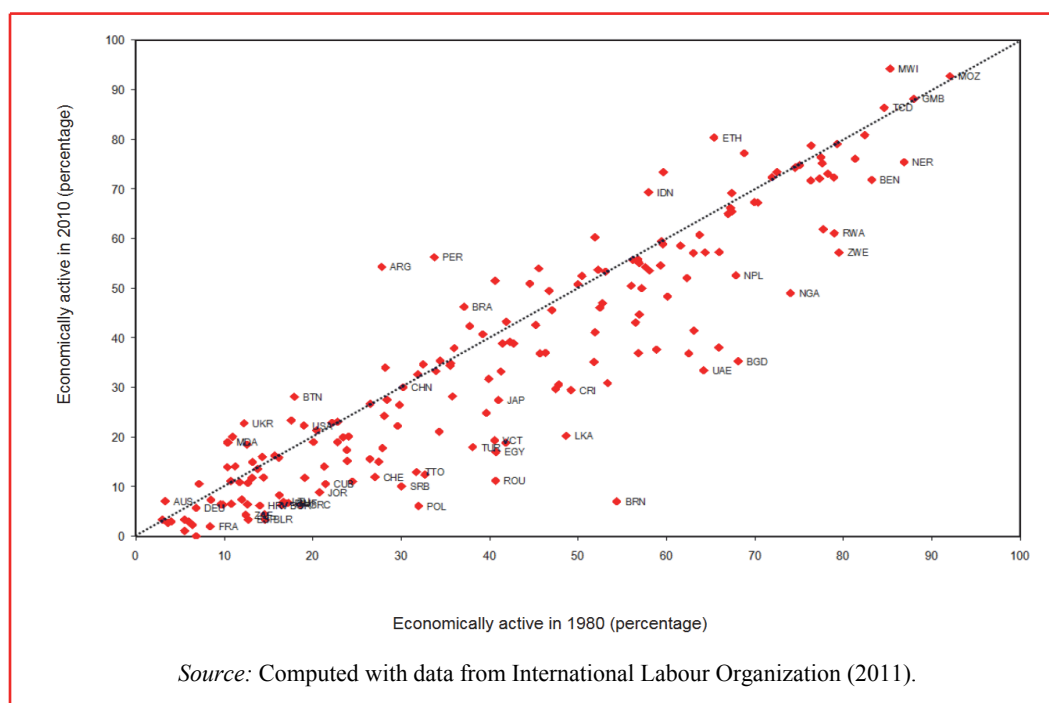
A more detailed examination of inter-country differences and trends in the labour force participation of older men (figure 4.9) shows that the majority of the countries of the world (about 70 per cent) experienced a decrease in male labour force participation between 1980 and 2010. This is apparent by the fact that a much larger number of countries are below the 45-degree diagonal line in figure 4.9, which plots the participation rates of older men in 1980 (horizontal axis), against the rates in 2010 (vertical axis).

A number of countries in Africa have some of the highest levels of labour force participation of older men in the world. For instance, in Chad, Gambia, Malawi and Mozambique, more than 80 per cent of older men were in the labour force in both 1980 and 2010. Moreover, in these and other countries such as Ethiopia, the labour force participation among older men increased between 1980 and 2010.

During this period, the labour force participation of older men in the majority of countries in Asia, either remained approximately the same (e.g., in China, Lao People’s Democratic Republic and Myanmar) or increased somewhat (e.g., in Cambodia, Indonesia and Kyrgyzstan). The levels

of participation, however, were quite diverse, ranging from 19 per cent in Kyrgyzstan and 30 per cent in China, 66 per cent in Myanmar and 69 per cent in Indonesia.

**Figure 4.9**  
Labour force participation of men aged 65 years or over, 1980 and 2010



In Europe, the labour force participation of older men dropped in the majority of countries between 1980 and 2010. The exceptions were Austria, Belgium, the Netherlands and the United Kingdom of Great Britain and Northern Ireland, where participation levels increased. In Latin America and the Caribbean, the labour force participation of older men increased from an average of 41 per cent in 1980 to an average of 45 per cent in 2010 and by a much larger margin in countries such as Argentina and Peru, where older male participation rates increased by more than 20 percentage points, and to a lesser extent, Brazil, where the increase was significant but not as large.

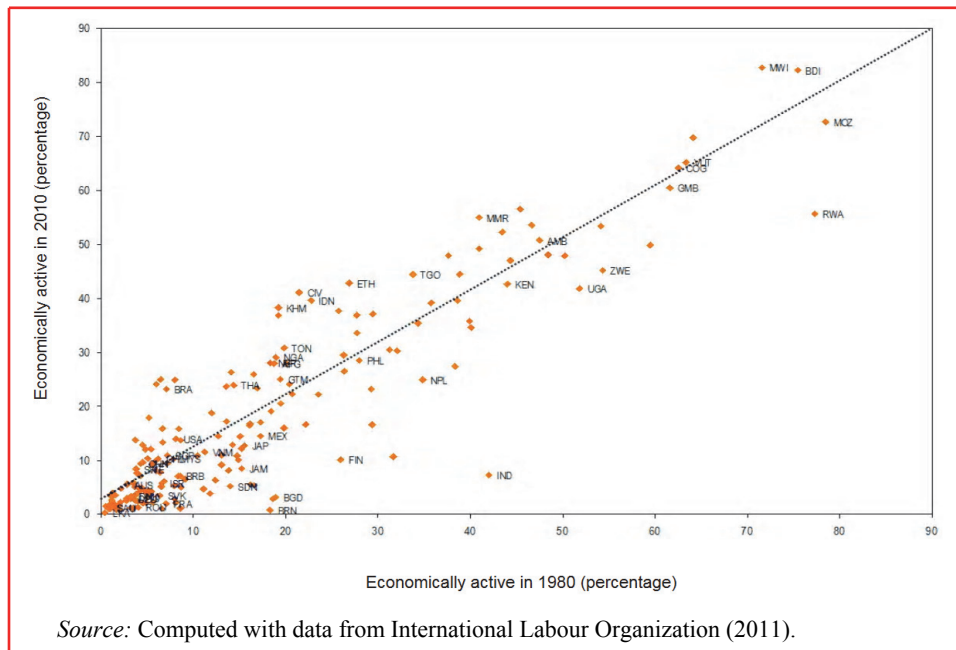
The labour force participation among older women increased in over half of the countries of the world—in 104 countries out of 190 countries (figure 4.10). In African, the labour force participation of older women increased between 1980 and 2010 in countries such as Malawi,<sup>22</sup> Niger, Nigeria and Senegal. In contrast, a large majority of older women do not work in Europe. The highest labour force participation in 2010 was observed in the countries of Eastern Europe (9 per cent, on average), while the lowest level was found in Western Europe (2 per cent on average). In many countries such as Belgium, Ireland, Greece and France, the proportion of older

<sup>22</sup> Malawi recorded the highest older female participation rate in the world in 2010, of 83 per cent.

women who are working decreased further between 1980 and 2010 and it increased moderately in a few countries such as Austria, the Netherlands, Portugal, Russian Federation and Sweden.

In Asia, the majority of countries experienced an increase in the labour force participation of older women between 1980 and 2010. Bangladesh, India, Israel and Japan were among the few countries where the participation rate of older women declined. In general, the participation rate of older women in the labour force was much lower than in Africa, and in some countries, the levels were as low as those in Europe. In Latin America and the Caribbean, the labour force participation of older women increased significantly in many countries; in Brazil, for instance, it went from 7 per cent in 1980 to 23 per cent in 2010.

**Figure 4.10**  
**Labour force participation of women aged 65 years or over: major areas, 1980 and 2010**



### C. STATUTORY RETIREMENT AGE

The statutory retirement age is defined as the minimum age at which people can qualify for full pension benefits. In most countries, qualifying for pension benefits requires a minimum period of contributions, commonly ranging from 30 to 40 years of employment and attaining a specified age. Another common requirement for pension benefits is total or substantial withdrawal from the labour force (United States Social Security Administration, 2011c, 2012a, 2012b, 2013).

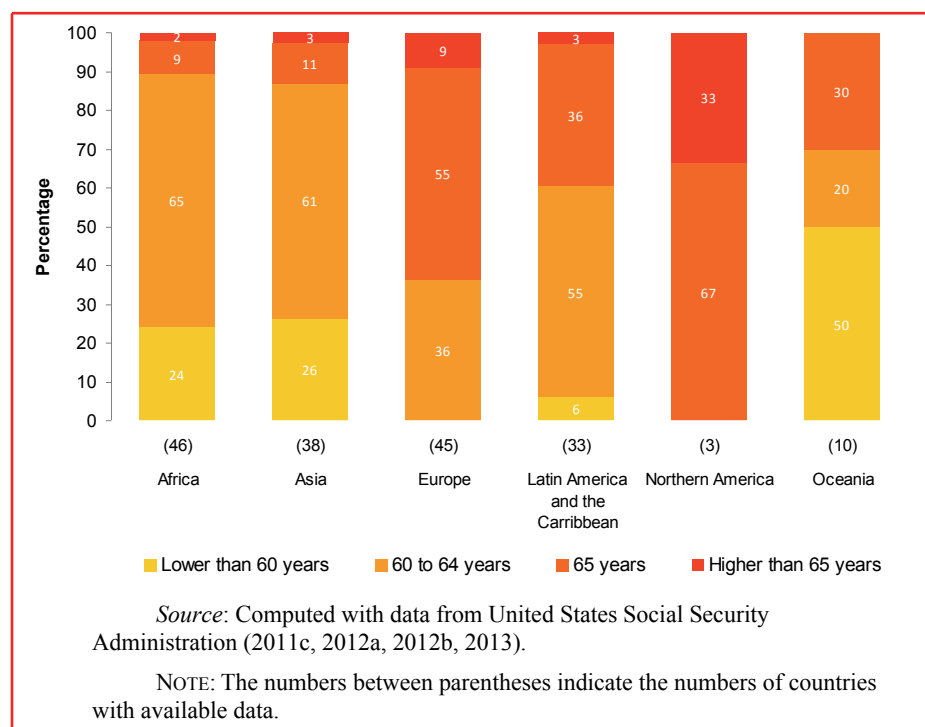
*The retirement age is often higher for men than for women and is generally higher in the more developed regions than in the less developed regions*

The retirement age for men is 65 years or higher in the majority of the developed countries of Europe and Northern America. By comparison, the retirement age for men is between 60 and 64 years in the majority of the developing countries of Africa, Asia and Latin America and the Caribbean.

While the retirement age for men is 65 years or higher in the majority of countries of Europe and Northern America, there are variations among the countries of Europe. As a result, Europe's average retirement age for men has fallen slightly below that of Northern America. The information available for 45 European countries in 2012 showd that the male retirement age is more than 65 years only in Iceland, Norway and Italy, it is exactly 65 years in 25 countries, and it is between 60 and 64 years in 17 countries. In contrast, the statutory retirement age for men in Bermuda, Canada and the United States of America is 65 years or more.

For women, the retirement age is highest in Northern America (65 years or higher), followed by Europe (most commonly, between 60 years and 64 years) (figure 4.12).

**Figure 4.11**  
Distribution of countries by statutory retirement age for men: major areas, 2013



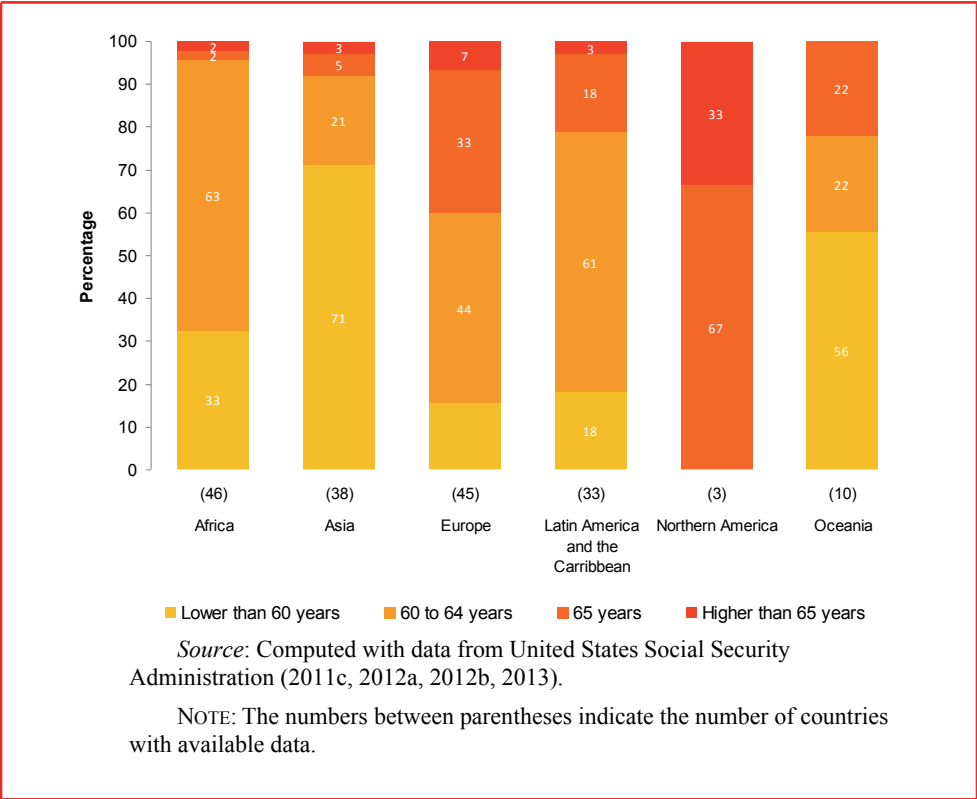
Within the less developed regions, Latin America and the Caribbean have higher retirement ages for men than Africa, Asia and Oceania. The retirement age for men is lowest in Oceania, where it is lower than 60 years in half of the 10 countries with data. In Latin America and the Caribbean, the retirement age for men is between 60 and 64 years in a majority (55 per cent) of

the 33 countries with available data. In the remaining countries, the retirement age is equal to or higher than 65 years, except in Bolivia and Haiti, where the retirement age is 58 years. In Africa and Asia, the retirement age for men is also between 60 and 64 years in a majority of the countries. However, about a quarter of the countries have the retirement age for men lower than 60 years (figure 4.11).

The oldest retirement age for men is found in Iceland (67 years), Israel (70 years), Lesotho (70 years), and Norway (67 years). The youngest retirement age is found in Kiribati, Kuwait, Nigeria, Solomon Islands and Swaziland (50 years).

Among developing countries, the lowest average female retirement ages are found in Asia, where almost two thirds of the countries have retirement age for women lower than 60 years (figure 4.12). The corresponding figure in Oceania is 56 per cent of the countries. Latin America and the Caribbean have the highest percentage of late retirement ages for women (82 per cent of the countries), followed by Africa, with 67 per cent of the countries with female retirement ages of 60 years or higher.

**Figure 4.12**  
**Distribution of countries by statutory retirement age for women: major areas, 2013**



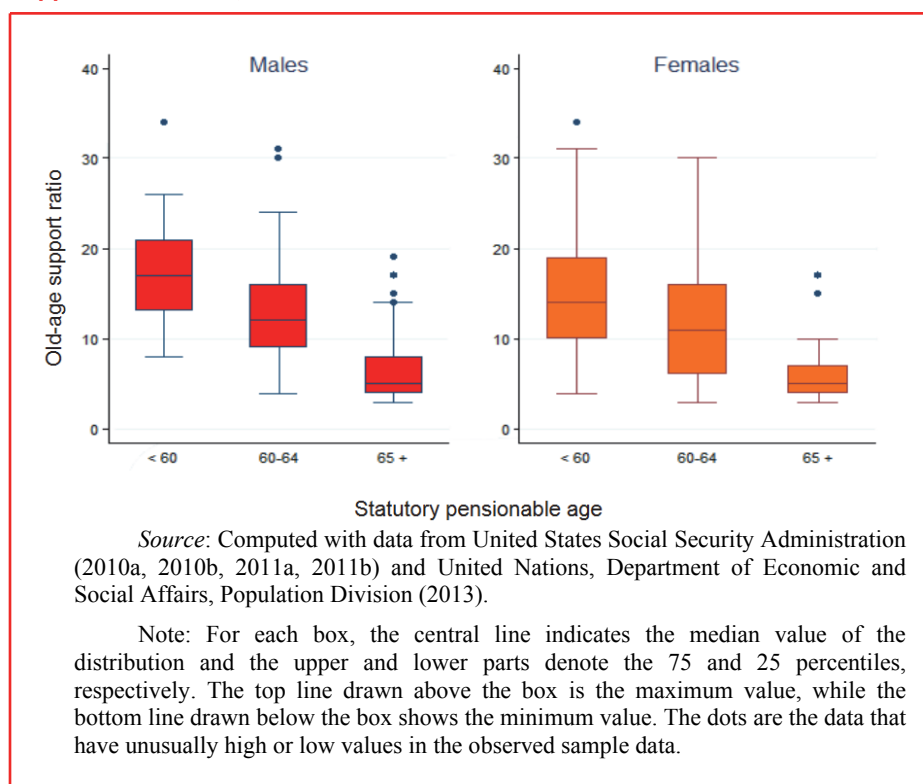
*As population age, countries begin to raise the statutory retirement age and to equalise retirement ages of men and women*

Most developed countries have “Pay-as-you-go” pension schemes, where (unfunded) publicly-provided pension benefits to older persons are paid out of taxes and social security contributions from current workers. These countries are facing rising fiscal burdens as the size of the working-age group is shrinking and the number and percentage of people reaching retirement age are increasing. Most countries of the Organisation for Economic Co-operation and Development (OECD) have raised and equalised the retirement ages of men and women to 65 years or higher since the mid-1990s. This trend is very likely to continue, as almost half of OECD countries plan to increase and equalise their statutory retirement ages over the coming four decades (OECD, 2011).

Some of the OECD countries that plan to increase retirement ages for both men and women include: Australia, the Czech Republic, Denmark, France, Greece, Hungary, Italy, the Republic of Korea, Turkey, United Kingdom of Great Britain and Northern Ireland and the United States of America. Two other countries (Austria and Slovakia) will increase the retirement age for women to equalise with that of men.

By 2050, the average retirement age in OECD countries is expected to reach nearly 65 years for both sexes: an increase of nearly 2.5 years for men and 4 years for women when compared to the retirement ages in 2010 (OECD, 2011).

**Figure 4.13**  
**Distribution of countries by statutory retirement age of men and women and old-age support ratio: world, 2010**





Unlike most of the OECD countries, the majority of developing countries continue to allow men to receive pension benefits at ages younger than 65 years and women at even younger ages.

A high old-age support ratio, that is, a high number of persons in the main working ages (aged 15 to 64 years) to support each older person (aged 65 years or over) in the population, affords more easily the possibility to retire at a relatively young age. Figure 4.13 shows that practically all countries with male statutory retirement ages lower than 60 years have old-age support ratios of 10 or more working age people for each older person. By contrast, most countries with old-age support ratios lower than 10 have statutory retirement ages of 65 years or over. This association between old-age support ratio and retirement age is also observed for women, although it is less pronounced than for men (figure 4.13). As populations continue to age throughout the world, Governments will face increasing pressure to raise statutory retirement ages in the decades to come.



## V. Intergenerational transfers and well-being in old age

### A. Economic Support systems

In most modern societies, older persons consume more than they produce and therefore resort to other sources of support, such as income from their assets, savings and transfers from their family and the Government (Mason and others, 2009; United Nations, 2013). How older people finance their consumption differs widely across countries and depends on cultural, institutional and economic factors.<sup>23</sup>

To analyse the different types of economic support systems, this section employs estimates from National Transfer Accounts (NTA),<sup>24</sup> which encompass four sources of finance of consumption: labour income, net public transfers, net private transfers, and asset-based reallocations. Labour income includes employment earnings and self-employment income.<sup>25</sup> Public transfers are cash and in-kind transfers received from government such as health care, public safety and national defence and cash transfers such as pensions and other cash allowances for older people, net of taxes and social contributions paid to the government. Private transfers include both inter-household transfers and intra-household transfers. Again, these are net values of transfers received minus transfers given. Asset-based reallocations are basically net asset income and dis-savings.<sup>26</sup>

#### *Many older persons in developing countries still need to work to finance their consumption*

One way to finance consumption in old age is to work and hence receive labour earnings. The extent to which labour income contributes to the financing older persons' consumption depends on the demographic characteristics, labour market conditions and level of economic development of each country. Key direct factors include labour force participation rate, labour productivity, statutory retirement age and the coverage and adequacy of pension systems.

Figure 5.1 shows the proportion of consumption of the older population that is financed by labour income. This and all subsequent figures in this section show box plots of the distribution of the proportion of consumption financed by various sources for two groups of countries (developed and developing countries) and for three age groups (55 to 64 years, 65 to 69 years and 70 years or over). Developed countries in this data sample include Austria, Germany, Hungary, Japan, Slovenia, Sweden and the United States of America, while developing countries are Brazil, China, Costa Rica, India, Indonesia, Mexico, South Korea, the Philippines, and Thailand. For each box, the central line indicates the median value of the distribution and the

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<sup>23</sup> A comprehensive international review is available in Lee and Mason, eds. (2011).

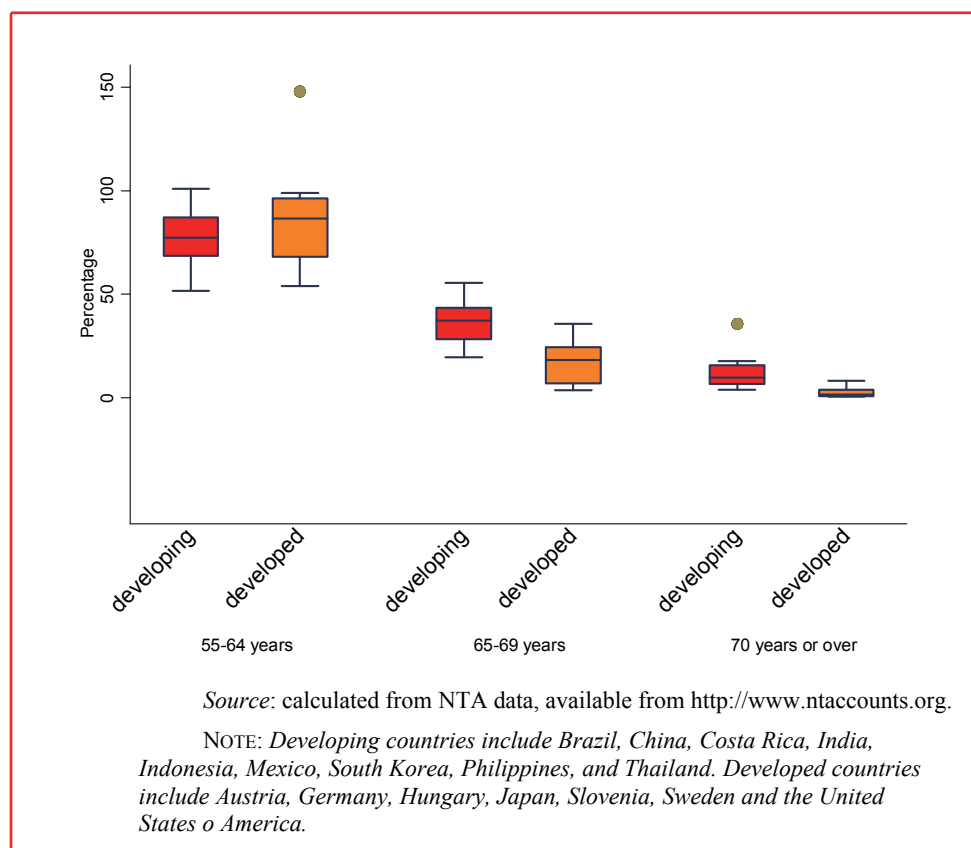
<sup>24</sup> NTAs measure economic flows across age groups at the aggregate level in a manner consistent with National Income Accounts (see United Nations (2013), and the NTA project website <http://www.ntaccounts.org>). At the time this report was written, the project had 41 participating countries and among them, 20 countries had complete sets of estimates available online.

<sup>25</sup> Employment earnings include wages and salaries payable in cash or in kind and the value of the social contributions payable by employers.

<sup>26</sup> Asset-based reallocations entail inter-age flows through inter-temporal exchange of private and public property and capital. Examples are income derived and debt incurred from housing, land, consumer debt, student loan programmes, and sovereign wealth funds.

upper and lower borders of the rectangular boxes denote the 75th and 25th percentiles, respectively. The top line drawn above the box is the maximum value, while the bottom line drawn below the box shows the minimum value. The dots plotted are outliers or values that are unusually high or low from the data sample.

**Figure 5.1**  
**Consumption of older population financed by labour income**



Persons aged 55 to 64 years are mostly active in the labour market and therefore labour income is the most important source of finance in both development groups. In the more developed countries, labour income supports approximately 90 to 100 per cent of their consumption. The percentage is high because most people retire at or after the age of 65 years. In the less developed regions, there is wider variation in the contribution of labour income, from 75 to 100 per cent of old-age consumption. Many developing countries in Asia and Africa have early statutory retirement ages, of less than 65 years (see chapter IV), a factor compounded by relatively low per capita labour earnings at older ages. However, many older persons in developing countries have little choice but to continue to work into old age to finance at least part of their consumption, in the absence of comprehensive social security programmes, for example, in Indonesia, the Philippines and Nigeria. In sharp contrast, Brazil has generous public transfers directed to older persons, which creates incentives for individuals to withdraw early from the labour market, starting from as early as age 50 years (Turra, Queiroz and Neto, 2011). This is reflected in a labour income contribution of only half of the consumption of people aged 55 to 64 in Brazil, as compared to the median of 85 per cent in developing countries.

By the time people reach 65 years of age, the reliance on labour income declines considerably, especially in the more developed regions and in some Latin American countries that have extensive social security coverage. This decline is steeper in the more developed regions than in developing countries and thus a distinct gap is observed between these groups. In developed countries such as Austria, Germany and Finland, for example, people between the ages of 65 and 69 years finance less than 10 per cent of their consumption with labour income, as compared to 45 per cent or more in the majority of developing countries.

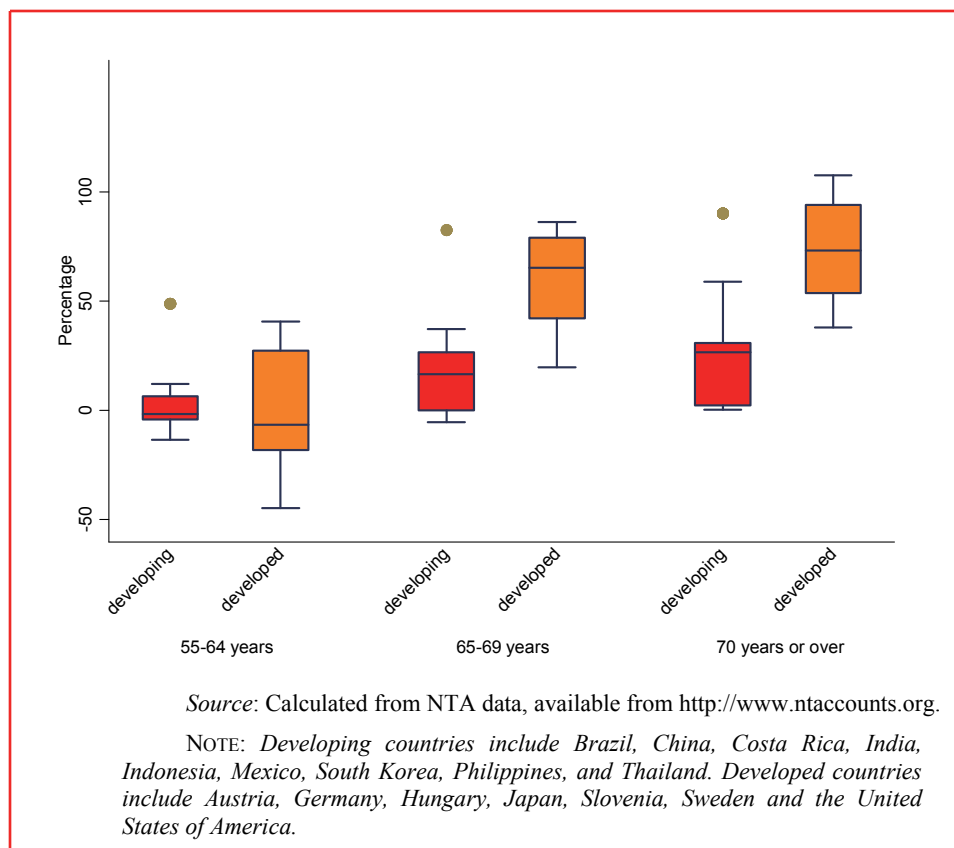
Past the age of 70, the gap between developing and developed countries still exists but it becomes much smaller. Labour income finances less than 25 per cent of consumption for all countries. At this stage, older persons face issues of accessibility to labour market, employability and declining labour productivity and health. Income generated from work can be significant for some older persons, but on average and for older people as a whole, it does not finance a large share of old age consumption.

*Public transfers are a major source of old-age support in developed countries and in some developing countries*

Another means of financing old-age consumption is through public transfers such as pensions and health care, which are provided through formal government programmes. In developed countries, these transfers, net of taxes paid, are the major source of income security after retirement as shown in figure 5.2. Indeed, in about half of developed countries, net public transfers cover more than 50 per cent of older persons' consumption. This percentage is even higher in some countries; for example, public schemes in Austria, Finland, Germany, Hungary, and Slovenia cover as much as 70 to 90 per cent of older persons' consumption. Sweden has comprehensive and universal social insurance systems that cover almost 100 per cent of consumption. Other developed countries, like the United States of America and Japan have less expansive social programmes and older persons in such countries fund approximately 30 to 50 per cent of their consumption with public transfers.

The role of public transfers varies greatly among developing countries, but they are on average less important than in the more developed regions. Public programmes for old-age security are still incipient in countries like India, Thailand, Indonesia and the Philippines, where the data shows that net public transfers to older persons are very small or close to zero. In contrast, public transfers have become very important for old-age income security in some countries in Latin America and Asia. Countries such as Chile, Costa Rica and Uruguay have public pension schemes and health care that finance approximately half of older persons' consumption. An extreme case is that of Brazil, where the universal non-contributory old-age pension and other public transfers provide on average 90 to 100 per cent of older people's consumption, net of taxes. In Asia, the Republic of Korea has a less generous but also universal social security programme, which supports on average one third of an older person's consumption and the same is true of the National Health Insurance, Old-Age Allowance and Labour Insurance of Taiwan Province of China.

**Figure 5.2**  
**Consumption of older population financed by net public transfers**



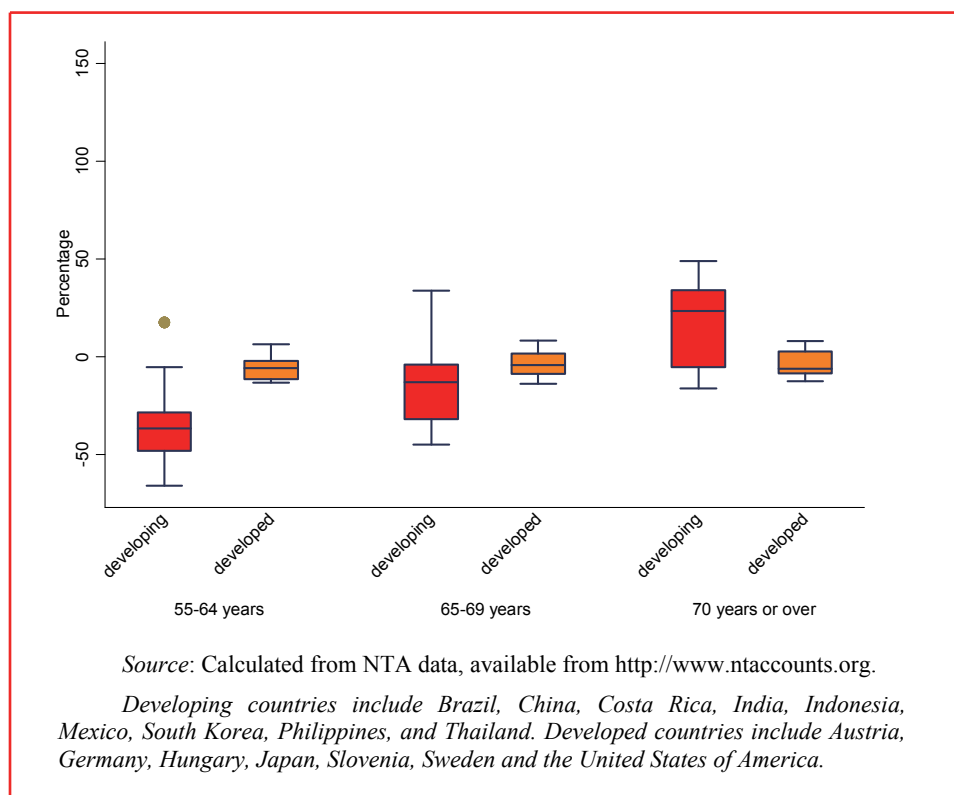
***In most countries, older persons are net givers of familial transfers***

Another way of supporting old age consumption is through private transfers from family members that may live either in the same or in a separate household. Familial support in old age is especially important where other formal mechanisms such as social protection systems and financial markets are weak or non-existing. In this context, older persons tend to rely much more on private transfers and more often live with their adult children than in the more developed country settings. This source of support can be unreliable since the obligations are often not formalized and the value of the transfers provided can vary as family members are subject to market shocks and instability, including in unemployment and wages.

Contrary to what is sometimes assumed, however, the evidence indicates that older persons on average, tend to be net givers of private transfers, that is, they give more than they receive from their family and this holds true in most developed and developing countries as illustrated in figure 5.3. This outcome is not surprising for the more developed countries because older persons are insured by comprehensive social security systems and their higher income and more developed financial markets allow them to accumulate lifecycle savings and more substantial assets. Older persons in the United States of America, Austria, Germany, Hungary, Spain and Sweden, are net private transfer givers and continue to make transfers to their adult children and grandchildren well into their old age. In some countries such as Japan and Slovenia, older

persons switch from net givers to net receivers of private transfers after they turn 70 years. But this situation may not last much longer, for example, in Japan—a society with a tradition of caring for old parents—where private transfers seem to be on the decline, as these transfers are crowded out by increasing public pension benefits and by asset income and labour income generated by older generations during the considerable economic growth between the 1980s and 2000s (Ogawa, Matsukura and Chawla, 2011).

**Figure 5.3**  
Consumption of older population financed by net familial transfers



Older persons are also net private transfer givers in most developing countries. In economies dominated by the informal sector such as Indonesia, the Philippines and Mexico, many older persons own farms and other forms of property and they often continue to work until very old ages and this enables them to make transfers to younger family members. Also, as noted in chapter 3, many older persons continue to be the head of households in extended living arrangements and thus, remittances received by them are redistributed to other younger family members (Lee and Others, 2011). In Latin American countries with generous public transfers favouring older persons such as Brazil and Uruguay, older people are relatively well off and tend to make substantial transfers to younger family members. A Brazilian aged 65 or over, on average, receives public transfers covering 90 per cent of their consumption and makes net private transfers as large as one third of their consumption to their family (Turra, Queiroz and Neto, 2011). Older persons in Uruguay have a similar pattern: they receive public transfers

supporting half of their consumption and give private transfers that amount to 10 per cent of their consumption (Bucheli and Gonzalez, 2011).

Private transfers nevertheless, are still an important source of old-age income in a few developing countries in Asia. Cultural values of filial obligation and inter-generational co-residence are commonly observed, although the culture and practices are changing. Net private transfers are significant and positive in countries such as China, Thailand, Republic of Korea and Singapore. Older persons aged 65 years and over in Thailand and Taiwan Province of China receive on average a third of their consumption from private transfers (Chawla, 2008; Tung and Lai, 2013) and the figure for the Republic of Korea is about 13 per cent. As these transfers seem to be declining in some parts of Asia, countries such as China and Singapore have enacted legislation mandating adult children to support their elderly parents.

### *Assets are a major source of old-age support in countries with limited public transfer systems*

Asset-based reallocations encompass net asset income and dis-savings. Over their life-cycle, people accumulate assets such as property, pension funds and savings and rely partly on income from these physical and financial assets for their retirement. Examples of net asset income are interest, profits, dividends and imputed rent.

As with other sources of sustenance in old age, the extent to which older persons rely on asset-based reallocations varies widely across countries as shown in figure 5.4. At one extreme, older persons in Mexico and Indonesia fund two thirds of their consumption through assets, whereas this proportion is just about 1 per cent in Sweden and Hungary.

A closer examination shows that reliance on asset-based reallocations to support old-age consumption has a regional pattern. The range is from a third to two thirds of consumption in Asia and Latin America, but it is narrower, about 10 to 20 per cent in Europe with the exception of Germany and Spain.<sup>27</sup> This regional pattern is highly correlated with the aforementioned transfer systems. Mason and others (2011) found that the reliance on asset income during old age is inversely related to the level of public transfers. Older persons receiving substantial public transfers such as in Europe tend to rely less on asset income, while those in regions with less generous or extended public transfer systems such as the United States of America, Japan, Mexico and Asian countries tend to depend more heavily on asset income.

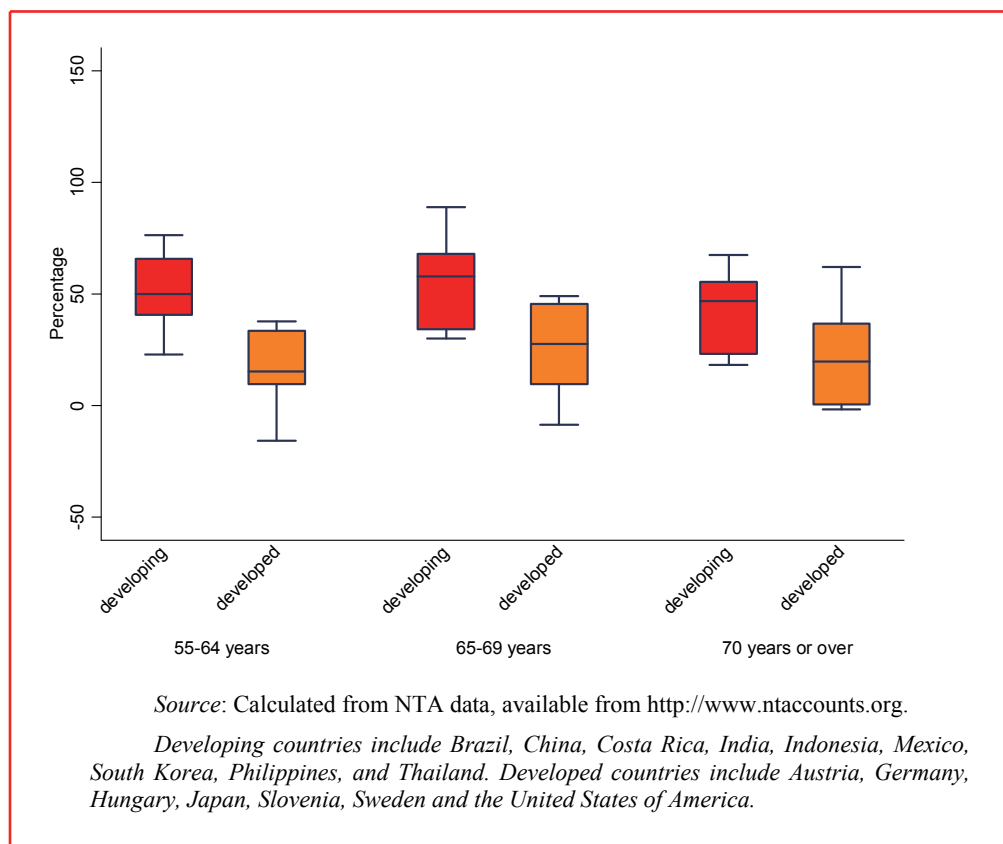
Economic security for older persons is an issue in every country. In most developing countries, older persons need to work beyond the statutory retirement age due to the lack of comprehensive social security programmes. To fill the gap between what they need and what they earn, older persons rely heavily on assets accumulated earlier in life and in some countries, also on their families. In the majority of these countries, public social programmes play a minor role. Conversely, older persons in developed countries are less likely to work into old age. They rely heavily on public programmes, on asset income and dis-saving—net familial support here is minimal as older people are significant net givers of private transfers.

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<sup>27</sup> For Germany it is one third while for Spain it is 50 per cent.



**Figure 5.4**  
**Consumption of older population financed by net asset-based reallocations**



Social protection for older persons is and will continue to be a fundamental pillar of development in all types of societies. As populations continue to age, however, the design of public programmes needs to be adapted to avoid overburdening younger generations, sacrificing economic growth or becoming financially unsustainable.

## **B. AGEING AND POVERTY**

### *Measures of poverty vary across regions*

Poverty can be broadly defined as deprivation according to some dimension of well-being (World Bank, 2005). Three components are needed to compute a measure of poverty: 1) the welfare measure; 2) the poverty line or the threshold below which a given household or individual will be classified as poor; and 3) the specific indicator of poverty.

Most measures of welfare (first component) are based on data on income or consumption of individuals, or more commonly, of the average household income or consumption. To define the poverty line (second component), which separates the poor from the non-poor, an absolute or relative level of income or consumption is often determined as the relevant threshold. An *absolute* poverty line refers to a set standard of what households should be able to have in order to meet their basic (mostly food) needs. The international poverty lines used by the World Bank

(at \$1.25 a day and \$2.50 a day in terms of purchasing power parity or PPP) are examples. A *relative* poverty line is defined in relation to the overall distribution of income or consumption in a country. For example, the main poverty line used in the Organization for Economic Co-operation and Development (OECD) and the European Union is a relative poverty measure based on “economic distance,” a level of income usually set at 50 or 60 per cent of the median household income.

Finally, regarding the third component of the poverty concept, the most commonly used poverty indicator is the poverty rate,<sup>28</sup> which refers to the proportion of the population whose per capita income or consumption is below the poverty line.

### *Poverty is slightly higher for older persons than the total population in Sub-Saharan Africa*

In much of Africa, older persons traditionally rely on their extended family, especially their own children, for their welfare. However, as a result of the HIV/AIDS pandemic, conflicts, shocks such as recurrent droughts and rapid urbanization, many older persons in sub-Saharan Africa have become primary sources of support for their families and/or caregivers for grandchildren because prime-age adults have fallen ill, died or migrated.

Poverty is still prevalent in sub-Saharan Africa and is slightly higher for older persons than the total population (Kakwani and Subbarao, 2005). Kakwani and Subbarao (2005) examined household survey data from 15 countries in sub-Saharan Africa against the respective national poverty lines.<sup>29</sup> The study confirmed that poverty rates are high in sub-Saharan Africa for the whole population in general and for the older population in particular. National poverty rates varied from 36.7 per cent to 68.9 per cent in the general population and between 43.7 per cent and 79.4 per cent among older persons (table 5.1). In 11 of the 15 countries studied, the incidence of poverty was higher for the older population than for the population as a whole. The exceptions were Burundi, Madagascar, Mozambique and Nigeria.

For most countries, the differences between the older population and the whole population were statistically significant, especially in Malawi and Zambia where the prevalence of HIV/AIDS was very high. Overall, however, the difference in the incidence of poverty of the older population and the total population is not too wide in absolute terms in sub-Saharan Africa. The ratio of older persons’ poverty incidence to that of the total population was just above 1 in the majority of the 15 countries (figure 5.5) and between 1.1 and 1.3 in only four countries: Côte d’Ivoire, Guinea, Malawi and Zambia.

The study also found that in 9 of the 15 countries, the incidence of poverty was higher among older persons than among children aged 0-14 years (table 5.1) and in 10 of the 15 countries, the incidence of poverty in households where older persons lived with only children (usually grandchildren) was higher than the average poverty incidence for the whole population. Accordingly, the findings of the study confirmed older persons’ disadvantage especially when they have become either principal breadwinners for the family or caregivers for children.

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<sup>28</sup> Also referred to as “incidence of poverty”, or the poverty headcount ratio.

<sup>29</sup> The sample countries are broadly representative of sub-Saharan Africa as they are from Eastern and Western Africa, Anglophone, Francophone and Lusophone Africa, and with both high and low incidence of HIV/AIDS.

**TABLE 5.1. POVERTY HEADCOUNT RATIO (PERCENTAGE OF POPULATION LIVING IN HOUSEHOLDS WITH AN INCOME BELOW THE NATIONAL POVERTY LINE) FOR THE WHOLE POPULATION, THE OLDER POPULATION AND CHILDREN, SELECTED COUNTRIES IN SUB-SAHARAN AFRICA**

Country	Year	Headcount ratio (percentage)		
		All persons	Older persons*	Children**
Burkina Faso	1998	52.0	56.3	54.5
Burundi	1998	61.2	59.2	62.5
Cameroon	1996	60.9	62.4	63.6
Côte d'Ivoire	1998	36.7	46.7	39.1
Ethiopia	2000	40.9	43.7	41.6
Gambia	1998	62.2	68.2	65.5
Ghana	1998	43.6	45.5	47.0
Guinea	1994	38.1	44.0	40.5
Kenya	1997	49.7	53.8	53.5
Madagascar	2001	62.0	55.3	66.4
Malawi	1997	63.9	71.6	65.4
Mozambique	1996	68.9	65.8	71.4
Nigeria	1996	63.4	59.5	66.6
Uganda	1999	48.2	52.2	50.1
Zambia	1998	66.7	79.4	67.8

Source: Kakwani, Nanak and Kalanidhi Subbarao (2005). Ageing and poverty in Africa and the role of social pensions. Working Paper No. 8, Table 3. United Nations Development Programme: International Poverty Centre.

NOTE: The poverty threshold used was the national poverty line.

\*Aged 60 years or over.

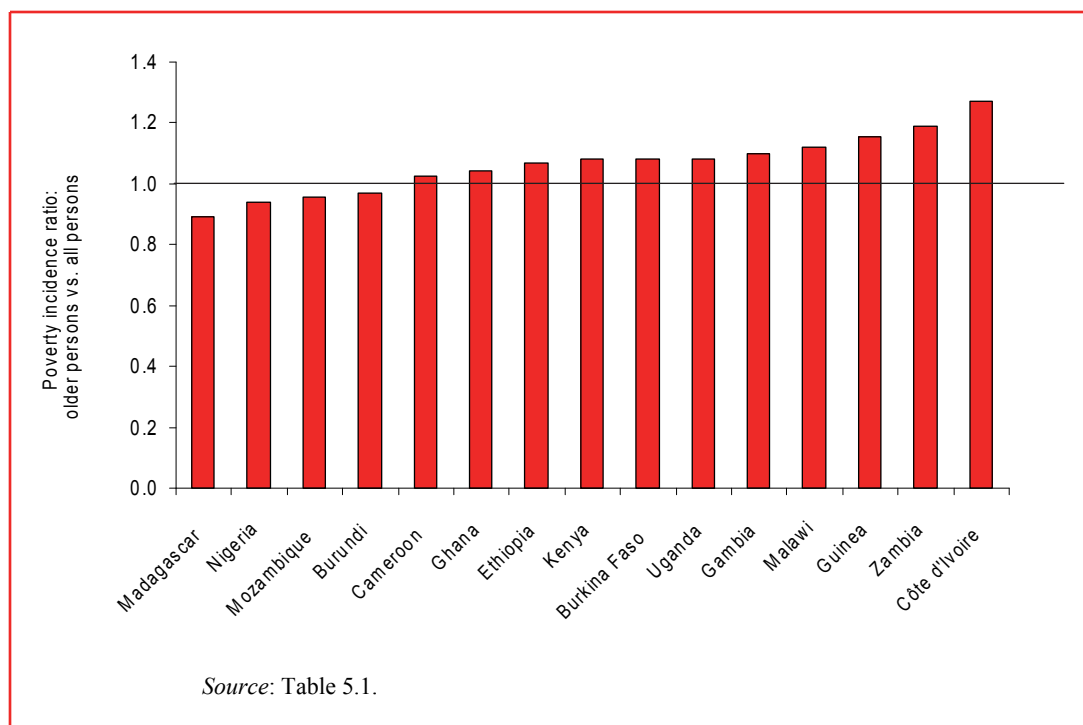
\*\*Aged 0 to 14 years.

In assessing the role of social pensions in the economic welfare of older persons, Kakwani and Subbarao (2005) conclude that in sub-Saharan Africa, even in the 11 countries where the older population is at high risk of poverty, universal social pensions, that is, for all older persons, would be fiscally costly and probably unsustainable for most countries. Their study found that a targeted approach, choosing age 65 years as the cut off point for eligibility, restricting pension eligibility to the poor among the older persons and limiting the benefit level to about a third of the poverty threshold, would yield better results in terms of poverty reduction for older and younger people, and would be more fiscally sustainable. However, the United Nations Human Right Council's Special Rapporteur on Extreme Poverty and her assistant have recommended universal non-contributory pensions, which are more in line with human rights obligations as they comply with principles of universality and non-discrimination (Sepúlveda and Nyst, 2012). In addition, a universal approach in providing old-age benefits reduces chances for corruption and manipulation in the selection of beneficiaries, a process that often excludes the poorest.

### *Old-age poverty varies widely in Latin America*

Pension schemes are much more common in Latin America, but many have incomplete population coverage (United States Social Security Administration, 2011; Dethier, Pestieau and Ali, 2010). Half of the countries in Latin America have coverage rates below 30 per cent among the elderly. Five countries—Argentina, Brazil, Chile, Costa Rica and Uruguay—have pension programmes that have a social assistance character that targets the poor and the disabled who have no contributory capacity. These countries have the highest coverage rates among the older population (above 75 per cent).

**Figure 5.5**  
**Ratio of the poverty rate of older persons to the poverty rate of the total population,**  
**Sub-Saharan Africa, late 1990s-early 2000s**



To assess the poverty levels of the older population in Latin America, the aforementioned authors used microdata from the Socio-economic database for Latin America and the Caribbean (SEDLAC) for 18 countries with the requisite information. In all the countries, the household surveys were nationally representative, except in Argentina, where the surveys covered the urban population only.<sup>30</sup> The authors counted as poor those persons who lived in households with an equivalised income (using the OECD-modified equivalence scale) below the poverty threshold, which was set at 50 per cent of the national median equivalised income of households.

The study found that Argentina, Brazil, Chile and Uruguay, and to a lesser extent, Nicaragua, had low poverty headcount ratios (or “poverty rates” for short) among the older population that were comparable with those of most of the OECD countries (below 11 per cent). In these four countries,<sup>31</sup> the poverty rates of older persons were also clearly lower than those of the population as a whole (table 5.2). By contrast, older persons were much poorer than the general population in Bolivia, Colombia, Costa Rica, Ecuador and Mexico (figure 5.6). Although the social pension scheme of Costa Rica had extensive population coverage, the average benefit was the lowest of the countries in this group (Dethier, Pestieau and Ali, 2010). The remaining countries had limited pension systems and their old-age poverty rates were very similar to those of the total population.

<sup>30</sup> This restriction is not of great concern because more than 85 per cent of the total population of Argentina lives in urban areas.

<sup>31</sup> These four countries belong to the group of five Latin American countries with a mature and generous system of pension benefits.

**TABLE 5.2. POVERTY HEADCOUNT RATIO (PERCENTAGE OF POPULATION LIVING IN HOUSEHOLDS WITH AN EQUIVALISED INCOME BELOW HALF THE NATIONAL MEDIAN EQUIVALISED INCOME) FOR THE WHOLE POPULATION AND THE OLDER POPULATION, SELECTED COUNTRIES IN LATIN AMERICA, LATE 2000S**

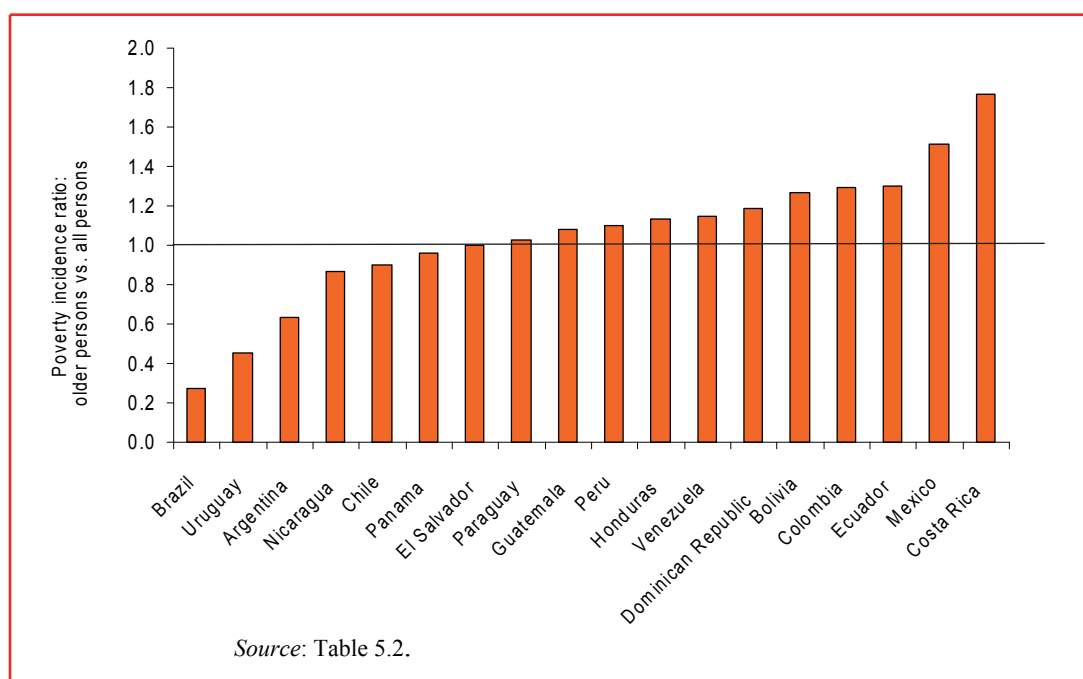
Country	Headcount ratio (percentage)	
	All persons	Older persons*
Argentina	21.2	13.4
Bolivia	22.7	28.7
Brazil	21.8	6.0
Chile	16.4	14.8
Colombia	23.8	30.8
Costa Rica	18.2	32.2
Dominican Republic	18.3	21.7
Ecuador	19.4	25.2
El Salvador	17.2	17.2
Guatemala	22.1	23.9
Honduras	27.6	31.3
Mexico	18.8	28.4
Nicaragua	19.7	17.1
Panama	23.5	22.6
Paraguay	22.8	23.4
Peru	21.2	23.3
Uruguay	17.0	7.7
Venezuela	18.2	20.9

Source: Dethier, Jean-Jacques, Pierre Pestieau and Rabia Ali (2010). Universal minimum old age pensions: Impact on poverty and fiscal cost in 18 Latin American countries. The World Bank: Policy Research Working Paper No. 5292, Figure 1a.

NOTE: The poverty threshold used was 50 per cent of the national median equivalised income.

\*Aged 60 years or over.

**Figure 5.6**  
**Ratio of the poverty rate of older persons to the poverty rate of the general population, Latin America, late 2000s**



In summary, old-age poverty is still prevalent in a large number of Latin American countries despite the fact that all the countries have some type of pension programme. The aforementioned study suggests that universal minimum social pensions would be effective in reducing poverty among the older population. Although the cost of a universal pension can be very significant, the authors argue that the benefits justify the extra investment. Specifically, the cost for a benefit of \$2.50 a day for all older people aged 60 years or over ranges between 0.5 per cent and 2.7 per cent of GDP, the cost being higher for poorer countries, where \$2.50 represents a larger proportion of average income.

### *Older persons in most OECD countries face high relative poverty*

One of the most substantial changes in income inequality and poverty over the past two decades in OECD countries has been the shift in poverty rates between age groups (OECD, 2008). The risk of poverty among older persons has fallen, while poverty rates among young adults and families with children have risen. However, because the initial old-age poverty rates were very high, persons aged 75 years or over remain the group most likely to be poor. People aged 66 to 75 years in contrast, are now no more likely to be poor than the population as a whole.

The international comparisons across OECD countries define poverty as those persons who live in households where equivalised disposable income is below 50 per cent of the national median equivalised income. Table 5.3 shows the variations in the poverty headcount ratios for the whole population and the older population (persons aged 65 years or over) using the aforementioned definition across 34 OECD countries. On average, older persons show higher poverty incidence (15.1 per cent) than the total population (11.1 per cent). Also, the incidence of poverty among older persons is higher in the developing countries of OECD (26.2 per cent) than in the developed countries of OECD (13.2 per cent).

Three categories of countries can be distinguished. The first category consists of 13 developed countries with old-age poverty rates lower than the OECD overall average (below 10 per cent) among older persons. These countries include The Netherlands (1.7 per cent), The Czech Republic (3.6 per cent), Canada (4.9 per cent), France (5.3 per cent), Poland (7.7 per cent), Norway (8.0 per cent) and Italy (8.9 per cent). In the majority of these countries, the poverty rate for older people is lower than or the same as the poverty rate for the whole population (figure 5.7). For some countries—mainly the Nordic and Western European countries—the situation is a reflection of a mature, generous and redistributive system of pension benefits.<sup>32</sup> Full-career workers are covered by earnings-related public pensions and supplementary pensions from mandatory occupational schemes, while low-income workers and older people are eligible for basic or minimum pensions (OECD, 2011).

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<sup>32</sup> This includes, for example, the Netherlands provides a strong social safety net in the form of a generous flat-rate public basic pension (29 per cent of average earnings on the OECD measure), which is paid to all persons aged 65 years or over, subject only to a residency test. Similarly, France provides a rather generous targeted (subject to a means test) minimum income to older persons aged 65 years or over via an old-age assistance programme, the “*minimum vieillesse*”.

**TABLE 5.3. POVERTY HEADCOUNT RATIO (PERCENTAGE OF POPULATION LIVING IN HOUSEHOLDS WITH AN EQUIVALISED INCOME BELOW HALF THE NATIONAL MEDIAN EQUIVALISED INCOME) FOR THE WHOLE POPULATION AND THE OLDER POPULATION, OECD COUNTRIES**

Country	Year	Headcount ratio (percentage)	
		All persons	Older persons*
Australia	2008	14.6	39.2
Austria	2007	7.2	9.9
Belgium	2007	9.1	13.5
Canada	2007	11.4	4.9
Czech Republic	2007	5.4	3.6
Denmark	2007	6.1	12.3
Estonia	2007	13.9	29.5
Finland	2007	7.9	13.0
France	2008	7.2	5.3
Germany	2008	8.9	10.3
Greece	2004	12.6	22.7
Hungary	2007	6.4	4.7
Iceland	2007	6.5	6.7
Ireland	2007	9.8	13.4
Italy	2008	11.4	8.9
Japan	2006	15.7	21.7
Luxembourg	2007	7.2	2.7
Netherlands	2008	7.2	1.7
New Zealand	2008	11.0	23.5
Norway	2008	7.8	8.0
Poland	2007	10.1	7.7
Portugal	2007	13.6	15.2
Slovakia	2007	6.7	7.2
Slovenia	2007	7.8	15.8
Spain	2007	13.7	20.6
Sweden	2008	8.4	9.9
Switzerland	2004	8.7	17.6
United Kingdom	2007	11.3	12.2
United States	2008	17.3	22.2
Chile	2006	18.9	22.8
Israel	2008	19.9	20.4
Mexico	2008	21.0	29.0
Republic of Korea	2008	15.0	45.1
Turkey	2007	17.0	13.7
Average in 29 developed countries		9.8	13.2
Average in 5 developing countries		18.4	26.2
Average in 34 OECD countries		11.1	15.1

Source: Provisional data from the OECD Income Distribution and Poverty Database. Available from [www.oecd.org/els/social/inequality](http://www.oecd.org/els/social/inequality). (Accessed in September 2011).

NOTE: The poverty threshold used was 50 per cent of the national median equivalised income.

\*Aged 60 years or over.

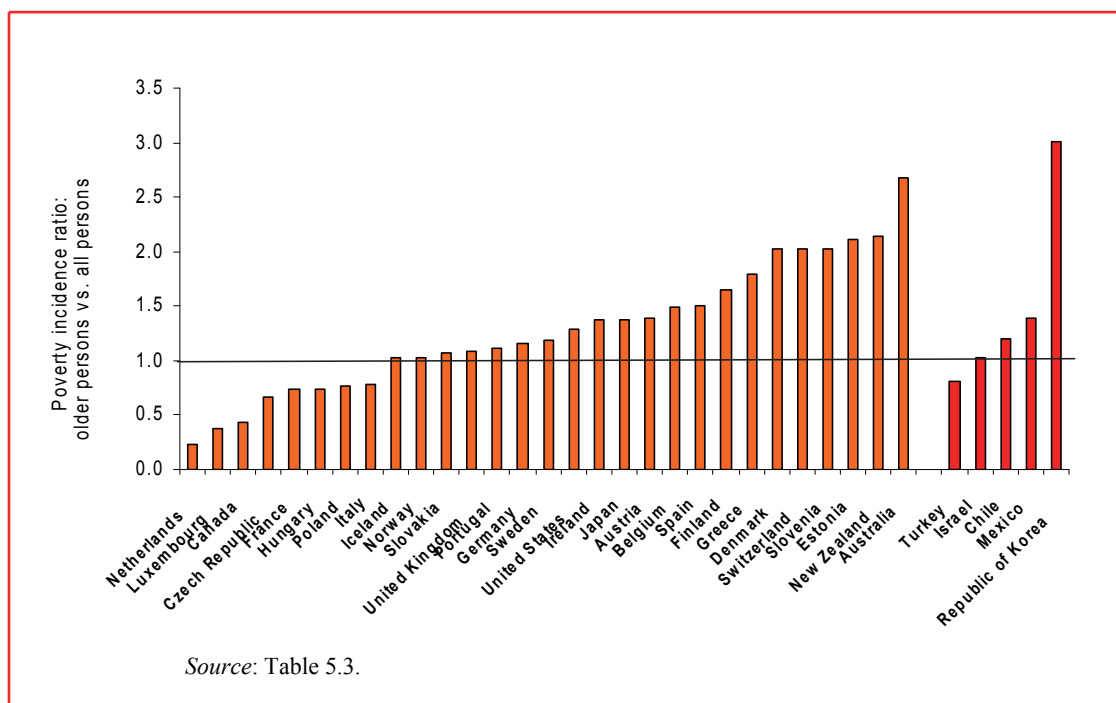
For the Eastern European countries within this first group, other factors underlie the relatively low poverty among older persons. For example, pensions in the Czech Republic, Hungary, Poland and Slovakia are not high, but because incomes are generally low in these countries and because of large redistributive elements inherent in the guaranteed minimum pensions in some of these countries, there is less income inequality between the older population and its younger counterparts (Zaidi, 2010).

The second category consists of five developed countries and one developing country that have poverty rates close to the OECD overall average (between 10 per cent and 14 per cent)

among older persons. These countries are: Germany (10.3 per cent), the United Kingdom of Great Britain and Northern Ireland (12.2), Denmark (12.3), Finland (13.0), Belgium (13.5) and Turkey (13.7).

The third and last category consists of 10 developed countries and 4 developing countries with poverty rates higher than the OECD overall average (over 14 per cent) among older persons. These countries are, among others, Portugal (15.2 per cent); Switzerland (17.6 per cent); Israel (20.4 per cent); Spain (20.6 per cent); Japan (21.7 per cent); United States of America (22.2 per cent); Chile (22.8 per cent); New Zealand (23.5 per cent); Australia (39.2 per cent); and the Republic of Korea (45.1 per cent). In the majority of these countries, the ratios of the poverty rates of the older population to that of the total population are quite large (figure 5.7). For instance, the incidence of poverty of older persons is three times that of the total population in the Republic of Korea, more than two and a half times in Australia and more than twice in Slovenia, Switzerland and Denmark. This situation can be explained by the recent rapid growth in the incomes of their working-age populations, resulting in greater earnings inequality between the older population and the working-age population (Zaidi, 2010).

**Figure 5.7**  
Ratio of the poverty rate of older persons to the poverty rate of the total population, OECD countries, late 2000s



Similar results were found in a study on poverty risks for older persons in 27 European Union countries, where the proportion of older persons who live in households with an equivalised disposable income below the threshold of 60 per cent of the national median equivalised income, called “at-risk-of-poverty rate” (Zaidi, 2010). This latter study further showed that women experience higher risks of poverty in old age than men of the same age with the exception of Spain and the United Kingdom of Great Britain and Northern Ireland. On



average, the poverty risk rate faced by older women was about 22 per cent as compared to 16 per cent for older men. This result is partly a reflection of the fact that women live longer than men, and therefore are disproportionately represented in the oldest cohorts (aged 75 years or over) that are subject to higher poverty risks. Also, the low pension income of older women is due to the fact that either they never worked and therefore receive a (lower) survivorship pension, or they worked but experienced unfavourable employment conditions. In addition, many women had childcare-related gaps in their employment records. As the education and labour market performance of younger women have been improving, future cohorts of older women are likely to have longer working careers as well as higher pension incomes (Zaidi, 2010).

In conclusion, older persons in OECD countries, face, for the most part, higher incidence of poverty than the total population. Countries with a low old-age poverty rate generally have a good social safety net system in the form of basic pensions or offer large redistribution in their earnings-related contributory pension schemes.



## Conclusion

By the end of the twentieth century, ageing was well under way in the more developed countries where the demographic transition started earlier. Ageing was beginning to take place in many developing countries that had experienced significant and sometimes quite fast fertility declines, mostly in Asia and Latin America. If the current projections are realized, ageing will become a virtually universal phenomenon during the twenty-first century, although it will progress with different intensity and speed across countries and regions. This global demographic shift entails fundamental social, economic and development challenges and opportunities, not the least of which is the increasing priority to satisfy the needs of older persons while enabling them to have longer, healthier and more productive lives.

The evidence reviewed in this report showed that population ageing is already taking place in most major areas of the world. The global share of older persons (aged 60 years or over) increased from 9.2 per cent in 1990 to 11.7 per cent in 2013 and will continue to grow as a proportion of the world population, reaching 21.1 per cent by 2050. Globally, the number of older persons is expected to more than double from 841 million people in 2013 to more than 2 billion in 2050. Presently, about two thirds of the world's older people live in developing countries. Because the older population in less developed regions is growing faster than in the more developed countries, the projections show that older persons will be increasingly concentrated in the less developed regions of the world. By 2050, nearly 8 in 10 of the world's older population will live in the less developed regions.

According to the most recent estimates and projections, the share of older persons aged 80 years or over (the “oldest old”) within the older population was 14 per cent in 2013 and is projected to reach 19 per cent in 2050. If this projection is realized, there will be 392 million persons aged 80 years or over by 2050, more than three times the present. The data also confirm that because females tend to live longer than their male counterparts, elderly women outnumber elderly men almost everywhere. In 2013, there were 85 men per 100 women in the age group 60 years or over and 61 men per 100 women in the age group 80 years or over, globally. However, these sex ratios are expected to increase moderately during the next several decades, reflecting a projected slight narrowing of the female advantage in survivorship.

The report also noted some of the major social and economic consequences of ageing. The old-age support ratios (number of working-age adults per older person in the population) are already low in the more developed regions and in some developing countries and are expected to continue to fall in the coming decades with ensuing fiscal pressures on support systems for older persons. In a number of developing countries, poverty is high among older persons, sometimes even higher than the population as a whole, especially in those countries with limited coverage of social security systems. While people are living longer lives almost everywhere, the prevalence of non-communicable diseases and disability increase as populations age, which will put upward pressure on health expenditures in the coming decades.

On the positive side, although most developed countries already have aged populations, a large number of developing countries are projected to experience high and increasing economic support ratios for years or decades to come and can therefore benefit significantly from the

“demographic dividend,” provided that appropriate labour market and other policies allow for a productive absorption of the growing working-age population and for increased investments in the human capital of children and youth.

Globally, 40 per cent of older persons live independently, that is, alone or with their spouse only. Independent living is far more common in the more developed countries where about three quarters of older persons live independently, compared with only a quarter in developing countries and only one eighth in the least developed countries. As countries develop and their populations continue to age, living alone or with a spouse only among older persons will likely become much more common in the future.

Many older persons, especially in developing countries, still work into older ages out of need or a wish to remain active and productive. In 2010, the labour force participation of persons aged 65 years or over was around 31 per cent in the less developed regions and 8 per cent in the more developed regions. Labour force participation among older men is decreasing in the less developed regions but increasing in the more developed regions. In both development regions, men made up a large majority of the total labour force among older persons, although that may change somewhat over the medium-term future if younger women, who are participating more in paid work, extend their labour force behaviour into older ages.

The labour earnings of older persons are an important source of economic support in old age, especially in developing countries. Public transfers constitute a major source of old-age support in developed countries and in some developing countries with extensive social security coverage, while income from their own assets finances another substantial part of the consumption of older persons in some high- and middle-income countries. In most countries, rich and poor older persons are net givers of familial transfers.

The evidence reviewed in this report suggests that there is wide international variation in the prevalence of old-age poverty. In much of Africa, the prevalence of poverty among older persons is either lower or only slightly higher than the total population average, while in Latin America the prevalence of poverty among older people varies widely, from levels much lower than average in countries of the Southern Cone to significantly higher than average in some Central American countries. Although older persons in most OECD countries are well covered by social protection systems, the relative poverty rate of older people tends to be higher than the population average.

## References

- Bucheli, Marisa and Cecilia Gonzalez (2011). Public transfer flows between generations in Uruguay. In *Population Aging and the Generational Economy: A Global Perspective*, Ronald Lee and Andrew Mason, eds. UK: Cheltenham; and MA: Northampton; Edward Elgar, pp. 434-445.
- Chawla, Amonthep (2008). Population aging, intergenerational transfers and saving in Thailand. Paper presented at the Population Association of America Meeting, 17-19 April 2008, New Orleans.
- Dethier, Jean-Jacques, Pierre Pestieau and Rabia Ali (2010). Universal minimum old age pensions: Impact on poverty and fiscal cost in 18 Latin American countries. Policy Research Working Paper, No. 5292. Washington, DC: World Bank. Available from <http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2010/05/06/00015834920100506135339/Rendered/PDF/WPS5292.pdf>.
- International Labour Organization (ILO) (2011). LABORSTA Internet. Economically Active Population, Estimates and Projections, 6<sup>th</sup> Edition. Available from [http://laborsta.ilo.org/applv8/data/EAPEP/eapep\\_E.html](http://laborsta.ilo.org/applv8/data/EAPEP/eapep_E.html). (Accessed 15 October 2013).
- Kakwani, Nanak and Kalanidhi Subbarao (2005). Ageing and poverty in Africa and the role of social pensions. Working Paper No. 8. Brasilia:United Nations Development Programme International Poverty Centre. Available from <http://www.ipc-undp.org/pub/IPCWorkingPaper8.pdf>.
- Kinsella, Kevin and David R. Phillips (2005). Global ageing: The challenge of success. *Population Bulletin*, vol. 60, No. 1. Washington, D.C.: Population Reference Bureau.
- Lee, Ronald and Andrew Mason eds. (2011). *Population Aging and the Generational Economy: A Global Perspective*. Cheltenham, UK: Edward Elgar Publishing Limited. Available from <http://web.idrc.ca/openebooks/514-4/>.
- Lee, Ronald and others (2011). The changing shape of the economic lifecycle in the United States, 1960 to 2003. In *Population Aging and the Generational Economy: A Global Perspective*, Ronald Lee and Andrew Mason, eds. UK: Cheltenham, and MA: Northampton; Edward Elgar, pp. 313-326.
- Mason, Andrew and Ronald Lee (2006). Reform and support systems for the elderly in developing countries: Capturing the second demographic dividend. *Genus*, vol. LXII, No. 2, pp. 11-35.
- Mason, Andrew and others (2009). Population aging and intergenerational transfers: Introducing age into national income accounts. In *Developments in the Economics of Aging*, David Wise, ed. Chicago: University of Chicago Press; National Bureau of Economic Research, pp. 89-122.

- Mason, Andrew and others (2011). Asset-based flows from a generational perspective. In *Population Aging and the Generational Economy: A Global Perspective*, Ronald Lee and Andrew Mason, eds. UK: Cheltenham; and MA: Northampton; Edward Elgar, pp. 209-236.
- MEASURE DHS (2011). Electronic databases of the MEASURE DHS project. Available from <http://www.measuredhs.com/accesssurveys/>. (Accessed 7 August 2011).
- Minnesota Population Center (2011). Integrated Public Use Microdata Series, International: Version 6.1 (Machine-readable database). Available from <https://international.ipums.org/international>. (Accessed 12 August 2011).
- Munich Center for the Economics of Aging (2011). Survey of Health, Ageing and Retirement in Europe. Munich: Max Planck Institute for Social Law and Social Policy. Available from <http://share-dev.mpisoc.mpg.de/>. (Accessed in July 2011).
- National Transfer Accounts (2013). National Transfer Accounts data available from <http://www.ntaccounts.org/web/nta/show/NTA%20Data>. (Accessed 1 November 2013).
- Organization for Economic Co-operation and Development (OECD) (2008). *Growing Unequal? Income Distribution and Poverty in OECD Countries*. Paris. Available from [www.oecd.org/els/social/inequality](http://www.oecd.org/els/social/inequality). (Accessed in September 2011).
- \_\_\_\_\_ (2011). *Pensions at a Glance 2011: Retirement-Income Systems in OECD and G20 Countries*. Paris.
- Ogawa, Naohiro, Rikiya Matsukura and Amonthep Chawla (2011). The elderly as latent assets in aging Japan. In *Population Aging and the Generational Economy: A Global Perspective*, Ronald Lee and Andrew Mason, eds. United Kingdom: Cheltenham; and MA: Northampton: Edward Elgar, pp. 475-487.
- Palloni, Alberto (2013). Longevity in the 21st century: How strong is the tug of the past? UN/POP/EGM-MORT/2013/6. Available from [http://www.un.org/en/development/desa/population/events/pdf/expert/20/2013-EGM\\_Alberto%20Palloni%20.pdf](http://www.un.org/en/development/desa/population/events/pdf/expert/20/2013-EGM_Alberto%20Palloni%20.pdf).
- Sepúlveda, Magdalena and Carly Nyst (2012). *The Human Rights Approach to Social Protection*. Oulu: Ministry for Foreign Affairs of Finland: Erweko Oy.
- SHARE (2011). The Survey of Health, Ageing and Retirement in Europe (SHARE) Micro-data files. Available from [http://cdata8.uvt.nl/sharedatadissemination/users/login\\_](http://cdata8.uvt.nl/sharedatadissemination/users/login_) (Accessed 28 July 2011).
- Tung, An-Chi and Nicole Mun Sim Lai (2013). Living arrangements and support for the elderly in Taiwan. In *Population Aging and the Generational Economy: A Global Perspective*, Ronald Lee and Andrew Mason, eds. UK: Cheltenham; and MA: Northampton; Edward Elgar, pp. 488-499.

- Turra, Cassio, Bernardo L Queiroz and Eduardo L. G. Rios-Neto (2011). Idiosyncrasies of intergenerational transfers in Brazil. In *Population Aging and the Generational Economy: A Global Perspective*, Ronald Lee and Andrew Mason, eds. Cheltenham, UK and Northampton, MA: Edward Elgar, pp. 394-407.
- United Nations (2005). *Living Arrangements of Older Persons Around the World*. Sales No. E.05.XIII.9.
- \_\_\_\_\_ (2012). *Population Ageing and Development 2012 Wall chart*. Sales No. E.12.XIII.6.
- \_\_\_\_\_ (2013). *National Transfer Accounts Manual: Measuring and Analysing the Generational Economy*. Sales No. E.13.XIII.6. Available from <http://www.un.org/en/development/desa/publications/measuring-and-analysing-the-generational-economy.html>.
- United Nations, Department of Economic and Social Affairs, Population Division (2012a). *World Mortality Report 2011*. ST/ESA/SER.A/324.
- \_\_\_\_\_ (2012b). Population ageing and development: Ten years after Madrid. Population Facts No. 2012/4. Available from [http://www.un.org/en/development/desa/population/publications/pdf/popfacts/popfacts\\_2012-4.pdf](http://www.un.org/en/development/desa/population/publications/pdf/popfacts/popfacts_2012-4.pdf)
- \_\_\_\_\_ (2013). *World Population Prospects: The 2012 Revision, DVD Edition*.
- United Nations Population Fund (UNFPA) and HelpAge International (2012). *Ageing in the Twenty-first Century: A Celebration and a Challenge*. New York and London.
- United States Social Security Administration (2010a). *Social Security Programs Throughout the World: The Americas, 2009*. Available from <http://www.ssa.gov/policy/docs/progdesc/ssptw/2008-2009/americas/ssptw09americas.pdf>.
- \_\_\_\_\_ (2010b). *Social Security Programs Throughout the World: Europe, 2010*. Available from <http://www.ssa.gov/policy/docs/progdesc/ssptw/2010-2011/europe/ssptw10europe.pdf>.
- \_\_\_\_\_ (2011a). *Social Security Programs Throughout the World: Africa, 2011*. Available from <http://www.ssa.gov/policy/docs/progdesc/ssptw/2010-2011/africa/ssptw11africa.pdf>.
- \_\_\_\_\_ (2011b). *Social Security Programs Throughout the World: Asia and the Pacific, 2010*. Available from <http://www.ssa.gov/policy/docs/progdesc/ssptw/2010-2011/asia/ssptw10asia.pdf>.
- \_\_\_\_\_ (2011c). *Social Security Programs Throughout the World: the Americas, 2011*. Available from <http://www.ssa.gov/policy/docs/progdesc/ssptw/2010-2011/americas/index.html>.
- \_\_\_\_\_ (2012a). *Social Security Programs Throughout the World: Europe, 2012*. Available from <http://www.ssa.gov/policy/docs/progdesc/ssptw/2012-2013/europe/index.html>.

United States Social Security Administration (2012b). *Social Security Programs Throughout the World: Asia and the Pacific, 2012*. Available from <http://www.ssa.gov/policy/docs/progdesc/ssptw/2012-2013/asia/index.html>.

\_\_\_\_\_. (2013). *Social Security Programs Throughout the World: Africa, 2013*. Available from <http://www.ssa.gov/policy/docs/progdesc/ssptw/2012-2013/africa/index.html>.

World Bank Institute (2005). *Introduction to Poverty Analysis—Poverty Manual*. Washington, D.C.: World Bank. Available from <http://siteresources.worldbank.org/PGLP/Resources/PovertyManual.pdf>.

World Health Organization (WHO) (2007). *Women, Ageing and Health: A Framework for Action: Focus on Gender*. Available from [http://www.who.int/publications/2007/9789241563529\\_eng.pdf](http://www.who.int/publications/2007/9789241563529_eng.pdf).

\_\_\_\_\_. (2011). Metrics: Disability-Adjusted Life Year (DALY). Quantifying the Burden of Disease from mortality and morbidity. Available from [http://www.who.int/healthinfo/global\\_burden\\_disease/metrics\\_daly/en/](http://www.who.int/healthinfo/global_burden_disease/metrics_daly/en/).

\_\_\_\_\_. (2013). Global Health Observatory of the World Health Organization. Available from <http://apps.who.int/gho/data/node.main>. (Accessed 15 October 2013).

World Health Organization (WHO) and United States National Institute on Aging (U.S. NIA) eds. (2011). *Global Health and Aging*. Available from [http://www.who.int/ageing/publications/global\\_health/en/](http://www.who.int/ageing/publications/global_health/en/)

Zaidi, Asghar (2010). Poverty risks for older people in EU countries—An update. Policy Brief January (II) 2010. Vienna: European Centre for Social Welfare Policy and Research. Available from [http://www.euro.centre.org/data/1264603415\\_56681.pdf](http://www.euro.centre.org/data/1264603415_56681.pdf).



# Annexes



## Annex I

### Definition of the indicators of population ageing

#### A. DISABILITY-ADJUSTED LIFE YEAR (DALY)

The **Disability-Adjusted Life Years (DALYs)** is a measurement of the gap between current health status and an ideal health situation where the entire population lives to an advanced age, free of disease and disability. One DALY can be thought of as one lost year of “healthy” life. It is calculated as the sum of the Years of Life Lost (YLL) due to premature mortality in the population and the Years Lost due to Disability (YLD) for people living with the health condition or its consequences.

#### B. DEPENDENCY RATIO

The **total dependency ratio** is the number of persons under age 15 years plus persons aged 65 years or over per one hundred persons 15 to 64 years. It is the sum of the child dependency ratio and the old-age dependency ratio.

The **child dependency ratio** is the number of persons 0 to 14 years per one hundred persons aged 15 to 64 years

The **old-age dependency ratio** is the number of persons aged 65 years or over per one hundred persons aged 15 to 64 years.

#### C. GROWTH RATE

A population’s **growth rate** is the increase (or decrease) in the number of persons in the population during a certain period of time, expressed as a percentage of the population at the beginning of the time period. The **average annual growth rates** for all ages as well as for particular age groups are calculated on the assumption that growth is continuous.

#### D. LABOUR FORCE PARTICIPATION

The **labour force participation rate** consists of the economically active population in a particular age group as a percentage of the total population of that same age group. The active population (or labour force) includes persons in paid or unpaid employment, members of the armed forces (including temporary members) and the unemployed (including first-time job-seekers.). This definition is the one adopted by the Thirteenth International Conference of Labour Statisticians (Geneva, 1982). National definitions may differ in some cases. For information on the differences in scope, definitions and methods of calculation used for the various national series, see International Labour Organization, *Sources and Methods: Labour Statistics* (formerly *Statistical Sources and Methods*), Volume 5: Total and Economically Active Population, Employment and Unemployment (Population Censuses), available from <http://laborsta.ilo.org/applv8/data/SSM5/E/ssm5.html#E>.

## **E. ECONOMIC SUPPORT RATIO**

The **economic support ratio** is the number of equivalent producers or workers divided by the number of equivalent consumers in a given population.

## **E. LIFE EXPECTANCY**

**Life expectancy** at a specific age is the average number of additional years a person of that age could expect to live if current mortality levels observed for ages above that age were to continue for the rest of that person's life. In particular, **life expectancy at birth** is the average number of years a newborn would live if current age-specific mortality rates were to continue.

## **G. LIVING INDEPENDENTLY**

**Living independently** is either living alone or only with one's spouse.

## **H. MEDIAN AGE**

The **median age** of a population is the age that divides a population into two groups of the same size, such that half the total population is younger than this age, and the other half older.

## **I. OLD-AGE SUPPORT RATIO**

The **old-age support ratio** is the number of persons aged 15 to 64 years per every person aged 65 years or over.

## **J. SEX RATIO**

The **sex ratio** is calculated as the number of males per one hundred females in a population. The sex ratio may be calculated for a total population or for a specific age group.

## **K. STATUTORY PENSIONABLE AGE**

The **statutory pensionable age** is the age at which eligible individuals qualify to receive old-age benefits in accordance to national laws and regulations. In addition to attainment of a specified age, receiving old-age benefits can also be conditional on the completion of a specified period of contributions or covered employment.

## **L. TOTAL FERTILITY RATE**

The **total fertility rate** is the average number of children a woman would bear over the course of her lifetime if current age-specific fertility rates remained constant throughout her childbearing years (normally between the ages of 15 and 49 years). The current total fertility rate is an indicator of the level of fertility at a given time.

## Annex II

### Classification of major areas and regions

#### Africa

##### *Eastern Africa*

Burundi  
Comoros  
Djibouti  
Eritrea  
Ethiopia  
Kenya  
Madagascar  
Malawi  
Mauritius  
Mayotte  
Mozambique  
Réunion  
Rwanda  
Seychelles  
Somalia  
South Sudan  
Uganda  
United Republic of  
Tanzania  
Zambia  
Zimbabwe

##### *Middle Africa*

Angola  
Cameroon  
Central African Republic  
Chad  
Congo  
Democratic Republic of  
the Congo  
Equatorial Guinea  
Gabon  
São Tomé and Príncipe

##### *Northern Africa*

Algeria  
Egypt  
Libya  
Morocco  
Sudan  
Tunisia  
Western Sahara

##### *Southern Africa*

Botswana  
Lesotho  
Namibia  
South Africa  
Swaziland

##### *Western Africa*

Benin  
Burkina Faso  
Cape Verde  
Côte d'Ivoire  
Gambia  
Ghana  
Guinea  
Guinea-Bissau  
Liberia  
Mali  
Mauritania  
Niger  
Nigeria  
St. Helena  
Senegal  
Sierra Leone  
Togo

#### Asia

##### *Eastern Asia*

China  
China, Hong Kong SAR  
China, Macao SAR  
Democratic People's  
Republic of Korea  
Japan  
Mongolia  
Republic of Korea

##### *Central Asia*

Kazakhstan  
Kyrgyzstan  
Tajikistan  
Turkmenistan  
Uzbekistan

##### *Southern Asia*

Afghanistan  
Bangladesh  
Bhutan  
India  
Iran (Islamic Republic of)  
Maldives  
Nepal  
Pakistan  
Sri Lanka

##### *South-Eastern Asia*

Brunei Darussalam  
Cambodia  
Indonesia  
Lao People's Democratic  
Republic  
Malaysia  
Myanmar  
Philippines  
Singapore  
Thailand  
Timor-Leste  
Viet Nam

##### *Western Asia*

Armenia  
Azerbaijan  
Bahrain  
Cyprus  
Georgia  
Iraq  
Israel  
Jordan  
Kuwait  
Lebanon  
Oman  
Qatar  
Saudi Arabia  
State of Palestine  
Syrian Arab Republic  
Turkey  
United Arab Emirates  
Yemen

## Europe

### *Eastern Europe*

Belarus  
Bulgaria  
Czech Republic  
Hungary  
Poland  
Republic of Moldova  
Romania  
Russian Federation  
Slovakia  
Ukraine

### *Northern Europe*

Channel Islands  
Denmark  
Estonia  
Faeroe Islands  
Finland  
Iceland  
Ireland  
Isle of Man  
Latvia  
Lithuania  
Norway  
Sweden  
United Kingdom of Great  
Britain and  
Northern Ireland

### *Southern Europe*

Albania  
Andorra  
Bosnia and Herzegovina  
Croatia  
Gibraltar  
Greece  
Holy See  
Italy  
Malta  
Montenegro  
Portugal  
San Marino  
Serbia  
Slovenia  
Spain  
The former Yugoslav  
Republic of Macedonia

### *Western Europe*

Austria  
Belgium  
France  
Germany  
Liechtenstein  
Luxembourg  
Monaco  
Netherlands  
Switzerland

## Latin America and the Caribbean

### *Caribbean*

Anguilla  
Antigua and Barbuda  
Aruba  
Bahamas  
Barbados  
British Virgin Islands  
Caribbean Netherlands  
Cayman Islands  
Cuba  
Curaçao  
Dominica  
Dominican Republic  
Grenada  
Guadeloupe  
Haiti  
Jamaica  
Martinique  
Montserrat  
Puerto Rico  
Saint Kitts and Nevis  
Saint Lucia  
Saint Vincent and the  
Grenadines  
Sint Maarten  
Trinidad and Tobago  
Turks and Caicos Islands  
United States Virgin Islands

### *Central America*

Belize  
Costa Rica  
El Salvador  
Guatemala  
Honduras  
Mexico  
Nicaragua  
Panama

### *South America*

Argentina  
Bolivia (Plurinational State of)  
Brazil  
Chile  
Colombia  
Ecuador  
Falkland Islands (Malvinas)  
French Guiana  
Guyana  
Paraguay  
Peru  
Suriname  
Uruguay  
Venezuela (Bolivarian Republic of)

## Northern America

Bermuda  
Canada  
Greenland  
St. Pierre and Miquelon  
United States of America

## Oceania

### *Australia/New Zealand*

Australia  
New Zealand

### *Melanesia*

Fiji  
New Caledonia  
Papua New Guinea  
Solomon Islands  
Vanuatu

### *Micronesia*

Guam  
Kiribati  
Marshall Islands  
Micronesia  
(Federated States of)  
Nauru  
Northern Mariana Islands  
Palau

### *Polynesia*

American Samoa  
Cook Islands  
French Polynesia  
Niue  
Samoa  
Tokelau  
Tonga  
Tuvalu  
Wallis and Futuna Islands

## Least developed countries

Afghanistan  
Angola  
Bangladesh  
Benin  
Bhutan  
Burkina Faso  
Burundi  
Cambodia  
Central African Republic  
Chad  
Comoros  
Democratic Republic of  
the Congo

Djibouti  
Equatorial Guinea  
Eritrea  
Ethiopia  
Gambia  
Guinea  
Guinea-Bissau  
Haiti  
Kiribati  
Lao People's Democratic  
Republic  
Lesotho  
Liberia

Madagascar  
Malawi  
Mali  
Mauritania  
Mozambique  
Myanmar  
Nepal  
Niger  
Rwanda  
Samoa  
São Tomé and Príncipe  
Senegal  
Sierra Leone

Solomon Islands  
Somalia  
South Sudan  
Sudan  
Timor-Leste  
Togo  
Tuvalu  
Uganda  
United Republic of  
Tanzania  
Vanuatu  
Yemen  
Zambia





# **Annex III**

## **Summary tables**

**Table A.III.1.**  
**Population aged 60 years or over, 65 years or over, and 80**  
**years or over by sex (thousands): world, major areas and**  
**regions, 2013**

Major areas and regions	60 years or over			65 years or over			80 years or over		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
<b>World</b>	<b>840 628</b>	<b>385 439</b>	<b>455 194</b>	<b>570 459</b>	<b>253 722</b>	<b>316 742</b>	<b>120 199</b>	<b>46 024</b>	<b>74 178</b>
More developed regions	287 020	123 611	163 414	211 051	87 901	123 154	56 879	19 723	37 158
Less developed regions	553 608	261 828	291 781	359 409	165 821	193 588	63 321	26 302	37 020
Least developed countries	48 580	22 918	25 662	31 654	14 761	16 893	4 515	2 034	2 481
<b>Africa</b>	<b>60 033</b>	<b>27 428</b>	<b>32 606</b>	<b>38 513</b>	<b>17 212</b>	<b>21 302</b>	<b>5 248</b>	<b>2 127</b>	<b>3 121</b>
Eastern Africa	17 645	8 136	9 510	11 448	5 219	6 229	1 630	706	924
Middle Africa	6 103	2 782	3 321	3 918	1 751	2 167	483	195	287
Northern Africa	16 179	7 428	8 751	10 513	4 649	5 864	1 707	679	1 028
Southern Africa	4 967	1 917	3 050	3 206	1 183	2 024	550	164	386
Western Africa	15 139	7 164	7 975	9 428	4 410	5 018	878	382	496
<b>Asia</b>	<b>468 549</b>	<b>223 015</b>	<b>245 535</b>	<b>307 699</b>	<b>142 585</b>	<b>165 115</b>	<b>57 576</b>	<b>23 609</b>	<b>33 967</b>
Eastern Asia	251 132	120 923	130 210	167 045	78 207	88 839	34 323	13 745	20 578
South-Central Asia	143 981	69 146	74 835	92 645	43 516	49 129	14 319	6 474	7 845
South-Eastern Asia	54 625	24 336	30 289	35 472	15 258	20 213	6 565	2 491	4 074
Western Asia	18 812	8 611	10 201	12 537	5 604	6 933	2 369	899	1 470
<b>Europe</b>	<b>169 874</b>	<b>70 951</b>	<b>98 926</b>	<b>125 152</b>	<b>50 332</b>	<b>74 823</b>	<b>33 239</b>	<b>11 025</b>	<b>22 216</b>
Eastern Europe	59 663	22 115	37 549	41 511	14 340	27 172	9 667	2 645	7 022
Northern Europe	23 289	10 507	12 782	17 465	7 672	9 793	4 706	1 733	2 973
Southern Europe	38 380	16 846	21 534	29 280	12 473	16 808	8 510	3 074	5 437
Western Europe	48 543	21 483	27 061	36 896	15 847	21 050	10 356	3 573	6 783
<b>Latin America and the Caribbean</b>	<b>65 491</b>	<b>29 341</b>	<b>36 150</b>	<b>44 694</b>	<b>19 595</b>	<b>25 099</b>	<b>9 721</b>	<b>3 813</b>	<b>5 908</b>
Caribbean	5 367	2 488	2 879	3 776	1 721	2 056	864	356	507
Central America	15 120	6 796	8 324	10 272	4 572	5 700	2 223	901	1 322
South America	45 004	20 057	24 947	30 646	13 303	17 343	6 635	2 556	4 079
<b>Northern America</b>	<b>70 571</b>	<b>31 836</b>	<b>38 736</b>	<b>50 041</b>	<b>21 990</b>	<b>28 052</b>	<b>13 311</b>	<b>5 008</b>	<b>8 304</b>
<b>Oceania</b>	<b>6 109</b>	<b>2 868</b>	<b>3 241</b>	<b>4 360</b>	<b>2 008</b>	<b>2 351</b>	<b>1 105</b>	<b>442</b>	<b>663</b>
Australia/New Zealand	5 486	2 581	2 905	3 973	1 835	2 138	1 055	423	631
Melanesia	514	236	279	316	140	175	38	14	23
Micronesia	47	22	24	29	13	16	5	2	3
Polynesia	63	30	33	42	20	23	8	3	5

**Table A.III.2.**  
**Percentage of population aged 60 years or over, 65 years or over, and 80 years or over by sex: world, major areas and regions, 2013**

Major areas and regions	60 years or over			65 years or over			80 years or over		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
<b>World</b>	<b>11.7</b>	<b>10.7</b>	<b>12.8</b>	<b>8.0</b>	<b>7.0</b>	<b>8.9</b>	<b>1.7</b>	<b>1.3</b>	<b>2.1</b>
More developed regions	22.9	20.3	25.4	16.8	14.5	19.1	4.5	3.2	5.8
Less developed regions	9.4	8.7	10.0	6.1	5.5	6.7	1.1	0.9	1.3
Least developed countries	5.4	5.1	5.7	3.5	3.3	3.8	0.5	0.5	0.6
<b>Africa</b>	<b>5.4</b>	<b>4.9</b>	<b>5.9</b>	<b>3.5</b>	<b>3.1</b>	<b>3.8</b>	<b>0.5</b>	<b>0.4</b>	<b>0.6</b>
Eastern Africa	4.7	4.4	5.1	3.1	2.8	3.3	0.4	0.4	0.5
Middle Africa	4.5	4.1	4.9	2.9	2.6	3.2	0.4	0.3	0.4
Northern Africa	7.7	7.1	8.4	5.0	4.4	5.6	0.8	0.6	1.0
Southern Africa	8.2	6.5	9.8	5.3	4.0	6.5	0.9	0.6	1.2
Western Africa	4.6	4.3	4.9	2.8	2.6	3.1	0.3	0.2	0.3
<b>Asia</b>	<b>10.9</b>	<b>10.1</b>	<b>11.7</b>	<b>7.2</b>	<b>6.5</b>	<b>7.9</b>	<b>1.3</b>	<b>1.1</b>	<b>1.6</b>
Eastern Asia	15.5	14.5	16.5	10.3	9.4	11.3	2.1	1.6	2.6
South-Central Asia	7.9	7.4	8.5	5.1	4.7	5.6	0.8	0.7	0.9
South-Eastern Asia	8.8	7.9	9.7	5.7	5.0	6.5	1.1	0.8	1.3
Western Asia	7.7	6.7	8.7	5.1	4.4	5.9	1.0	0.7	1.3
<b>Europe</b>	<b>22.9</b>	<b>19.8</b>	<b>25.7</b>	<b>16.9</b>	<b>14.1</b>	<b>19.4</b>	<b>4.5</b>	<b>3.1</b>	<b>5.8</b>
Eastern Europe	20.3	16.0	24.0	14.1	10.4	17.4	3.3	1.9	4.5
Northern Europe	23.2	21.3	25.1	17.4	15.5	19.2	4.7	3.5	5.8
Southern Europe	24.6	22.1	27.1	18.8	16.3	21.1	5.5	4.0	6.8
Western Europe	25.3	22.9	27.6	19.2	16.9	21.4	5.4	3.8	6.9
<b>Latin America and the Caribbean</b>	<b>10.6</b>	<b>9.7</b>	<b>11.5</b>	<b>7.2</b>	<b>6.5</b>	<b>8.0</b>	<b>1.6</b>	<b>1.3</b>	<b>1.9</b>
Caribbean	12.6	11.8	13.4	8.9	8.2	9.6	2.0	1.7	2.4
Central America	9.0	8.3	9.7	6.1	5.6	6.6	1.3	1.1	1.5
South America	11.1	10.0	12.1	7.5	6.6	8.4	1.6	1.3	2.0
<b>Northern America</b>	<b>19.9</b>	<b>18.2</b>	<b>21.5</b>	<b>14.1</b>	<b>12.6</b>	<b>15.6</b>	<b>3.7</b>	<b>2.9</b>	<b>4.6</b>
<b>Oceania</b>	<b>15.9</b>	<b>15.0</b>	<b>16.9</b>	<b>11.4</b>	<b>10.5</b>	<b>12.3</b>	<b>2.9</b>	<b>2.3</b>	<b>3.5</b>
Australia/New Zealand	19.7	18.7	20.7	14.3	13.3	15.2	3.8	3.1	4.5
Melanesia	5.5	5.0	6.1	3.4	3.0	3.9	0.4	0.3	0.5
Micronesia	9.2	8.7	9.7	5.7	5.1	6.3	0.9	0.7	1.1
Polynesia	9.3	8.7	9.9	6.3	5.7	6.8	1.2	0.9	1.5

**Table A.III.3.**  
**Selected indicators of ageing: world, development groups,**  
**major areas and regions, 2013**

Development groups, major areas and regions	Broad age groups						Old-age support ratio
	(percentage)			Dependency ratios			
	0-14	15-59	60+	Total	Child Old-age		
<b>World</b>	<b>25.8</b>	<b>62.6</b>	<b>11.5</b>	<b>52.0</b>	<b>39.9</b>	<b>12.1</b>	<b>8.3</b>
More developed regions	16.3	61.1	22.7	49.9	24.6	25.3	4.0
Less developed regions	27.8	63.0	9.2	52.4	43.1	9.3	10.8
Least developed countries	39.1	55.6	5.3	77.2	70.9	6.2	16.0
<b>Africa</b>	<b>40.0</b>	<b>54.7</b>	<b>5.3</b>	<b>79.7</b>	<b>73.5</b>	<b>6.2</b>	<b>16.0</b>
Eastern Africa	42.8	52.6	4.6	88.3	82.6	5.8	17.3
Middle Africa	44.0	51.6	4.4	92.0	86.4	5.5	18.1
Northern Africa	30.8	61.7	7.6	57.1	49.2	7.9	12.7
Southern Africa	29.7	62.2	8.1	55.2	47.0	8.2	12.1
Western Africa	42.9	52.7	4.5	87.6	82.3	5.3	18.7
<b>Asia</b>	<b>24.4</b>	<b>64.9</b>	<b>10.7</b>	<b>46.9</b>	<b>36.4</b>	<b>10.5</b>	<b>9.5</b>
Eastern Asia	17.3	67.3	15.3	38.6	24.3	14.3	7.0
South-Central Asia	29.2	63.0	7.8	53.5	45.7	7.8	12.8
South-Eastern Asia	26.7	64.6	8.7	49.1	40.6	8.5	11.7
Western Asia	29.3	63.2	7.5	53.7	45.9	7.8	12.7
<b>Europe</b>	<b>15.4</b>	<b>61.9</b>	<b>22.7</b>	<b>48.0</b>	<b>23.1</b>	<b>24.9</b>	<b>4.0</b>
Eastern Europe	15.1	64.8	20.1	41.6	21.6	20.0	5.0
Northern Europe	17.4	59.7	22.9	53.7	27.0	26.7	3.7
Southern Europe	14.8	60.8	24.4	50.9	22.5	28.3	3.5
Western Europe	15.4	59.6	25.0	53.2	23.8	29.4	3.4
<b>Latin America and the Caribbean</b>	<b>26.4</b>	<b>63.2</b>	<b>10.4</b>	<b>51.8</b>	<b>40.8</b>	<b>11.0</b>	<b>9.1</b>
Caribbean	25.2	62.4	12.4	52.7	39.2	13.6	7.4
Central America	29.4	61.8	8.9	56.6	46.9	9.6	10.4
South America	25.3	63.8	10.9	49.9	38.6	11.3	8.9
<b>Northern America</b>	<b>19.0</b>	<b>61.4</b>	<b>19.6</b>	<b>50.0</b>	<b>28.9</b>	<b>21.1</b>	<b>4.7</b>
<b>Oceania</b>	<b>23.5</b>	<b>60.8</b>	<b>15.7</b>	<b>54.4</b>	<b>36.8</b>	<b>17.6</b>	<b>5.7</b>
Australia/New Zealand	19.0	61.5	19.5	50.4	29.0	21.5	4.7
Melanesia	36.0	58.6	5.4	67.3	61.6	5.7	17.6
Micronesia	29.0	62.0	9.0	54.6	45.8	8.8	11.4
Polynesia	29.7	61.2	9.1	57.7	47.8	9.9	10.1

Sex ratio (men per 100 women)			Annual population growth rate (percentage)				Development groups, major areas and regions
60+	65+	80+	Total	60+	65+	80+	
85	80	62	1.1	3.3	2.8	2.1	<b>World</b>
76	71	53	0.3	1.9	2.1	1.7	More developed regions
90	86	71	1.3	4.0	3.2	2.4	Less developed regions
89	87	82	2.3	3.1	2.8	2.0	Least developed countries
<b>84</b>	<b>81</b>	<b>68</b>	<b>2.5</b>	<b>3.1</b>	<b>2.8</b>	<b>1.3</b>	<b>Africa</b>
86	84	76	2.9	3.4	3.5	2.6	Eastern Africa
84	81	68	2.7	2.7	2.5	1.2	Middle Africa
85	79	66	1.7	3.6	2.8	1.9	Northern Africa
63	58	43	0.8	2.4	2.5	-0.7	Southern Africa
90	88	77	2.8	2.4	2.3	-0.7	Western Africa
<b>91</b>	<b>86</b>	<b>70</b>	<b>1.0</b>	<b>3.8</b>	<b>3.1</b>	<b>2.6</b>	<b>Asia</b>
93	88	67	0.5	3.8	3.3	2.7	Eastern Asia
92	89	83	1.3	3.7	2.7	2.6	South-Central Asia
80	75	61	1.2	4.4	3.2	2.1	South-Eastern Asia
84	81	61	1.8	4.0	2.9	3.9	Western Asia
<b>72</b>	<b>67</b>	<b>50</b>	<b>0.0</b>	<b>1.6</b>	<b>1.4</b>	<b>1.3</b>	<b>Europe</b>
59	53	38	-0.3	1.8	0.5	-0.6	Eastern Europe
82	78	58	0.5	1.3	2.4	1.0	Northern Europe
78	74	57	0.1	1.3	1.7	2.6	Southern Europe
79	75	53	0.2	1.7	1.7	2.2	Western Europe
<b>81</b>	<b>78</b>	<b>65</b>	<b>1.1</b>	<b>3.9</b>	<b>3.7</b>	<b>3.2</b>	<b>Latin America and the Caribbean</b>
86	84	70	0.7	2.9	2.5	2.6	Caribbean
82	80	68	1.4	4.5	3.8	3.7	Central America
80	77	63	1.0	3.8	3.7	3.2	South America
<b>82</b>	<b>78</b>	<b>60</b>	<b>0.8</b>	<b>3.0</b>	<b>3.3</b>	<b>0.9</b>	<b>Northern America</b>
<b>88</b>	<b>85</b>	<b>67</b>	<b>1.4</b>	<b>2.9</b>	<b>3.6</b>	<b>1.9</b>	<b>Oceania</b>
89	86	67	1.2	2.8	3.6	1.9	Australia/New Zealand
85	80	61	2.0	3.8	3.6	2.8	Melanesia
92	84	62	1.1	5.3	5.8	3.8	Micronesia
90	87	63	0.8	3.5	2.4	3.4	Polynesia

**Table A.III.4. Country ranking by percentage of population aged 60 years or over, 2013**

Country	60 or over	Rank	Country	60 or over	Rank
Japan	32.0	1	Republic of Moldova	17.1	52
Italy	26.9	2	Cyprus	17.0	53
Germany	26.8	3	Aruba	16.9	54
Bulgaria	26.1	4	Republic of Korea	16.9	55
Finland	26.1	5	Other non-specified areas	16.7	56
Greece	25.4	6	Ireland	16.7	57
Sweden	25.2	7	Barbados	15.9	58
Croatia	24.8	8	Singapore	15.6	59
Portugal	24.5	9	Albania	15.0	60
Latvia	24.1	10	Israel	15.0	61
Estonia	23.9	11	Argentina	14.9	62
Denmark	23.8	12	Thailand	14.3	63
France	23.8	13	Armenia	14.2	64
Belgium	23.8	14	Chile	14.0	65
Hungary	23.7	15	New Caledonia	13.9	66
Slovenia	23.6	16	China	13.8	67
Austria	23.5	17	Mauritius	13.5	68
Czech Republic	23.5	18	Trinidad and Tobago	13.4	69
Malta	23.2	19	China, Macao SAR	13.3	70
Switzerland	23.2	20	Sri Lanka	12.5	71
Netherlands	23.1	21	Dem. People's Republic of Korea	12.3	72
United Kingdom	22.9	22	Réunion	12.3	73
Spain	22.9	23	Guam	12.0	74
Channel Islands	22.5	24	Lebanon	11.9	75
United States Virgin Islands	22.3	25	Saint Lucia	11.9	76
Martinique	21.8	26	Bahamas	11.5	77
Norway	21.3	27	Jamaica	11.0	78
Ukraine	21.1	28	Brazil	11.0	79
Canada	21.0	29	Seychelles	10.7	80
Poland	20.9	30	Tunisia	10.7	81
Serbia	20.8	31	Turkey	10.7	82
Romania	20.8	32	French Polynesia	10.6	83
Bosnia and Herzegovina	20.6	33	Costa Rica	10.3	84
Lithuania	20.5	34	Panama	10.2	85
China, Hong Kong SAR	19.9	35	Kazakhstan	10.1	86
Curaçao	19.8	36	Saint Vincent and the Grenadines	10.0	87
Georgia	19.5	37	Antigua and Barbuda	10.0	88
Australia	19.5	38	Grenada	9.7	89
United States of America	19.5	39	El Salvador	9.5	90
Belarus	19.3	40	Suriname	9.5	91
Luxembourg	19.1	41	Viet Nam	9.5	92
New Zealand	19.0	42	Colombia	9.3	93
Slovakia	19.0	43	Mexico	9.3	94
Russian Federation	18.8	44	Ecuador	9.3	95
Montenegro	18.8	45	Venezuela (Bolivarian Republic of)	9.3	96
Puerto Rico	18.7	46	Peru	9.2	97
Uruguay	18.4	47	Dominican Republic	9.0	98
Cuba	18.3	48	Egypt	8.5	99
Guadeloupe	18.2	49	Fiji	8.5	100
TFYR Macedonia	17.8	50	South Africa	8.4	101
Iceland	17.7	51	Azerbaijan	8.4	102

Country	60 or over	Rank	Country	60 or over	Rank
Malaysia	8.3	103	Ethiopia	5.0	153
Myanmar	8.3	104	Congo	5.0	154
India	8.2	105	Solomon Islands	5.0	155
Paraguay	8.0	106	Côte d'Ivoire	5.0	156
Iran (Islamic Republic of)	8.0	107	Guinea	5.0	157
Indonesia	7.9	108	Sudan	4.9	158
Tonga	7.8	109	Iraq	4.9	159
French Guiana	7.8	110	Mozambique	4.9	160
Cambodia	7.7	111	Mauritania	4.9	161
Morocco	7.7	112	Saudi Arabia	4.8	162
Nepal	7.6	113	Malawi	4.8	163
Brunei Darussalam	7.4	114	United Republic of Tanzania	4.8	164
Samoa	7.4	115	Papua New Guinea	4.8	165
Algeria	7.3	116	Cameroon	4.8	166
Bolivia (Plurinational State of)	7.2	117	Tajikistan	4.8	167
Gabon	7.2	118	Western Sahara	4.7	168
Cape Verde	7.1	119	Liberia	4.7	169
Libya	7.0	120	Sao Tome and Principe	4.6	170
Bhutan	6.9	121	Equatorial Guinea	4.6	171
Bangladesh	6.8	122	Comoros	4.5	172
Micronesia (Fed. States of)	6.8	123	Yemen	4.5	173
Nicaragua	6.7	124	Benin	4.5	174
Haiti	6.7	125	State of Palestine	4.4	175
Maldives	6.6	126	Senegal	4.4	176
Guatemala	6.5	127	Madagascar	4.4	177
Uzbekistan	6.4	128	Democratic Republic of the Congo	4.4	178
Kiribati	6.4	129	Nigeria	4.4	179
Honduras	6.4	130	Somalia	4.4	180
Turkmenistan	6.4	131	Togo	4.3	181
Kyrgyzstan	6.3	132	Sierra Leone	4.3	182
Pakistan	6.3	133	Kenya	4.2	183
Philippines	6.3	134	Mali	4.1	184
Lesotho	6.2	135	Niger	4.1	185
Syrian Arab Republic	6.2	136	Oman	3.9	186
Vanuatu	6.0	137	Rwanda	3.9	187
Djibouti	5.9	138	Burundi	3.8	188
Mongolia	5.8	139	Zambia	3.8	189
Botswana	5.7	140	Kuwait	3.8	190
Lao People's Democratic Republic	5.7	141	Burkina Faso	3.8	191
Belize	5.7	142	Angola	3.8	192
Central African Republic	5.6	143	Afghanistan	3.8	193
Zimbabwe	5.5	144	Chad	3.7	194
Namibia	5.3	145	Mayotte	3.7	195
Swaziland	5.3	146	Eritrea	3.7	196
Guyana	5.3	147	Gambia	3.6	197
Ghana	5.2	148	Uganda	3.6	198
Jordan	5.2	149	Bahrain	3.6	199
Guinea-Bissau	5.2	150	Qatar	1.9	200
Timor-Leste	5.1	151	United Arab Emirates	0.9	201
South Sudan	5.1	152			









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