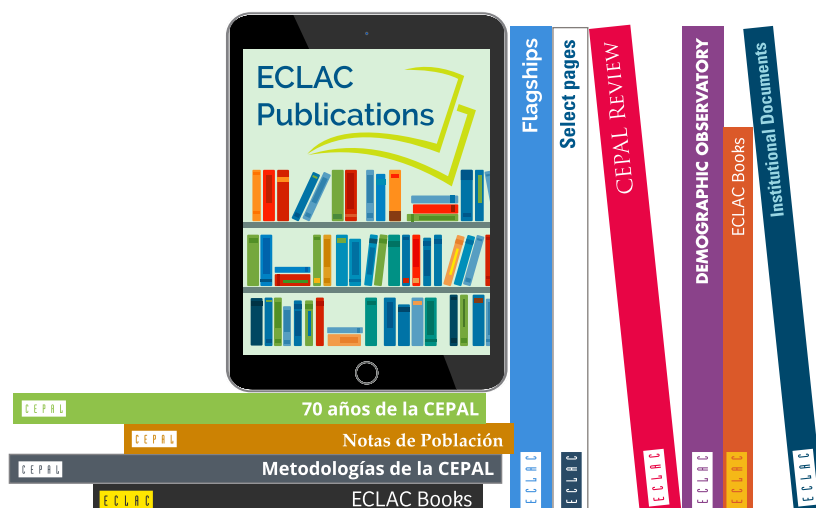


# Demographic Outlook for Population Aging in the Region of the Americas



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# Demographic Outlook for Population Aging in the Region of the Americas

Washington, D.C., 2023



Decade of Healthy Aging in the Americas  
**situation and challenges**

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The purpose of the series is to provide regular updates on the different areas of action of the Decade of Healthy Aging (2021-2030) in the Region, as well as on other related aspects.

The collaboration of the experts from PAHO, the United Nations and the Inter-American System, and the academic world who participated in the initiative and formulated essential feedback and recommendations for the project to see the light is appreciated.

## Introduction

The 20th century was the scene of some of the most intense demographic changes in human history. For many centuries, high mortality coupled with high fertility rates was the rule, keeping populations stationary or growing very slowly. Mortality then began to fall, primarily in the early ages of life, followed by a steady decline in fertility, thrusting the population out of its previous equilibrium (7).

This process is known as “demographic transition”. Broadly speaking, the immediate consequence of this transformation at the beginning of demographic transition in every country was rapid population growth. In the initial stage, this growth was fueled by an increase in the young population, who no longer died as often at a very early age. Then, with the gradual and steady decline in fertility, the gradual changes in the population age structure intensified: countries witnessed a decline in the young population and an increase in the adult population both in absolute and relative terms.

In many countries, especially in Europe and North America, these changes began in the 19th century and generally spanned the entire 20th century. In Latin America and the Caribbean and many Asian countries, the process began more in the second half of the 20th century and has been much faster: demographic transformations are being observed in a single generation. This has led to a significant increase in the population of Latin America and the Caribbean, from around 63 million in 1900 to 179 million in 1950, reaching 516 million in 2000 (2), a 270% increase in the total population in the first half of the century and 300% in the second half.

The total population will continue to grow, though at an increasingly slower rate, until 2060, and the most profound demographic change in the first half of this century will be population aging – that is, the absolute and relative growth of the older population. At the beginning of the 1950s, older persons accounted for 5.6% of the population; in the 2000s, that figure reached 8.3%, and by 2050, it will be 25%. This means that, for the first time (around 2050), the population over 60 years of age will be numerically larger than the population aged 0-19 years. Around 2050, Latin America and the Caribbean will have almost 190 million older persons and a similar number of young people (176 million), equivalent to twice the subregion’s total population in 1950.

These figures reveal the scope of the challenges that countries are facing in the development of public policies that ensure a decent,

healthy life for their entire population in the context of increasing life expectancy and the need for special care and investment in the organization of health care and assistance services. Although the working-age population in Latin America and the Caribbean is still larger than other age groups, the subregion needs policies that will enable it to anticipate the effects of population aging. Indeed, changes in demographic indicators are closely correlated with human development processes and other transitions, such as the epidemiological transition. Compounding this demographic change are the persistent disparities in the subregion, since demographic changes have not occurred in a socioeconomic and cultural vacuum.<sup>1</sup> Since the population aging process will be very rapid and intense, the situation in the subregion is marked by many social, economic, and health challenges.

Population dynamics will not be independent of regional situations and structures. Demographic changes vary between and within countries and will continue to do so, due not only to geography but primarily to social and economic differences. As the Secretary of the Economic Commission for Latin America and the Caribbean (ECLAC) emphasizes:

Beyond the figures, the most troubling thing for the region is the scenario in which population aging is occurring, marked by inequality, poverty, an unsustainable economic growth model, and growing unemployment and low productivity. Faced with this, planning based on demographic scenarios is more important than ever, since, while there are variations, it provides a framework for making critical decisions for the development of our peoples (3).

Given these challenges, we must be aware of the major trends and follow the demographic indicators (based on core indicators such as mortality, fertility, and migration), their impact, and population profiles. It should be noted that the data used in this publication are taken from the estimates and projections of the 2019 report of the United Nations Population Division (4); therefore, the data from 2020 onward do not include

<sup>1</sup> The Latin American and Caribbean Demographic Centre (Economic Commission for Latin America and the Caribbean) has studied this analysis over the course of recent decades, making progress in recent years and publishing important documents. See Huenchuán S. (editor). *Envejecimiento, personas mayores y Agenda 2030 para el Desarrollo Sostenible: Perspectiva regional y de derechos humanos* Santiago, Economic Commission for Latin America and the Caribbean; 2018. 251 pp. Available from: [https://repositorio.cepal.org/bitstream/handle/11362/44369/1/S1800629\\_es.pdf](https://repositorio.cepal.org/bitstream/handle/11362/44369/1/S1800629_es.pdf); González-Olinto D., Sosa Z., Reboiras-Finard L. *Las dimensiones del envejecimiento y los derechos de las personas mayores en América Latina y el Caribe. Textos seleccionados 2009-2020. Páginas Selectas de la CEPAL.* Santiago, Economic Commission for Latin America and the Caribbean; 2021. 362 pp. Available from: [https://repositorio.cepal.org/bitstream/handle/11362/46730/1/S2000842\\_es.pdf](https://repositorio.cepal.org/bitstream/handle/11362/46730/1/S2000842_es.pdf). Economic Commission for Latin America and the Caribbean, Latin American and Caribbean Demographic Centre. *América Latina y el Caribe: Dinámica de la población y desarrollo.* Vol. 74, Cuadernos de la CEPAL. Santiago: Economic Commission for Latin America and the Caribbean, Latin American and Caribbean Demographic Centre; 1995.

the review conducted after the start of the coronavirus (COVID-19) pandemic and thus require careful interpretation. The authors opted to use annualized estimates, due to the enormous changes in the current decade, except in cases where quinquennial data are more appropriate.

This initial change in the population age structure offers countries an opportunity. The intersection of demographic and economic processes is essential for preparing for the next stage, in which a relative decline in the potential working-age population is expected, followed by a relative increase in the older population. In this context, the purpose of this publication is to present an analysis through the lens of population aging, with historical data and expected future trends, using population projections, which are especially important for understanding the current and future scenario facing the countries of the region in the Decade of Healthy Aging 2020–2030.

## Demographic transition

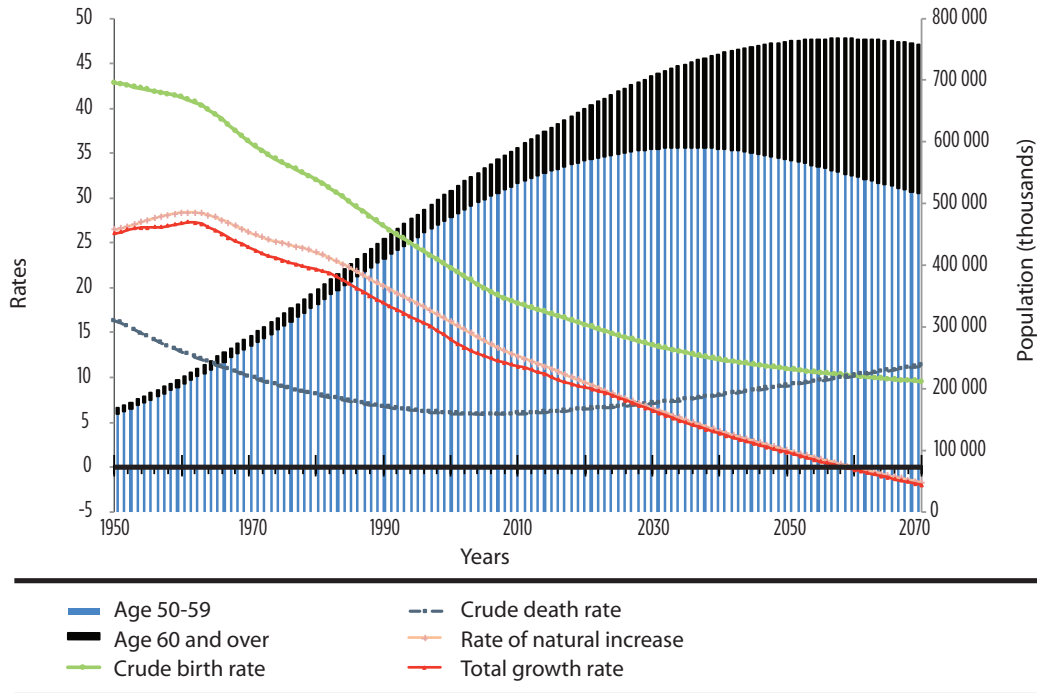
Demographic transition is a universal phenomenon that is very easy to broadly describe but complicated to explain. Every region and country in the world has already transitioned or is now transitioning from high levels of mortality and fertility to low levels, resulting in a change in population growth and profound changes in the population age structure over time. This phenomenon is primarily the result of the struggle for survival that characterizes the history of humanity. It begins with the sustained control of infant, child, and maternal mortality, which occurred mainly after the Industrial and Energy Revolution (5). At the beginning of the transition, greater child survival meant that fewer births were needed to guarantee the survival of generations. At the same time, the economic and social progress that fueled the decline in mortality further fueled the decline in fertility, but with a time lag, causing populations to grow at a rate unprecedented in human history.

Although demographic transition is a universal process, it occurs differently in every region of the world and between and within countries. While the most developed countries began their demographic transition in the 19th century, Latin America and the Caribbean began it much later (6). As a result of the demographic transition, the world population, which reached one billion only at the dawn of the 19th century, rose to three billion in 1960. It then doubled in a just a few decades to six billion in the 2000s, and using the medium variant, is estimated to reach 10 billion by 2050 (4).

Figure 1 presents the main demographic indicators for Latin America and the Caribbean for the period 1950–2070. It displays the trend in the crude death rate (blue line), birth rate (green line), and natural and total growth rates (pink and red lines, respectively) on the left axis and population figures in bars for two large age groups, on the right axis.<sup>2</sup> The series presented begin in 1950, the year when the most reliable data are available, and continue with projections to 2070, making it possible to observe when the population is expected to begin declining in absolute terms (4).

<sup>2</sup> Crude death and birth rates are affected by the population age structure, which, in turn, is affected by these rates. However, the trends in these curves and the population growth rate, along with the total population, paint a general picture of the most significant trends occurring during the demographic transition, as initially posited by Notestein. See Notestein F. *Population: the long view*. In: Schultz T. W. *Food for the World*. Chicago: University of Chicago Press; 1945.

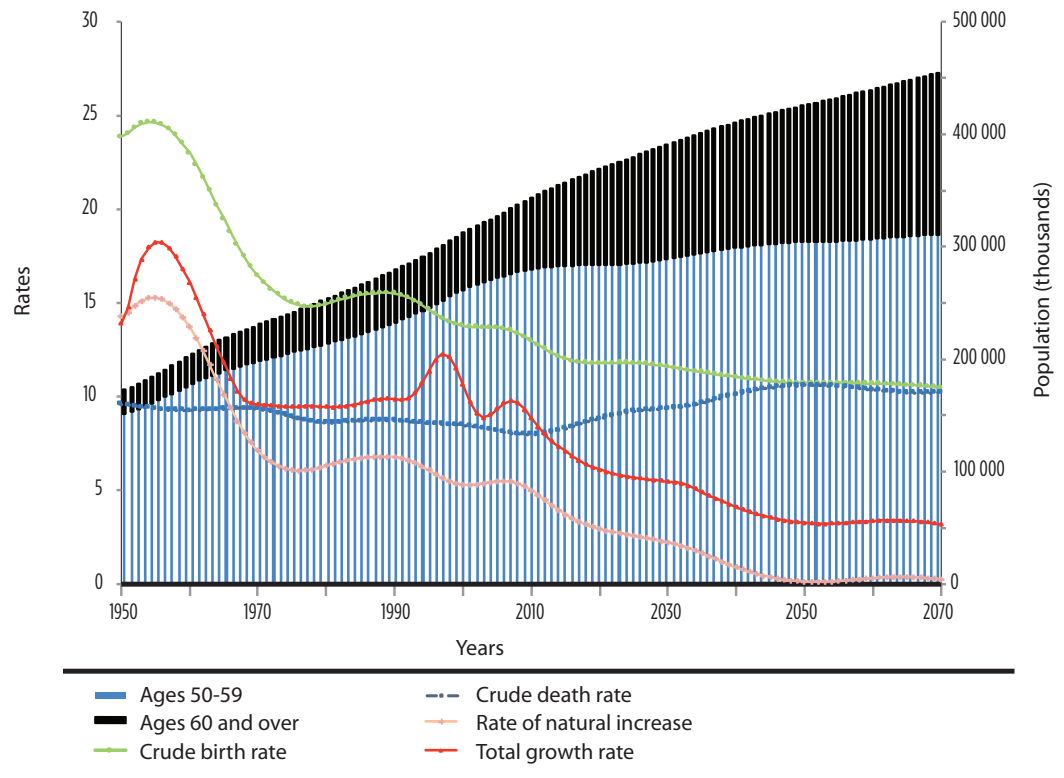
**Figure 1.** Latin America and the Caribbean: crude death and birth rates, total and natural growth rates, and total population, by age group, 1950–2070



Source: Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

Figure 2 presents the same indicators for North America. Comparing the two figures reveals marked differences in the trajectories of the demographic components over time in the subregions of the Americas.

**Figure 2.** North America: crude death and birth rates, total and natural growth rates, and total population, by age group, 1950–2070



Source: Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

Figures 1 and 2 show that, at the beginning of the 1950s, the two major subregions in the Americas had a numerically similar population of about 170 million, despite being at very different stages of the demographic transition: North America was already exhibiting relatively low mortality and birth rates, while Latin America and the Caribbean was just beginning to see a decline in mortality. The result, in terms of population growth, is that Latin America and the Caribbean arrived at 2020 with more than 650 million people and North America, with less than 370 million. The two large age groups also had different trajectories: the percentage of the population aged 60 and over in 1950 already stood at 12.3% in the United States and Canada, a figure that Latin America and the Caribbean reached only around 2020 (13%); at that time, population aging in North America was in an advanced stage, with an older population of 23.1%. However, given the rapid aging in the developing countries, Latin America and the Caribbean will arrive at 2060 with a percentage of older persons similar to that of North America; in both cases, the percentage of the population aged 60 and over will be nearly 30%. The speed of these changes in Latin America and the Caribbean poses real

public policy challenges in the subregion. The mounting wave shown at the top of the bars in Figure 1 leaves no doubt about the magnitude of the challenge that the subregion, with its social inequality, will face in the current decade.

It should be underscored that migration is a demographic component not mentioned in the description of the demographic transition. This component is having different effects on population aging in some countries of the subregion. The weight of migration generally appears in more advanced demographic transition processes. This can be seen in the case of North America, where the effects of immigration are evident (Figure 2), as it leads to a population growth rate higher than the natural growth rate (births minus deaths), with significant waves of immigration in the 2000s and 2010s. Just the opposite is seen in Latin America and the Caribbean: natural growth that exceeds the total growth rate because of the negative migration balance in the subregion.

The average for Latin America and the Caribbean masks very different processes in the subregion. There are subregions or countries in which migration has a highly transformative effect on the population and age structure. Due to the weight of their populations in the subregion, trends in South American countries mask significant events in the demographic transition of Central America and the Caribbean: first, the Caribbean began its transition earlier than other subregions; and second, the demographic dynamics of migration have undergone a major shift since the start of the transition.<sup>3</sup> In fact, the departure of many young working-age people has accelerated aging in the subregion, although the countries do not all follow the same transition model (see Appendix 1, Figures A1.1-A1.3). It should be noted that migrants from the subregion are largely bound for countries in North America, mainly the United States.

This depiction of the demographic transition clearly illustrates several interrelated processes but does not show the changes in age structure, which, in turn, are related to trends in the crude death and birth rates. It is important to recognize the changes that have taken place in the net mortality and birth rates due to the effects of the changing age structure in the countries and over time. The next sections describe past and future mortality trends (projections), with emphasis on indicators of infant mortality, life expectancy at birth, and total fertility rate.

<sup>3</sup> As Solari (1957) has shown in a pioneering study of Latin America using Uruguay as an example, migration can play an important role in the demographic dynamic of countries with low populations. This is true in many Caribbean countries. See Solari A. El fenómeno del envejecimiento de la población uruguaya. *Revista Mexicana de Sociología*. April-June 1957; XIX(2); Chackiel J. Latin America: América Latina: ¿hacia una población decreciente y envejecida? *Population Papers*. 2006;12(50):37-70. Available from: <http://www.redalyc.org/articulo.oa?id=11205006>.

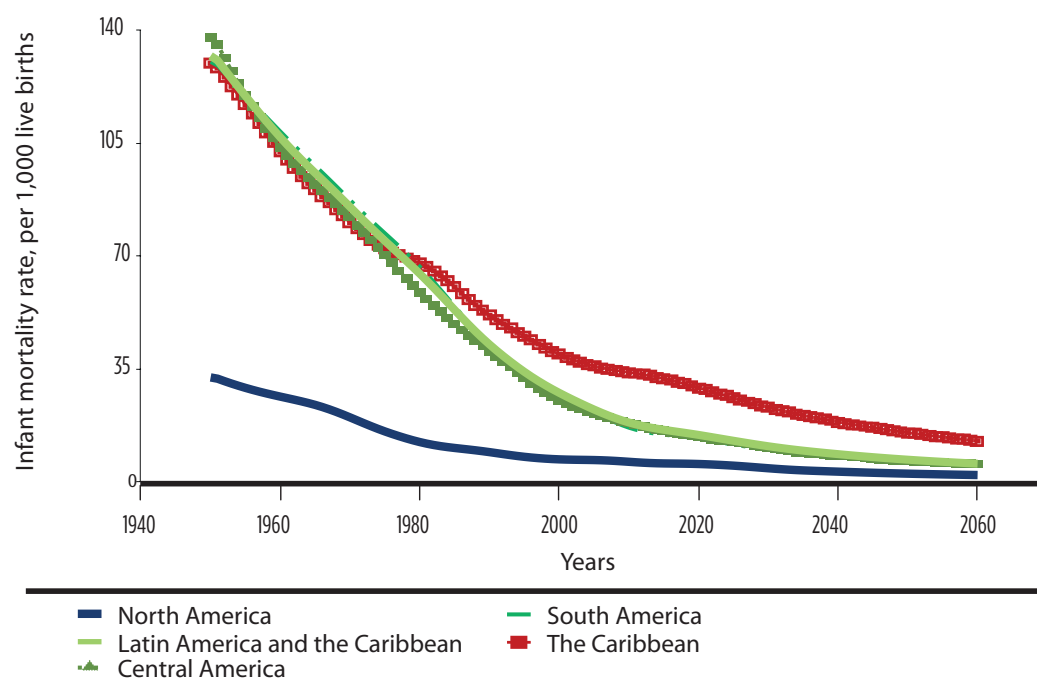
## Mortality and life expectancy

The decline in mortality, fueled particularly by the decline in infant mortality, has been a major factor in the demographic transition process in many countries around the world (see Appendix 2). Even without the increase in socioeconomic development and despite the significant economic inequality, the extremely rapid survival gains in Latin America and the Caribbean after the first half of the 20th century are also associated with other factors, such as expanded coverage of maternal and child care, higher levels of maternal education, a decline in fertility, and expansion of basic sanitation services through investments in public policies that contributed to a rapid decline in infant mortality, even in the economically disadvantaged population (7).

It should be noted that the immediate consequence of the decline in early mortality was an increase in the base of the age pyramid, which contributed to a rejuvenation of the population. The decline in mortality at older ages, in contrast, contributed to population aging and to internal aging of the older age group. Notwithstanding, the literature recognizes that the gains in years of life that subsequently led to population aging were largely due to the rapid drop in infant mortality (8), among other reasons for the particular features of population aging in the subregion. Average infant mortality in the subregion in 1950 was 130 deaths per 1,000 live births, with almost 140 per 1,000 in Central America. Over a 50-year period, this has fallen to less than 30 per 1,000 (Figure 3), with a substantial increase in the average number of years expected to live at birth.

The reduction in mortality is undoubtedly one of humanity's exceptional achievements. It has occurred at different rates among the different continents and countries, and also within countries, depending on their degree of development and, more importantly, their public policies--especially in health. In a comparative study, Arriaga and Davis (9) observed that prior to 1930, the mortality transition process had led to a widening of the gap between mortality rates in high- and low-income countries, as less developed countries had high stagnant rates for longer periods of time. Beginning in the 1930s, the gap began to close and the levels of the more advanced and most economically lagging countries began to converge.

**Figure 3.** Region of the Americas: infant mortality rate, by subregion, 1950-2060

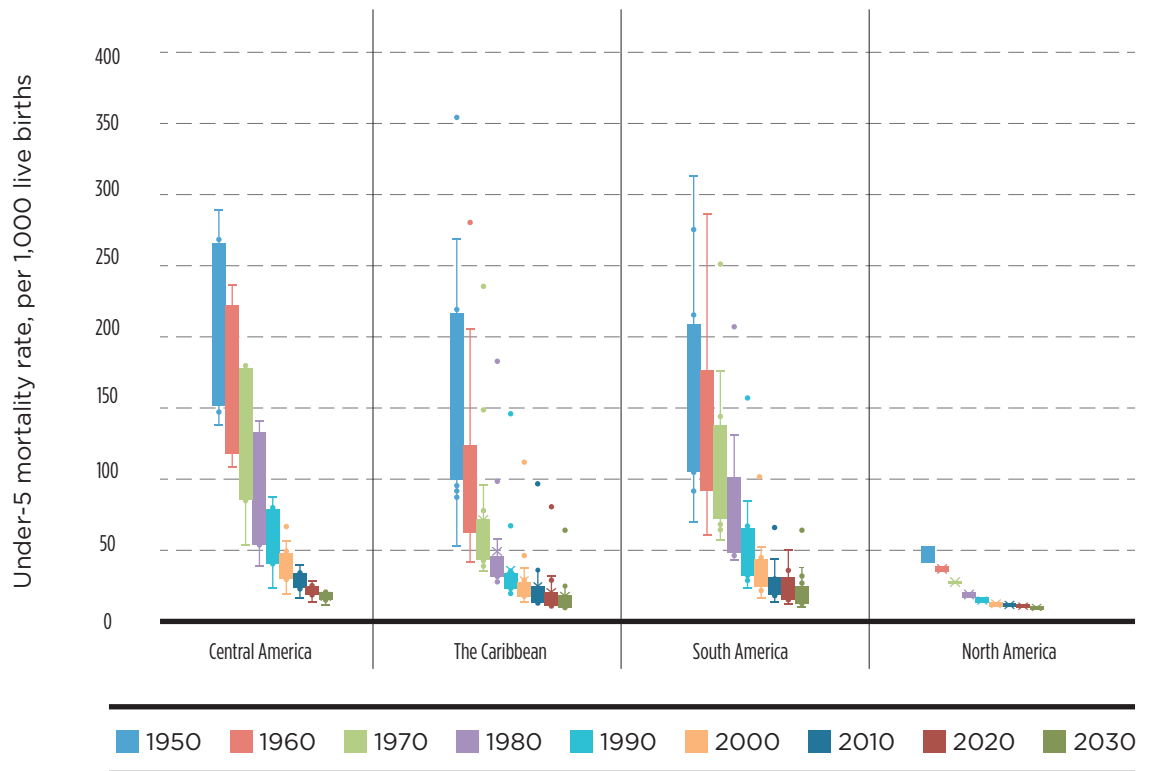


Source: Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

In the Americas, this can be seen in part when comparing infant mortality trends in the subregions of North America and Latin America and the Caribbean (Figure 3). In 1950, the United States and Canada already had infant mortality approaching 30 deaths per 1,000 live births, falling to just under 10 per 1,000 in 2000. All subregions in Latin America and the Caribbean continued to exhibit a steep decline in infant mortality until the 1980s, when some Caribbean countries deviated from the regional trend due to the reemergence of diseases that had practically been controlled with immunization, though infant mortality continued to fall. From the 1990s to the early the 2010s, Latin America and the Caribbean met the goal of reducing infant deaths, mirroring the decline in the subregion’s largest countries (Brazil, Mexico, and Peru), as well as the Plurinational State of Bolivia and El Salvador, which still had very high infant mortality rates. In 2020, much still remained to be done and, as the rate fell, it became harder for countries to eliminate the barriers to achieving rates comparable to those of the developed countries. Exceptions to this were Antigua and Barbuda, Chile, Costa Rica, and Cuba, whose rates were already rather low. Today, the challenge of very high rates persists in Haiti and countries with substantial increases in the infant mortality rate, such as the Bolivarian Republic of Venezuela, where rates have been rising since 2010 after reaching relatively low levels (4).

It should be noted that although current levels are historically low, there are still major disparities in infant mortality among the countries of the Region. Moreover, with the rapid decline in infant mortality, there has been a shift in mortality to children over 1 year of age – hence, the importance of monitoring mortality indicators beyond the first year of life. Figure 4 presents a boxplot with the distribution of mortality in the under 5 population per 1,000 live births for 1950-2030, by subregion. The extreme values, primarily in Caribbean countries, are strikingly higher than those of developed countries in the mid-20th century.

**Figure 4.** Region of the Americas: mortality rate in children under 5, by subregion, 1950-2030

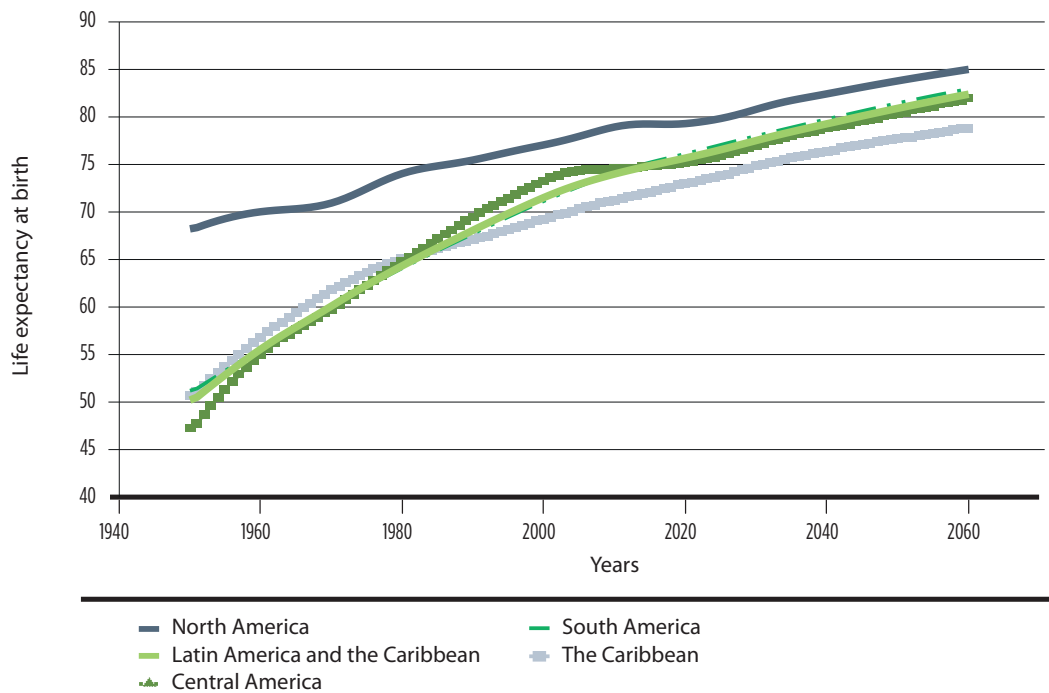


*Source:* Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019, New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0.2019>. Nueva York: Naciones Unidas; 2019. Disponible en: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

Even more impressive is the scale and speed of the decline, which resulted in the homogenization of rates across all subregions (Figure 4). Nevertheless, while today, countries such as Cuba, Costa Rica, Chile, and Uruguay have infant mortality levels close to those of the United States and Canada, others, such as Haiti, the Plurinational State of Bolivia, and the Bolivarian Republic of Venezuela, still face significant challenges, with rates that the developed countries fell below more than 50 years ago.

Following the inverse of the infant mortality rate, life expectancy rose dramatically during the mortality transition period and is considered one of humanity's major achievements in the 20th century. Before 1870, global life expectancy at birth was less than 30 years (10), since, as noted above, many died during the first few years of life. Average life expectancy at birth worldwide in 1950 was 45.7 years and by 2020 it had risen to nearly 73 years. Even so, in 1950, Latin America and the Caribbean was already above the world average, with a life expectancy at birth of 50.2 years that reached 75.6 years in 2020 -an increase of almost 1.8 years per quinquennium.

Regional averages mask the internal variations in subregions (Figure 5) and countries. All subregions of Latin America had a life expectancy at birth that was very close to 50 years in the 1950s, but from the 1980s onward, the Caribbean, which had had the highest values during that period, lagged behind the regional average, reaching 72.9 years in 2020.

**Figure 5.** Region of the Americas: life expectancy at birth, by subregion, 1950-2060

Source: Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

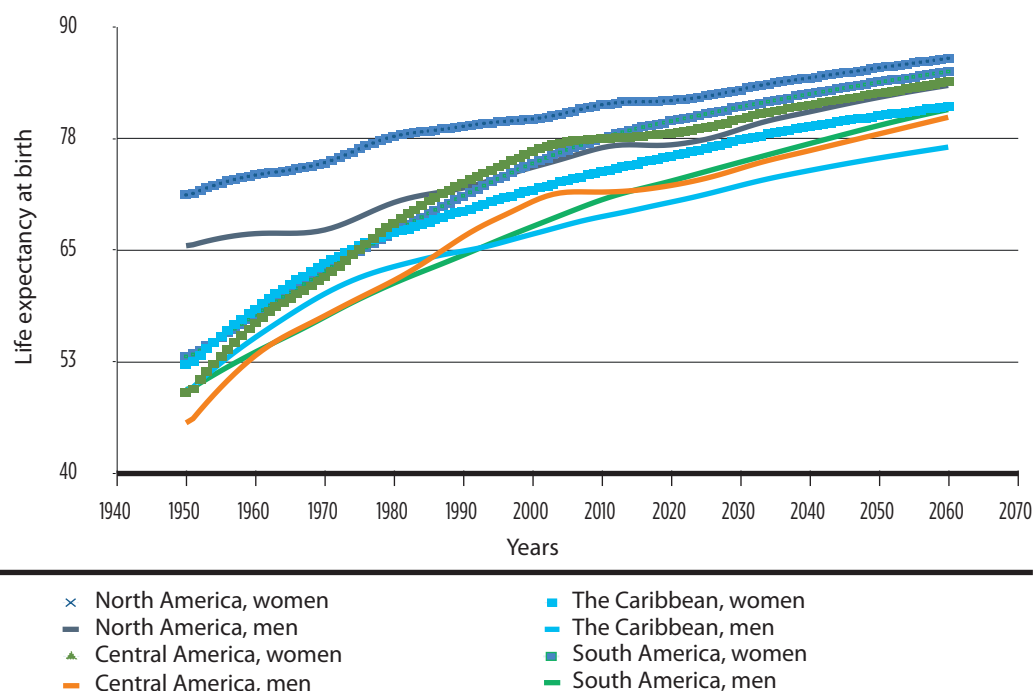
In Central America, the opposite trend was observed. The subregion, which in the 1950s had the lowest levels of life expectancy at birth, with countries still at the start of the demographic transition, had a life expectancy at birth that was higher than the regional average in the 1980s (Figure 5), trading places with the Caribbean in terms of the regional average and reaching an estimated average value of 75.1 years in 2020. It should also be noted that in South America, the gap with the developed countries of North America in terms of expectancy at birth (76.1 vs. 79.2 years) narrowed over time.

While regional differences have been diminishing over the decades, differences in years of life across countries persisted in 2020—unjustifiably, given the potential for gains in health care and disease control. Among the most and least advanced countries in the mortality transition in 2020, people living in Costa Rica and Chile can expect to survive 16 years longer from birth than those in Haiti and 8.5 years longer than those in the Plurinational State of Bolivia (4).

Geographic averages not only mask significant differences in the probabilities of survival but other sociodemographic characteristics, such as sex, which gives women a significant advantage over men. Figure 6 presents the distribution of life expectancy at birth for men (solid lines) and women (dotted lines) in the subregions of the Americas.

It is clear that, except in North America, men remain below the curves for all women, regardless of the subregion they live in. Thus, while the Caribbean has been the subregion with the shortest life expectancy in the Region since the 1980s, women there can expect to live longer than men in Central or South America. In this comparison, men living in the Caribbean in 2020 had the shortest life expectancy of all—9 years lower, on average, than women in South America, and 11 years shorter than women living in North America. Men in the Caribbean lagged behind women in South America by more than 31 years and some 26 years behind women in their own subregion. In addition to higher mortality among children under 5, excess male mortality due to violence and external causes partially explains these differences.

**Figure 6.** Region of the Americas: life expectancy at birth, by subregion and sex, 1950-2060



Source: Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019, New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

## What to expect in mortality trends in the coming years

Before the COVID-19 pandemic, United Nations projections estimated that life expectancy would continue to increase, always in the direction of convergence. The countries lagging farthest behind would experience steeper declines than the developed countries and would even narrow gender gaps. For example, looking at the 2060 horizon, the 2019 projections for Latin America and the Caribbean suggested that women would survive almost 85 years from birth, on average, and men, 80 years. Furthermore, as infant mortality would significantly decline, as occurred after the agreements on the Millennium Development Goals, it was expected that increased survival at advanced ages would become a major trend in societies. However, the emergence of a pandemic of a serious infectious disease that significantly affected the older population (11), calls into question the implications for mortality--that is, whether the pandemic will have a short-, medium-, or long-term impact on the population--making it hard at this time to answer the question about future mortality trends, both in the Region and around the world.

From a theoretical standpoint, the expectation in the final stage of the mortality transition is that degenerative diseases will begin later in people's lives (6), further increasing survival. However, in addition to the possible limits of this, the recurring question is whether an increase in life expectancy and survival will be accompanied by an increase in healthy life or, on the contrary, an increase in years lived with some impairment or chronic disease. In order for years of healthy life to increase, the hypothesis of morbidity suppression would have to be true--that is, that the age of chronic disease onset in the population would have to be higher than the age of death, shortening the period lived with chronic disease. This remains an unanswered question due to lack of adequate data for analysis, currently compounded by the momentary uncertainties created by the COVID-19 pandemic. Reliable data for estimating life expectancy in Latin America and the Caribbean are still scarce, despite improvements in civil registry and vital statistics systems, but there are some estimates, albeit preliminary. In the case of Chile, Aburto et al. (12) estimate that official reported deaths from COVID-19 will cause a loss of more than one year of life expectancy at birth in 2020 for both women and men--levels comparable to five years prior to the pandemic. The effects of the COVID-19 pandemic in 2021 were even more pronounced than in 2020, so the decrease in life expectancy at birth in the heavily impacted countries is expected to be even more marked at the beginning of this decade. With their estimates for Brazil, Castro et al. (13) show that COVID-19 deaths will

cause a 1.3-year reduction in life expectancy at birth that will be greater for men (9%) than for women. Even more important, perhaps, are regional estimates showing that the impact in the Amazonia region was 60% higher than the national average. In addition, the authors go even farther and state that if deaths in 2021 follow the 2019 pattern, the loss in years of life expectancy at birth in Brazil would be 1.8 years. Box 1 provides an overview of the impact of the COVID-19 pandemic on life expectancy at birth.

Specifically, preventing premature deaths in children and increasing adult life expectancy in the adult population are essential for guaranteeing that most basic of human rights: the right to life. However, they are also prerequisites for building an educated, productive, and capable workforce - matters that were less of an issue when people had very short life expectancy. There is no doubt that the reduction of mortality is one of humanity's greatest achievements; with the progress achieved in prolonging life, an increase in healthy life must also be achieved, in order to tackle the challenges of population aging itself and to be better prepared for future health crises.

In any case, an increase in life expectancy at birth like the one that occurred rapidly in the Region directly impacts population aging in two ways: first, by increasing the number of older persons, due to the increase in survival, and second, through population aging (that is, increasing the average age of the older population). An additional indirect effect is to allow fertility to decline, which in turn, will directly affect population aging. In fact, the direct effect of decreasing fertility is what determines population aging, with the base of the age pyramid (14, 15) in a rapid relative decline (the young population vis-à-vis the older population), inverting the shape of the pyramid. It is therefore important to understand the fertility transition in the Region, as well as its expected differences and trends in the future.

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**Box 1.** Effects of the COVID-19 pandemic on life expectancy at birth.

Life expectancy is a valuable indicator, primarily during a demographic transition with many changes in the population age structure, as it is a net indicator of the effects of the different proportions of people of different ages (mainly older ages) on mortality rates. If the data are correct, estimating life expectancy will yield the precise dimension of the odds of surviving or dying in each age group or from birth. Overall, it is estimated with current data and refers to synthetic cohorts, since it includes both people who have had and people will have different odds of surviving (or dying) at different ages and in different contexts. In any case, using this indicator is the best way to compare the mortality of countries and population groups with such different age structures. However, its estimation requires knowing the number of deaths and population by age and sex in the relevant population group. During the COVID-19 pandemic, this indicator helps us compare age-standardized mortality risks (considering the other risks of dying through the different composition of causes of death). The expectation is that if there are many deaths beyond those expected in population projections, life expectancy at birth and even survival at certain ages will fluctuate. The pandemic is therefore expected to decrease life expectancy at birth and survival in all countries (and population groups), and fluctuations will be wider and longer-lasting depending on the incidence of deaths from COVID-19 and how it may have directly or indirectly affected the composition of causes of death.

In this context, despite the indicator's limitations, in addition to the uncertainties surrounding the quality and timeliness of the statistics necessary for estimating life expectancy, some answers can be sought to the question of how the COVID-19 pandemic has affected the life expectancy of the Region's population. With regard to life expectancy at birth, the Demographic Observatory of the Economic Commission for Latin America and the Caribbean has reviewed literature with estimates of the effects of deaths from COVID-19 and concludes that, if the prevalence of the virus is 5%, countries may lose some 0.3 of 0.7 years of life expectancy at birth. With a prevalence of 10%, the years of life expectancy lost range from 0.7 to 1.4.

Future changes in life expectancy at birth, and even more accurate estimates, will be observed in the coming years. Meanwhile, health care and policy implementation should not wait for these answers, since these changes are highly unlikely to greatly affect the intensity of population aging.

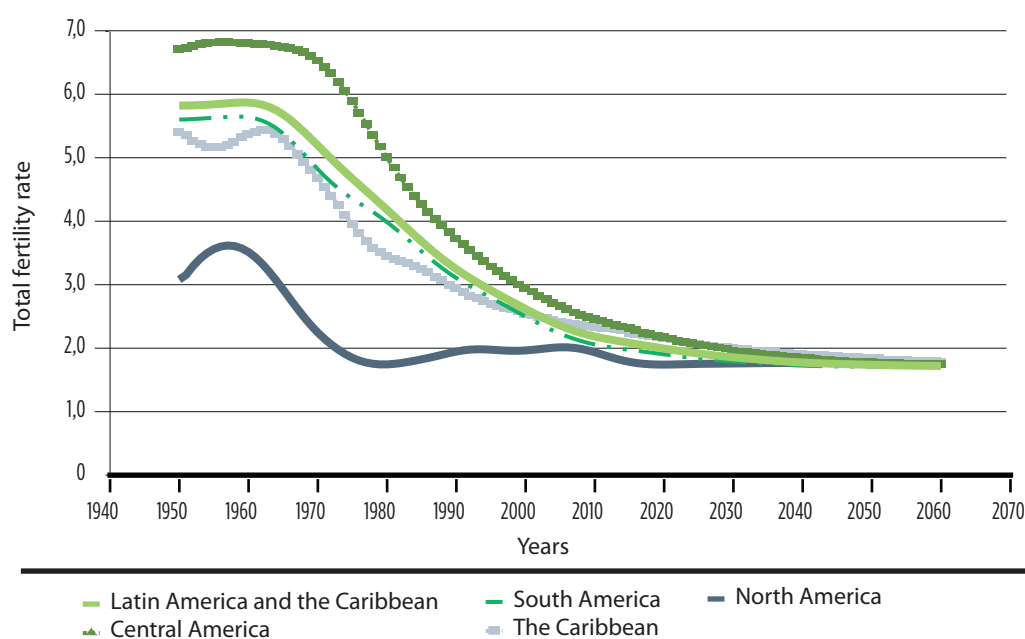
*Source:* Based on Economic Commission for Latin America and the Caribbean. Demographic Observatory, 2020. COVID-19 Mortality: Evidence and Scenarios. Santiago, Economic Commission for Latin America and the Caribbean; 2021. 49 pp. Available from: [https://repositorio.cepal.org/bitstream/handle/11362/46641/S2000897\\_en.pdf?sequence=4&isAllowed=y](https://repositorio.cepal.org/bitstream/handle/11362/46641/S2000897_en.pdf?sequence=4&isAllowed=y)

## Fertility trends

As with mortality, sharp changes in fertility began to be observed in other regions of the world. Some explanations of this phenomenon can be found in Appendix 3. Figure 7 shows the trends in the total fertility rate in the subregions of the Americas and the average number of children that women will have if the age-specific fertility rates of the considered period persist until the end of their reproductive cycle. While some countries have slightly more reliable historical series (though for other fertility indicators, not the total rate), it was not until 1950 that a broad, more consistent, and regular comparison of all countries could be made, with observed data, as well as projected data for the coming decades (4). This half-century time frame provides an almost complete history of the fertility transition in Latin America and the Caribbean,

showing that the subregion started out with an average of 5.8 children per woman and reached the replacement level in the first half of the 2010s. In contrast, the rate in North America in the 1950s was around three children per woman, but this was due to a temporary rebound in the post-World War II period, having reached replacement level in 1940 after a fertility transition that had taken at least 150 years.

**Figure 7.** Region of the Americas: total fertility rate, by subregion, 1950-2060



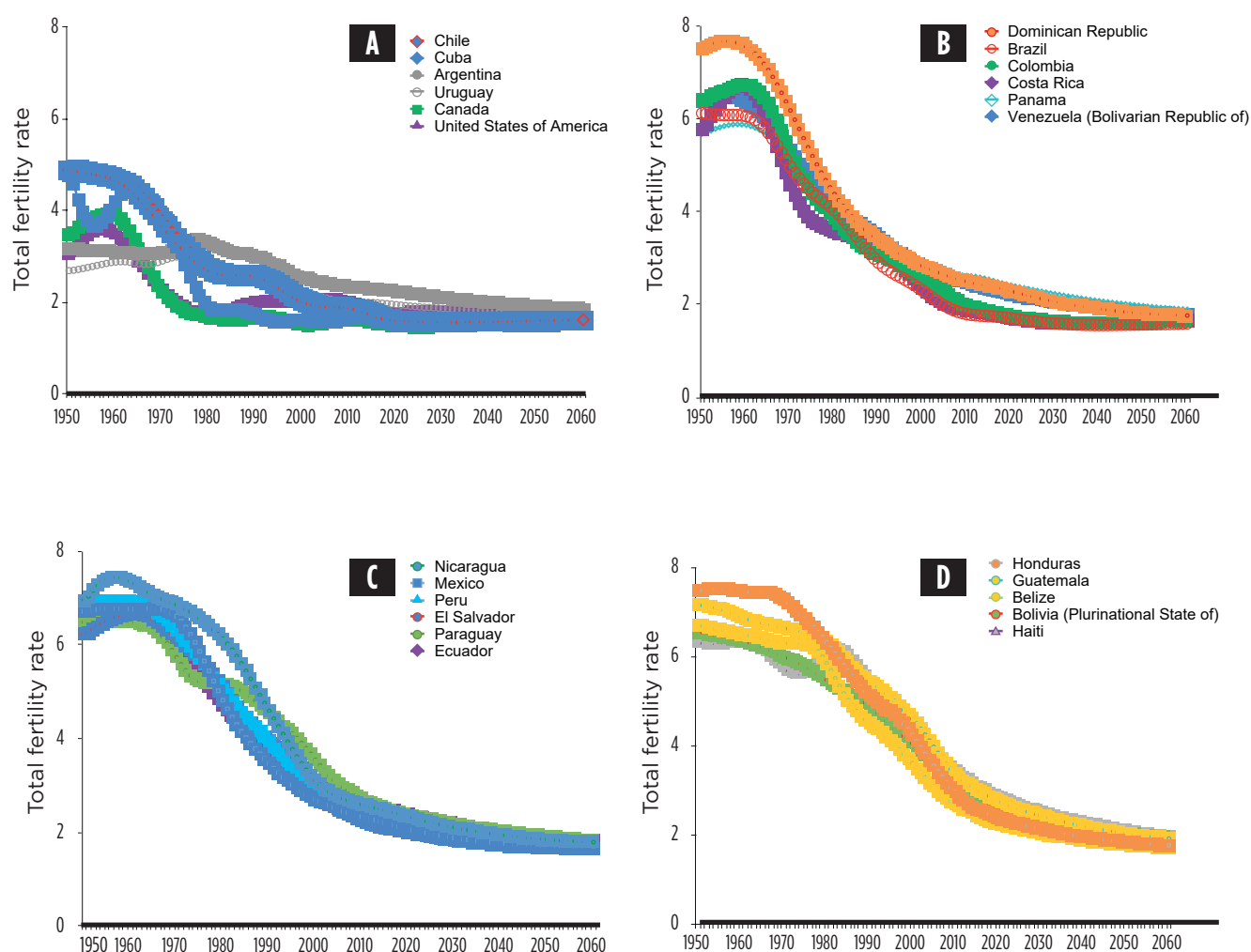
Source: Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

The subregions of Latin America and the Caribbean began the transition in the 1960s at around six children per woman. The exception was Central America, which, in addition to having the highest fertility rates (seven children), did not begin the transition until the 1970s. The decline in the total fertility rate in Latin America and the Caribbean was very steep in all subregions; however, the Caribbean, which had the lowest level (5.4 in 1950), underwent a very intense initial transition, with rates below the regional average in the 2000s, but then remaining above the regional average along with Central America. Although with small differences, all the subregions followed a path toward the homogenization of their fertility levels in 2020. Based on the average assumption of the projections, their values are expected to become more similar in the 2030s and beyond, with the assumption that all the subregions will have a total fertility rate below replacement level until the mid-2030s.

There are examples of different country trajectories in all subregions in terms of the year and initial level, speed of decline, and expected total fertility level in the final stage of the fertility transition. Figure 8 groups four types of trends in the total fertility rate for selected countries in Latin America and the Caribbean in an attempt to systematize the most salient aspects of the evolution of the fertility transition in the countries of the subregion. The first group (Figure 8 a) consists of countries that began the fertility transition before the 1960s (e.g., Uruguay and Argentina in South America), with fertility rates around three children per woman in 1950, increasing slightly from 1970 to 1980, mainly in Argentina, with a slow decline beginning in the 1990s. Two other countries that already had a lower total fertility rate before 1960 were Chile and Cuba. Each had different trajectories, but Chile began the transition in the 1960s, closely following the trends of Uruguay and Argentina for several years, and advancing more rapidly toward the final stage of transition. The trends in these countries are very similar to those of Canada and the United States prior to the 1960s.

The second and third groups (Figures 8 b and c) include countries that started out with high fertility rates in the 1960s or early 1970s but experienced a rapid rate of decline. This group includes Brazil, Colombia, Costa Rica, and the Dominican Republic (Figure 8 b). The third group had a slightly slower rate of decline at the start and includes countries such as El Salvador, Mexico, Nicaragua, and Peru. The last group (Figure 8 d), consists of countries that began their transition a little later but experienced a rapid decline in the 1980s and 1990s and were the farthest behind in the fertility transition: Belize, Guatemala, Haiti, Honduras, and the Plurinational State of Bolivia.

**Figure 8.** Region of the Americas: total fertility rate, by selected countries, 1950-2060



Source: Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>

Considering the level of the total fertility rate in 2020, the countries of the Region can be divided into the following groups:

1. Replacement countries (2.1 children per woman): 23 countries, 14 of them in the Caribbean (including Cuba, Barbados, Jamaica, and Trinidad and Tobago); three in Central America (Costa Rica, El Salvador, and Mexico), and four in South America (Brazil, Chile, Colombia, and Uruguay).
2. Countries near replacement level (2.6 children per woman): 13 countries, two of which are in the Caribbean (the Dominican Republic and Guadeloupe); four in Central America (Belize, Honduras, Nicaragua, and Panama), and seven in South America (Argentina, Ecuador, Guyana, Paraguay, Peru, Suriname, and Venezuela (Bolivarian Republic of)).

3. Countries far from replacement level (more than 2.6 children per woman): four countries, one in the Caribbean (Haiti); one in Central America (Guatemala), and two in South America (Plurinational State of Bolivia and French Guiana).

A very important aspect of the changes in fertility in the Region is that they occurred differently than in developed countries. In the countries of the world that had not begun the fertility transition, in addition to taking many years to complete the different stages of the transition, changes began with the spacing of children or having the first child later; however, women of reproductive age continued to have children throughout their fertile period. In Latin America and the Caribbean, in contrast, the transition was generally due to the deliberate termination of fertility at an early age –that is, women reached their desired family size when they were very young and ended their reproductive lives, thus generating a very young fertility pattern.

Figure 9 compares the age-specific fertility rates of women in Latin America and the Caribbean, Europe, and selected countries in Latin America and the Caribbean at three points in time: at the beginning of the transition, in the current period (2020–2025), and in the future (projections for the period 2055–2060). The values for the total fertility rate are shown in parentheses in the legends. The decline in fertility through the deliberate cessation of reproduction can be clearly observed in Latin America and the Caribbean, Brazil, and Chile. This differentiated process was what led fertility to reach replacement level in a brief period of time before women reached the end of their reproductive period in each generation. This, in turn, is what has largely determined the rapid rate of population aging. In Latin America and the Caribbean, there are very large differences in the average number of children born between two generations of mothers and grandmothers. This has consequences not only for population aging but personal aging, which significantly affects family relationships and care networks.

Future trends in fertility, presented here with projected data on its level and age composition, are likely to change somewhat due to the effects of COVID-19. At first, as in other health crises or periods with other types of difficulties, the initial impact consisted of fluctuations in the number of births for brief periods after the crisis. Like life expectancy at birth, total fertility rate is a period indicator, constructed using a synthetic cohort standardized by age groups of women of reproductive age. Thus, while fluctuations in births may alter the levels of the total fertility rate, they do not necessarily alter the number of children born to the different cohorts until the end of their reproductive period.

The COVID-19 pandemic has very specific characteristics that may introduce uncertainties in human reproductive behavior; this, together with other current changes, could produce changes in the estimated trends in some countries.

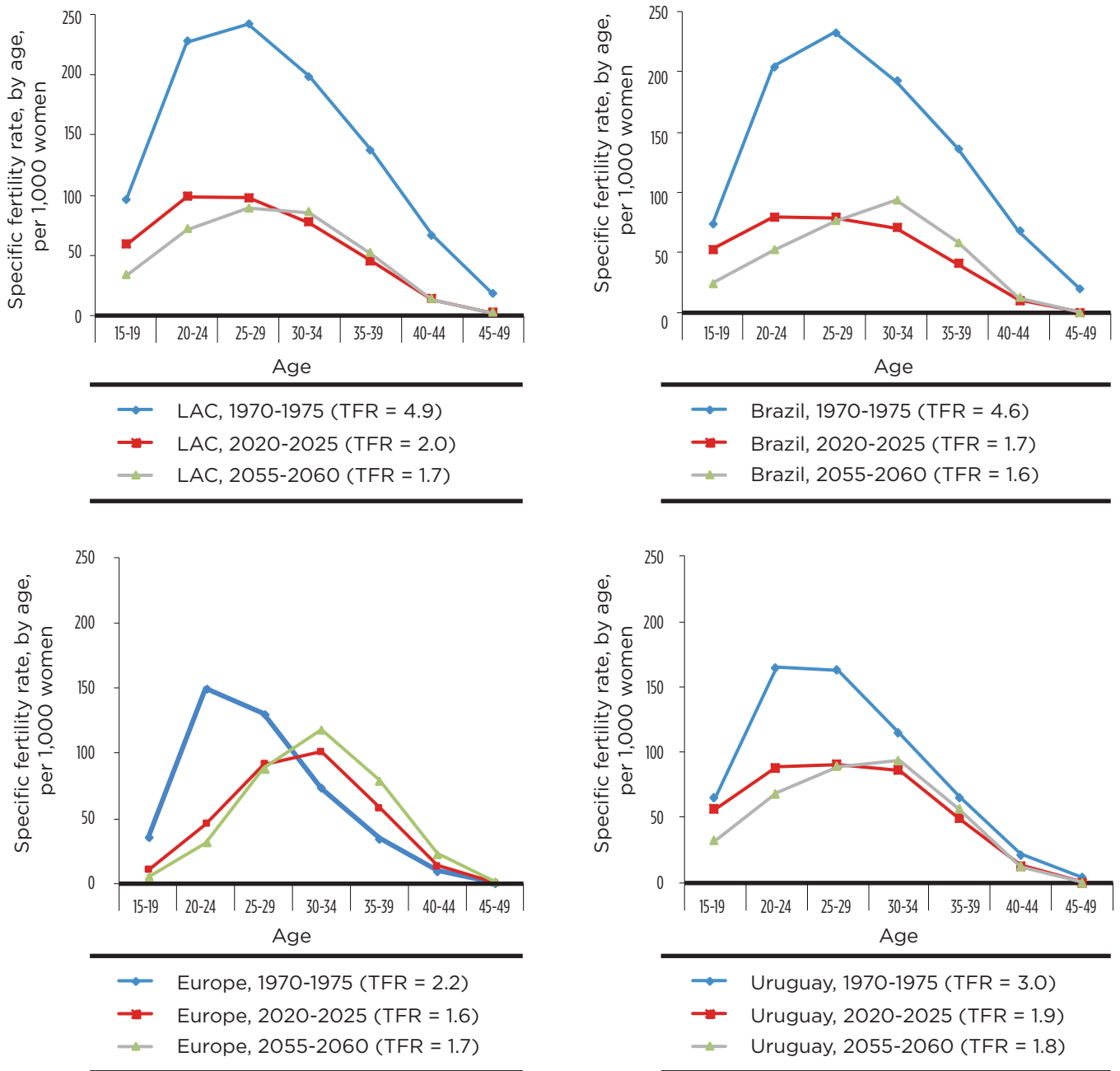
There are several views regarding the potential effects of the COVID-19 pandemic on fertility, which include both a potential decrease and a potential increase in the average number of children<sup>4</sup>. In the most developed countries primarily, there is a great deal of uncertainty about the future, heightened by the climate crisis, fear that pregnancy would put women's lives at risk during the pandemic, difficulty accessing health services (including those for assisted reproduction), other economic problems and repercussions in the labor market, and social and psychological problems, with family disruptions due to social isolation. All these factors could drive women to postpone births or even decide not to have children. Furthermore, disruptions in the contraceptive supply chain, mainly those for spontaneous use, together with more time spent under the same roof, could lead to an increase in births due to contraceptive failure. The intensity of such occurrences could vary in each of the countries, depending on a number of factors, such as the severity and duration of the epidemic, but also on the economic development level, structure of the health system, and timely policy responses to pandemic outbreaks (16).

What has been observed in practice is that the majority of countries experienced a decline in fertility or that the expected trend continued. It is important to note that timely quality data for these analyses are concentrated in higher-income countries and that the vital records and statistics systems in some countries were disrupted, causing delays in birth registration. Therefore, it is too early to determine the pandemic's effects on fertility in Latin America and the Caribbean. In countries where information is available, a decrease in births was observed during the first wave of COVID-19 (17). There are signs that fertility will decline in 2021, but births are likely to rise and fall with the different waves of severity in the countries; it will depend on the lasting direct and indirect consequences of the pandemic on health and the economy.

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4 In May 2021, the United Nations Population Division held a panel discussion on the potential impact of the COVID-19 pandemic on global fertility and short- and medium-term population projections. The preliminary documents presented are available from <https://www.un.org/development/desa/pd/event/egm-impact-covid-19-fertility>.

**Figure 9.** Latin America and the Caribbean, Europe, and selected countries (Brazil and Uruguay): specific fertility rate, by age, 1970-1975, 2020-2025, 2055-2060



Notes: LAC: Latin America and the Caribbean; TFR: total fertility rate.

Source: Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

As we have seen, the changes in mortality and fertility in Latin America and the Caribbean have been significant and rapid. While there may be some inaccuracies in the historical data and some estimation errors in the projections for the coming years, the behavior of these two

demographic components can be used to identify future trends in the population age structure. These changes will pose challenges to society as a whole, but mainly in public policy-making, which must consider the transformations already under way and those yet to come. The entire subregion is currently in the final stage of the demographic transition. Demographic inertia is expected to transform the age structure in the coming years, though in some countries migration is also beginning to have a substantial impact, increasing the challenges for public policies designed to maintain good, healthy living conditions leading to healthy population aging.

## Role of migration

Migration is one of the hardest phenomena to document. On the one hand, migrant flows can change very quickly for different reasons, without a timely and accurate way to document them; on the other, some population movements between countries are not documented, creating additional challenges for demographers who wish to obtain timely, accurate data. Typically, many countries estimate migration only by indirect methods using census data, or else estimate net migration without knowing the magnitude of inbound and outbound flows at specific times. Estimates of migration's effect on population growth or decline are often based on the difference between inertial growth and total growth, using different data sources <sup>5</sup>. Thus, the migration estimates and projections below should be viewed with particular caution.

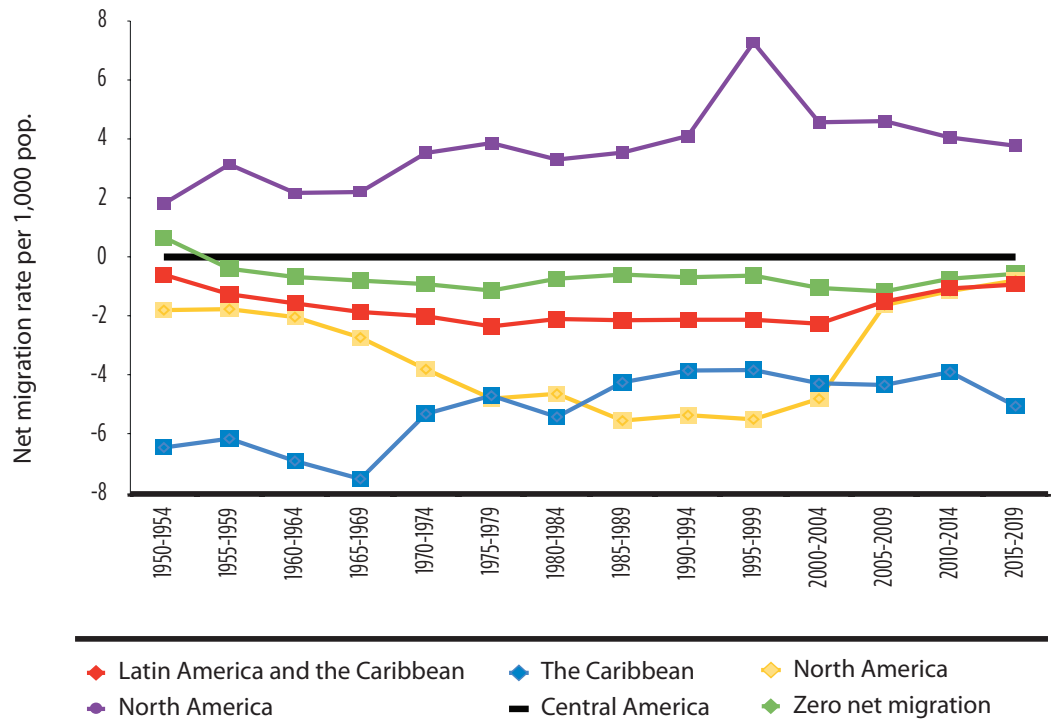
International migration has played different roles throughout the demographic transition in the Americas in terms of the volume of migrant flows, affecting population decline or growth, according to the social and economic characteristics of the migrants. With regard to population aging, in general, countries that lose population undergo greater population aging, since for the most part, the population that emigrates has a lower median age than the population that remains (18).

The net migration rate for 1950-2020 (Figure 10) shows that international migration has accelerated aging, though its effect is small compared to that of inertial growth, as the rate reflects a net loss of about two per 1,000 inhabitants. The Caribbean is the subregion with the greatest losses: six out of every 1,000 inhabitants were lost to migration until the 1970s; the rate was slower in subsequent decades, but with a clear uptick in the past quinquennium (2015–2020). Central America has also lost population to emigration but with a different

<sup>5</sup> Growth rates were compared at the beginning of this chapter, along with crude death and fertility rates, but they are based on census data whose coverage may vary over the years.

trend than the Caribbean, as it reported greater negative net migration from the 1970s to the 2000s. Figure 10 clearly shows that the only subregion in the Americas with positive net balances is North America, which, in fact, is the destination of many of the migrants who leave Latin America and the Caribbean.

**Figure 10.** Region of the Americas : net migration rate, by subregion, 1950-2020



Source: Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

Before the COVID-19 pandemic, migration issues were the focus of growing attention due to changes in the intensity and diversity of migrant flows. In Latin America, the flow of people entering Colombia, Peru, and Brazil from the Bolivarian Republic of Venezuela from 2015 to 2020 increased considerably. There is also a more intense flow from Peru to Chile. In North Central America, there has been a decrease in the net flow between Mexico and the United States, but there are significant movements from Central America and some Caribbean countries to the United States that will have significant effects on population aging, especially in the countries of origin. Better data are needed to measure these. Humanitarian and environmental crises also lead to greater flows of displaced populations seeking asylum or refuge in other countries; these flows have doubled over the past two decades

and account for 12% of all people living in a country other than their country of birth (19).

The COVID-19 pandemic has had an enormous impact on people's mobility around the world due to border closures, and it still affects the lives of people who had planned to live in another country. Like the two other components, mortality and fertility, there is not enough input and data to determine the full extent and duration of the pandemic's effects. However, it is estimated that as of mid-2020, the number of migrants had fallen by two million (19). With the gradual border openings after the first wave of COVID-19, flow estimates for all countries are expected to follow the earlier projected trends; even so, it is still too soon to speculate about these trends and their effect on population aging.

## Regional overview of the demographic transition

The stage of the countries' demographic transition can be determined by considering not only births and deaths but net migration as well. In the past, the most common way of classifying the developing countries of Latin America and the Caribbean was to use the crude birth and crude death rates (20), which proved a useful classification at the time<sup>6</sup>. Today, when virtually every country is in a full or advanced stage of transition, with significant changes in its age structure (which affects the number of births) and increased deaths in adulthood (a relative increase in the older population), the indicators used for classification are the total fertility rate and life expectancy, which are period measurements but controlled for the effect of the age structure (1, 3, 11).

Figure 11 presents a scatter plot of the total fertility rate and life expectancy at birth for every country in the Americas and the average for the Region at five different points in time. The first year for which data are available is 1950, when most of the countries were in the incipient stage of the demographic transition (more than 84% of the Region's population); the second year, 1965, is the beginning of the transition in many countries; the third year is 1990, when many countries were already in full transition; present time is taken as 2020;

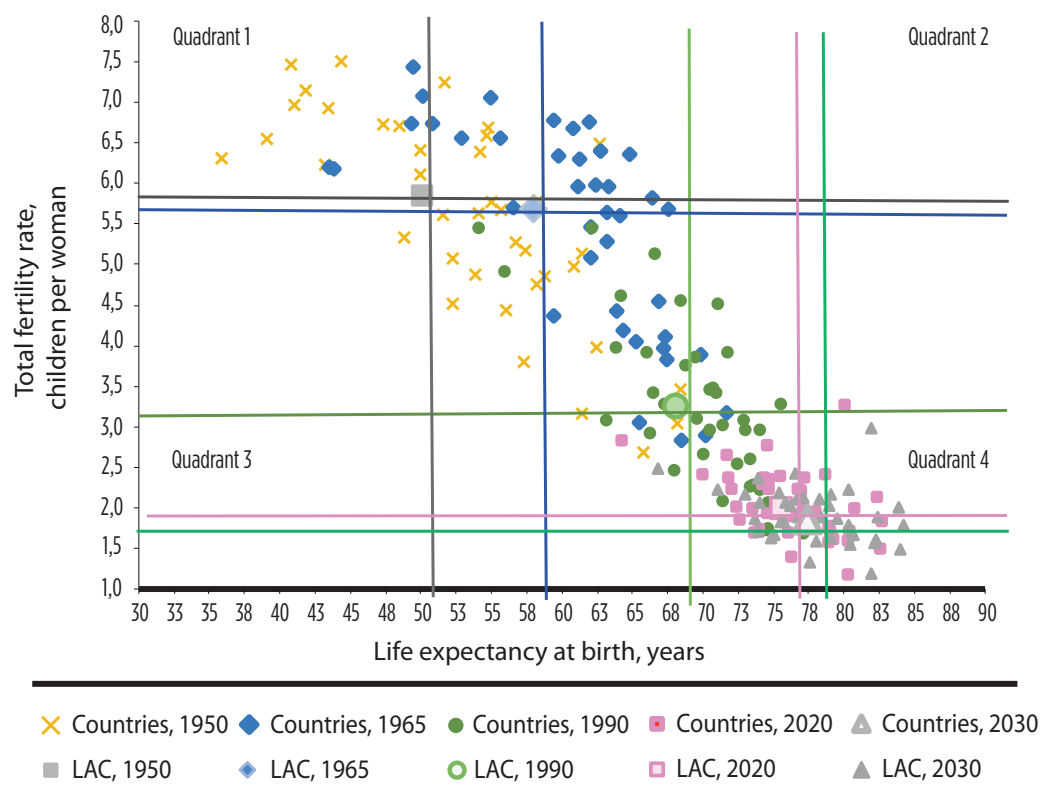
<sup>6</sup> In the early 1990s, the countries were divided into four categories, based on the stage of their demographic transition: (1) incipient transition – a high birth rate (32-45 births per 1,000 population) and a high mortality rate (more than 11 deaths per 1,000 population); (2) moderate transition – a high birth rate and a moderate mortality rate (7-11 births or deaths per 1,000 population); (3) full transition – a moderate birth rate (24-32 births per 1,000 population) and moderate and low mortality rates (4-7 deaths per 1,000 population), and (4) advanced transition – low birth rate (10-24 births per 1,000 population) and moderate and low mortality rates (4-7 deaths per 1,000 population). See Chackiel J. Latin America: América Latina: ¿hacia una población decreciente y envejecida? Population Papers. 2006;12(50):37-70. Available from: <http://www.redalyc.org/articulo.oa?id=11205006>.

and, finally, 2030 reflects the projected situation at the end of the Decade of Healthy Aging. The figure shows a significant increase in years of life at the beginning of the demographic transition (on the horizontal axis), a marked decline in fertility in the middle of the period (on the vertical axis), and, finally, the point at which the changes in the two rates are lower because they have already reached low fertility and high life expectancy levels.

The figure also shows greater advances and lags in terms of the stage of demographic transition compared with the regional average over time, considering the four quadrants. Quadrant 1 contains the countries that are lagging in the demographic transition, while Quadrant 4 contains the relatively more advanced countries, with lower fertility and longer life expectancy. Quadrants 2 and 3 contain countries at an intermediate stage, either because they are lagging behind the average in fertility (Quadrant 2) or because they are lagging behind in terms of life expectancy (Quadrant 3). With regard to the regional average in each period, more countries are located in the quadrants for the more advanced stages.

Figure 11 also shows an initial increase in the scattering of the indicators, when some countries begin the demographic transition and others remain behind; however, in the next stage, the scattering decreases and the trend is toward homogenization of the two indicators. Indeed, in half a century, every country in Latin America and the Caribbean went through a demographic transition, but some did not reach the final stage in 2020 because their fertility rate was higher than three children per woman (French Guiana) or above replacement level by more than half a child (Haiti, Guatemala, and the Plurinational State of Bolivia), or because they still had very short life expectancy compared to the other countries (Haiti, with a life expectancy of 64.3 years).

**Figure 11.** Latin America and the Caribbean: total fertility rate, by life expectancy at birth, by country, 1950, 1965, 1990, 2020, and 2030



Note: LAC: Latin America and the Caribbean.

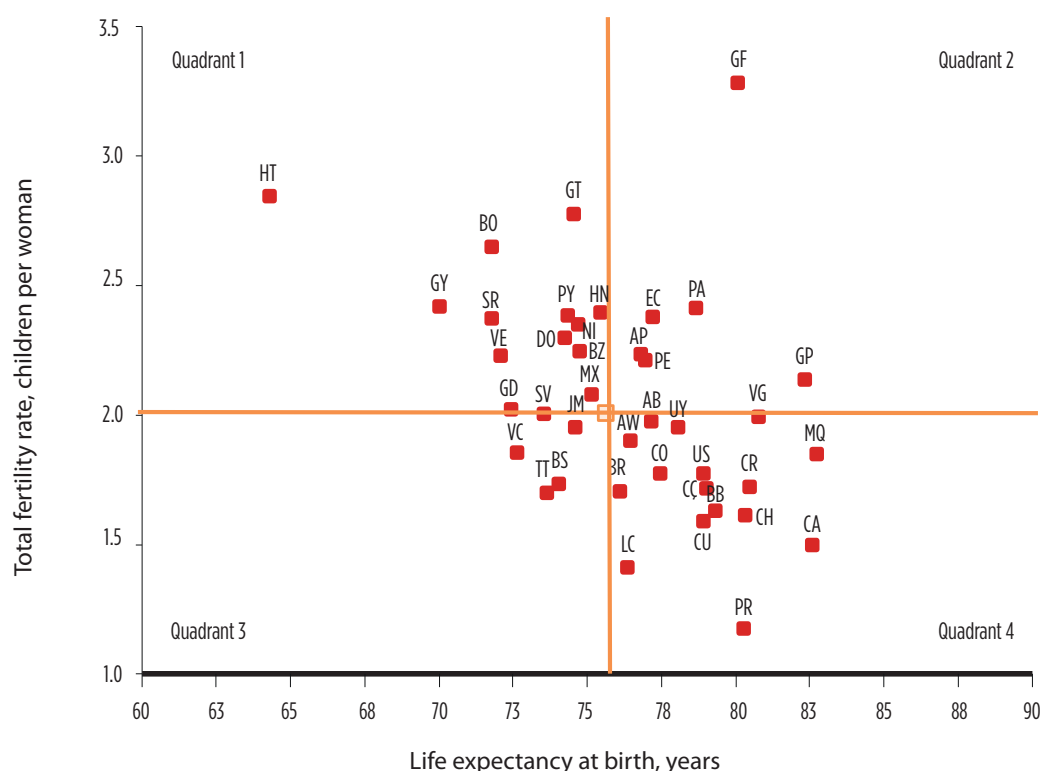
Source: Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from : <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>

With the consolidation of the demographic transition in the Region, mortality and fertility levels have converged toward very low values, but there are still differences between countries. To better position countries in terms of fertility and mortality rates, we need to look at other criteria, for example by assigning quadrants to those that did not reach replacement fertility rates and those with levels below the lowest found in the developed countries. Figure 12 presents an expansion of the previous figure – only for the current period – that shows the rates for 2020. The 12 countries in Quadrant 1 of the figure are relatively behind the average for the Region (75.6 years for life expectancy at birth and 2.1 children per woman); among this group, the countries farthest behind are the Plurinational State of Bolivia, Guatemala, and Haiti. However, some of the countries relatively behind in Quadrant 1 do not have such marked lags, with fertility of less than 2.5 children per woman and sometimes even very close to replacement level (Belize, the Dominican Republic, Guyana, Honduras, Mexico, Nicaragua, Paraguay,

Suriname, and the Bolivarian Republic of Venezuela). Quadrant 2 has six countries (Argentina, Ecuador, French Guiana, Guadeloupe, Panama, and Peru), in which life expectancy at birth is longer than the regional average and there is some lag in the total fertility rate; however, with the exception of French Guiana, all of them have a total fertility rate of less than 2.5 children per woman. The countries in Quadrant 3 are more advanced than the regional average in terms of fertility – that is, they are all below replacement level but have a life expectancy below the average for the Americas. This group includes six countries (Bahamas, El Salvador, Grenada, Jamaica, Saint Vincent and the Grenadines, and Trinidad and Tobago). Finally, Quadrant 4 includes 16 countries that can be considered relatively advanced in the demographic transition process: Antigua and Barbuda, Aruba, Barbados, Brazil, Canada, Chile, Colombia, Costa Rica, Cuba, Curaçao, Martinique, Puerto Rico, Saint Lucia, the United States, the U.S. Virgin Islands, and Uruguay. This group also includes some that are notable for their very low fertility or high mortality compared with developing countries (Puerto Rico, Saint Lucia, and Canada, with very low fertility, and Canada, Chile, Costa Rica, Martinique, Puerto Rico, and the U.S. Virgin Islands), with life expectancy at birth of more than 80 years.

In the same way that the trends in demographic transition trends differ in the Region, the final stage is not similar to the majority of developed countries. The final stage of transition has been described as the point where countries reach low fertility rates, generally recognized in the past as the population replacement level. Despite the observed data for some developed countries and the 2020 data for the Americas presented in Figure 12, fertility rates could continue to decline to very low levels that would not guarantee population replacement in the long term. There are also Latin American and Caribbean countries with longer life expectancy at birth in comparison with the local level of development and other countries.

**Figure 12.** Region of the Americas: total fertility rate, by life expectancy at birth, by country, 2020



Notes: AB: Antigua and Barbuda; AR: Argentina; AW: Aruba; BB: Barbados; BO: Bolivia (Plurinational State of); BR: Brazil; BS: Bahamas; BZ: Belize; CA: Canada; CC: Curaçao; CH: Chile; CO: Colombia; CR: Costa Rica; CU: Cuba; DO: Dominican Republic; EC: Ecuador; GD: Grenada; GF: French Guiana; GP: Guadeloupe; GT: Guatemala; GY: Guyana; HN: Honduras; HT: Haiti; JM: Jamaica; LC: Saint Lucia; MQ: Martinique; MX: Mexico; NI: Nicaragua; PA: Panama; PE: Peru; PR: Puerto Rico; PY: Paraguay; SR: Suriname; SV: El Salvador; TT: Trinidad and Tobago; US: United States; UY: Uruguay; VC: St. Vincent and the Grenadines; VE: Venezuela (Bolivarian Republic of); VG: U.S. Virgin Islands.

Source: Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

These very low fertility levels go hand in hand with other changes in the demographic dynamic, such as changes in marriage rates, an increase in age at the birth of the first child, and an increase in migration among people aged 0–59. This new stage in the demographic dynamic has been called “the second demographic transition” (27). However, the different trends in the demographic transition and its final stage in Latin America have shown no evidence of a second transition in the Region, as seen in Europe (22). Fertility in the Region has already reached very low levels in many countries, but this trend coincides with relatively high rates of adolescent and unwanted pregnancies (23).

Given the challenges stemming from the changes in age structure and population decline or growth, countries must be prepared with appropriate programs and policies based on respect for human rights. Some European and Central Asian countries are beginning to focus on policies that can ensure the long-term ability of their populations to resist and recover from demographic changes (known as “demographic resilience”) (24) to meet the challenges posed by these rapid demographic changes, while taking advantage of the opportunities that accompany them. The next chapter describes in greater detail the most obvious and critical effects of the demographic transition in the Region.

## Effects of the demographic transition

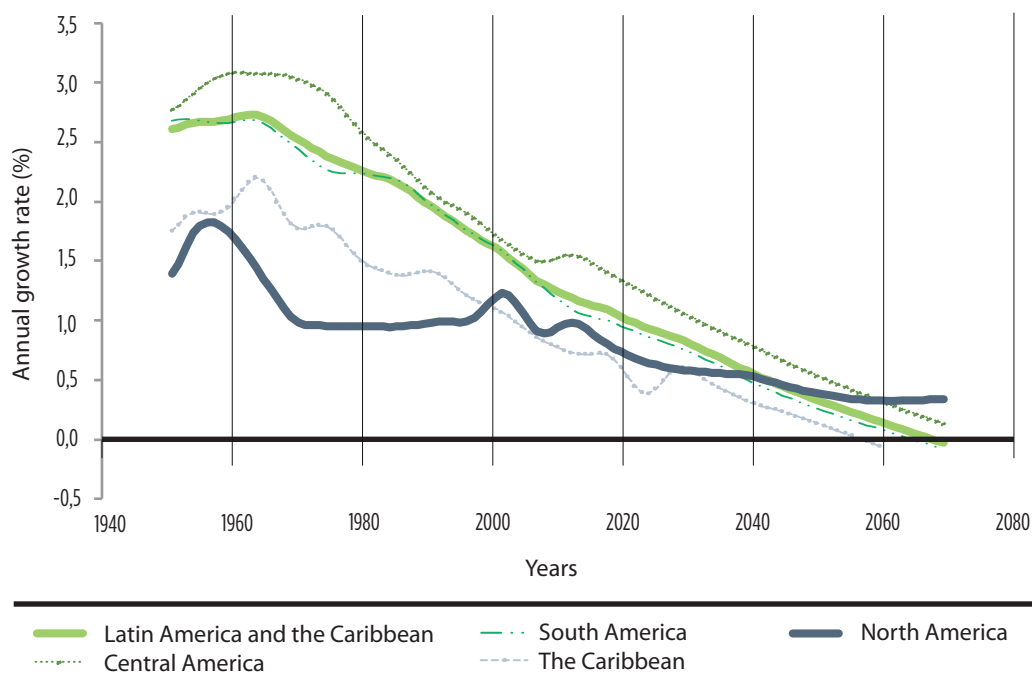
Demographic dynamics are a constant in people's lives, operating in a cause-and-effect loop. Demographic transition not only affects people's lives; increasing life expectancy and declining fertility affect the demographic dynamic itself, meriting the attention of public policies aimed at long-term adjustments<sup>7</sup>. The most visible effect was very rapid: population growth resulting from a decline in infant mortality and an increase in fertility. This was, followed by lower growth and, today, population decline in many countries. The other longer-term but perhaps more transformative effect is the result of changes in the population age structure, with a gradual shift from essentially young societies to more mature and increasingly older ones. This chapter discusses past trends, the current situation, and expectations for the future in the Region with respect to these population changes.

### Population growth and decline

According to projections, population growth in Latin America and the Caribbean will continue to slow beyond 2050, when the population is expected to decrease in absolute numbers (see Figure 13, where the rate is negative), if the assumptions of the medium variant are confirmed over the years. Growth in Latin America and the Caribbean is basically determined by natural growth. In the mid-20th century, the subregion had almost 170 million inhabitants but was growing at an average rate of 2.6 per cent annually. This rate increased throughout the 1950s, reaching 2.7% in 1963, bringing the population to almost 240 million in just a few years. In the succeeding years, even with a gradually declining growth rate, the population of Latin America and the Caribbean rose to 521 million in 2000, and in 2020, 650 million people were living in the subregion. In short, despite falling growth rates since the mid-1960s, the population of Latin America and the Caribbean multiplied about fourfold. It is estimated that the subregion will reach its maximum population in 2058, with a total of 767.6 million inhabitants.

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7 As Huenchuán states, one of the effects of the demographic transition on people's lives is the greater survival stemming from lower mortality, which could imply higher costs to maintain health and well-being during a longer life. Furthermore, the decline in fertility could free up some of the time that women would have spent on child-rearing to devote themselves to other activities, which would allow them greater participation in the labor market and thereby increase their independence and well-being in their households. See Huenchuán S. (editor). *Envejecimiento, personas mayores y Agenda 2030 para el Desarrollo Sostenible: Perspectiva regional y de derechos humanos*. Santiago, Economic Commission for Latin America and the Caribbean; 2018. 251 pp. Available from: [https://repositorio.cepal.org/bitstream/handle/11362/44369/1/S1800629\\_es.pdf](https://repositorio.cepal.org/bitstream/handle/11362/44369/1/S1800629_es.pdf).

**Figure 13.** Region of the Americas: population growth rate, by subregion, 1950-2060

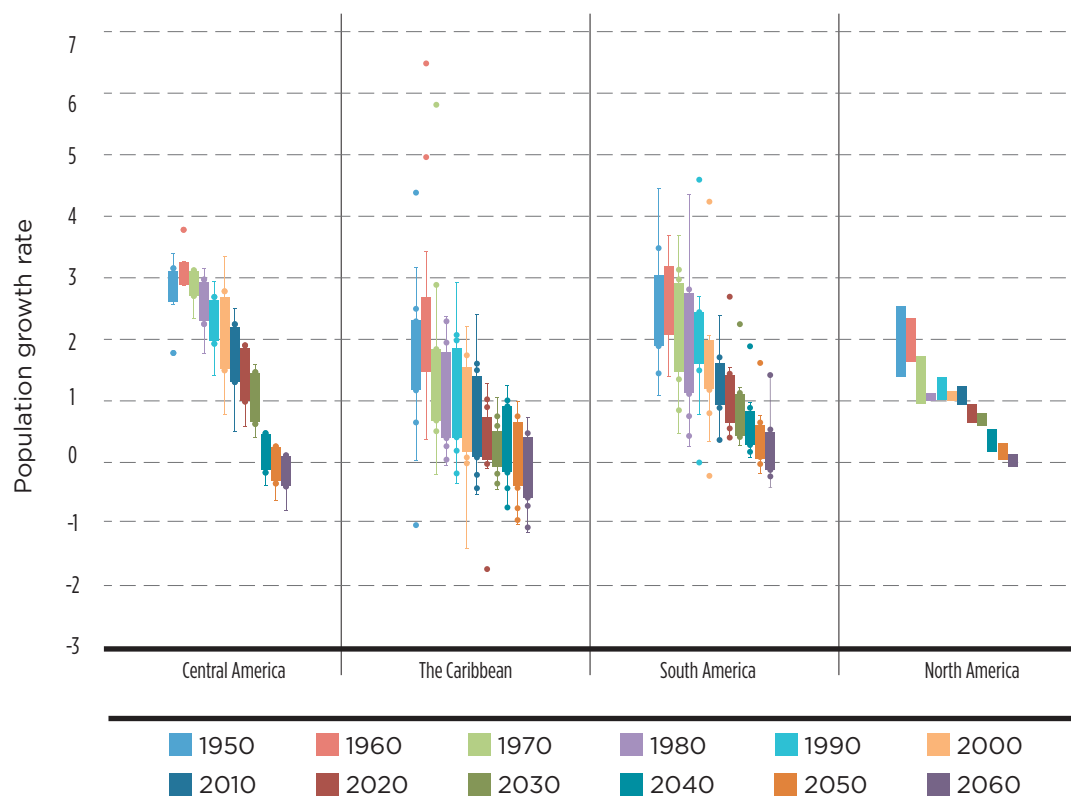
Source: Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

This growth is not the same in all subregions. On average, the highest growth rates occur in Central America and the lowest, in the Caribbean. In fact, the Caribbean will reach population decline 10 years before the regional average. However, it is the subregion with the smallest population (43.5 million in 2020) with a projected maximum of 47.7 million people in 2049, when the population is expected to begin a slow decline. North America's growth rate, in contrast, exhibits behavior very different from that of the other subregions, since, despite beginning its demographic transition before the others, growth has remained below 1%, mainly due to the effects of migration. In fact, it is estimated that in the 2020s, the growth rates of Latin America and the Caribbean and North America will be very close, with the latter exceeding the growth of the former in the coming years.

Naturally, the different trends in the countries' demographic transition also imply growth rates with widely different ranges (Figure 14). The Caribbean is a subregion where some countries have had the lowest growth rates for decades, while others have had the highest rates, some exceeding 4% annually. These growth levels mean that a country's population could double every 15 years. Furthermore,

growth rates of around 3%, such as those observed in many Central and South American countries in the early 1960s, mean that the population will double every 25 years.

**Figure 14.** Region of the Americas: population growth rate, by subregion and country, 1950, 1960, 1970, 1980, 1990, 2000, 2010, 2020, 2030, 2040, 2050, and 2060



Source: Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

Growth rates in the countries are high at the beginning of the transition but then they begin to fall, with some countries approaching zero or even negative growth as the demographic transition progresses. In fact, 2020 already witnessed a decrease in absolute values in the populations of Cuba, Guadeloupe, Martinique, Puerto Rico, and the U.S. Virgin Islands. Toward the end of 2030, Trinidad and Tobago and Chile will likely join this group of countries, whose total population will decrease. Furthermore, only French Guiana is currently maintaining an annual growth of over 2.5%, and four other countries have rates above 1.5%: Belize (1.8%), Guatemala (1.7%), Honduras (1.6%), and Panama (1.6%). These countries have total fertility rates above the replacement rate and, moreover, suffer from the effects of demographic inertia: the high percentage of women of reproductive age continue to add many live births to the population.

Finally, like the fertility and mortality rates, total population growth rates in the countries also changed at the beginning of the demographic transition but are converging toward lower values. Furthermore, migration has a limited impact on population growth. The exceptions here are the United States, where migration contributes to population growth, and some Caribbean countries, where migration has a significant negative impact on population size. The box plots in Figure 14 present the minimums, maximums, and growth rate scatter band, where these trends can be observed.

### **Changes in age structure and population aging**

As a result of the changes in mortality and fertility, the relative age distribution of the population has undergone major changes, with the consequent economic, health, and social implications. In Latin America and the Caribbean, changes in the demographic indicators and age structure have been rapid. Although major changes in the age structure occur quickly, they are foreseeable in most cases, and must be taken into account to ensure the success of programs and actions that promote human development.

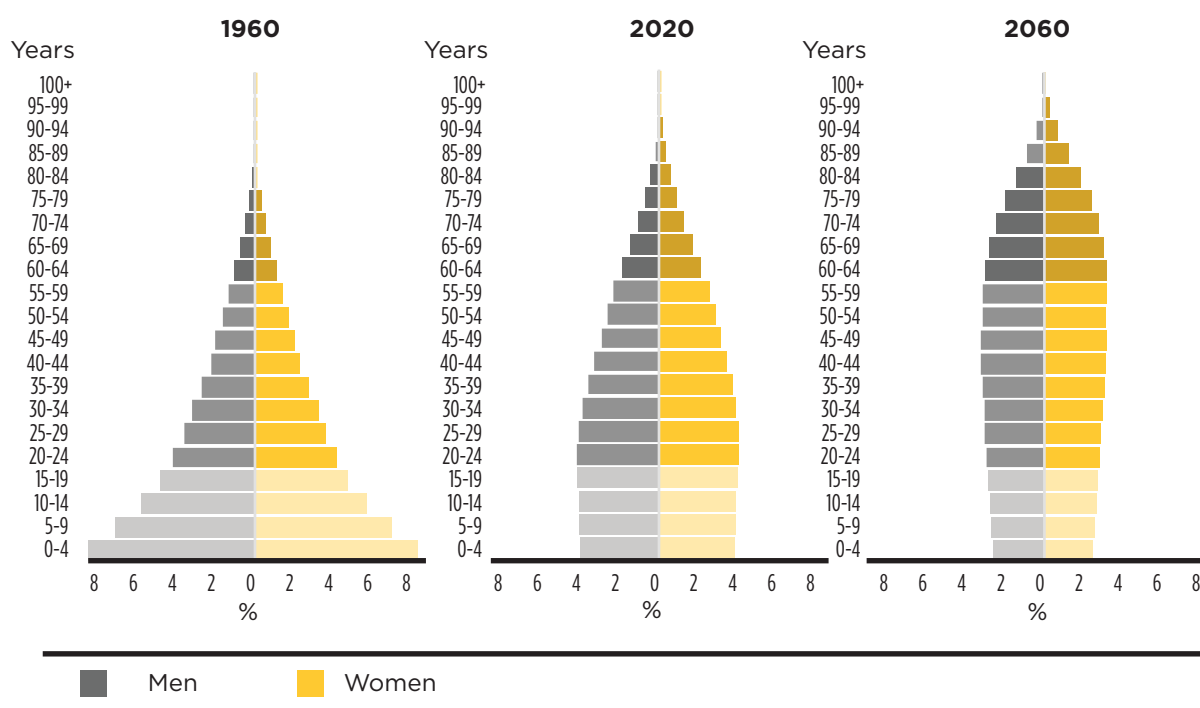
Population aging –a change in the age composition of the population, expressed as an increase in the relative weight of older persons in the total population –is expected to occur in every country. However, the path each country takes when shifting from young to old societies has specific characteristics that must be considered, especially in terms of public policy design, to ensure that population aging is an opportunity and not a misfortune, by taking action within the framework of human rights and efforts to reduce social inequalities.

The population age pyramid in Latin America and the Caribbean has been changing since the late 1960s and will continue to do so for many years to come. Population waves have been so intense that in just a few decades, population pyramids in the subregion have already lost their shape – characterized by a wide base and a narrow apex – and now resemble a bell (Figure 15). These changes will continue to produce variations in the shape of population pyramids in the coming years.

The first effect of the mortality transition on the relative distribution of the population in Latin America and the Caribbean was an increase in the base of the age pyramid, which had been wide for many decades, with an adult population whose relative size was decreasing with the enormous increase in children in the population. For some years, the trend has been reversed: the new generations have begun to increase

the size of the adult age groups, which are in the middle of the population pyramid, leaving young groups with relatively less weight in the population. At the same time, the older population has slowly gained more relative weight in recent decades, and the subregion currently has a pyramid with an upper level that is visibly wider. For the next few decades, the upper level—which in the original pyramid was narrow, with less than 6 percent of people aged 60 and over in 1960—is projected to include nearly one third of the population. Moreover, women will be significantly overrepresented among older persons as a result of longer female life expectancy.

**Figure 15.** Latin America and the Caribbean: population distribution, by age and sex, 2020 and 2060

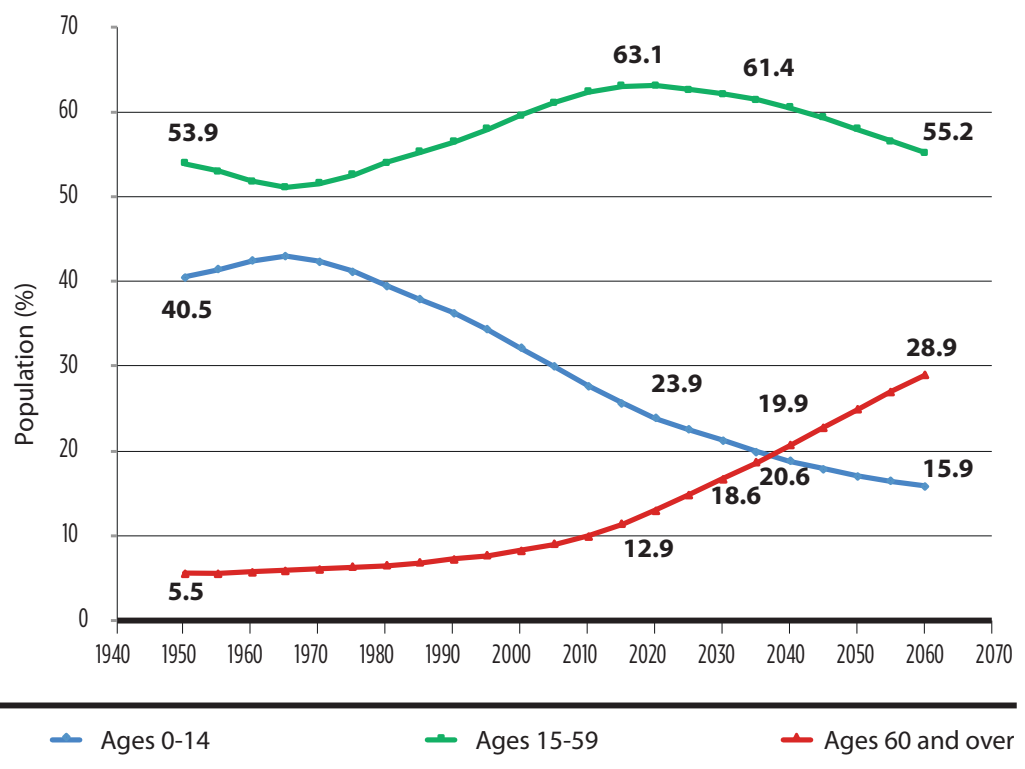


Source: Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

This steady increase in the proportion of older persons relative to the total population is called population aging (25). The definition of “older person” in a population is arbitrary (26), as is that of other groups, such as the “young” population or “youth,” and is subject to the historical moment and cultural considerations. In the case of older persons, there is no single definition: while 65 and over is ordinarily used in demography as the cut-off point for indicators of potential dependency, in other situations (in law, for example) the threshold of 60 and over is more common.

Defining older persons as people aged 60 and over and youth as people aged 0-14, Figure 16 presents the evolution of the relative percentage of these age groups in Latin America and the Caribbean and the projections up to 2060. The figure is revealing, as it shows a relative decline in the young population, which plummets from more than 40% in 1960 to less than 24% today—a decline that is offset by an increase in the adult population (aged 15-59 years) in successive generational waves. Notwithstanding, as of 2020, the population aged 15-59 also loses relative weight, which is explained by a sharp increase in the older population, which will become more numerous than the young population around 2035, a point that will mark a milestone in the subregion.

**Figure 16.** Latin America and the Caribbean: population trends and projections, by age group, 1950–2060



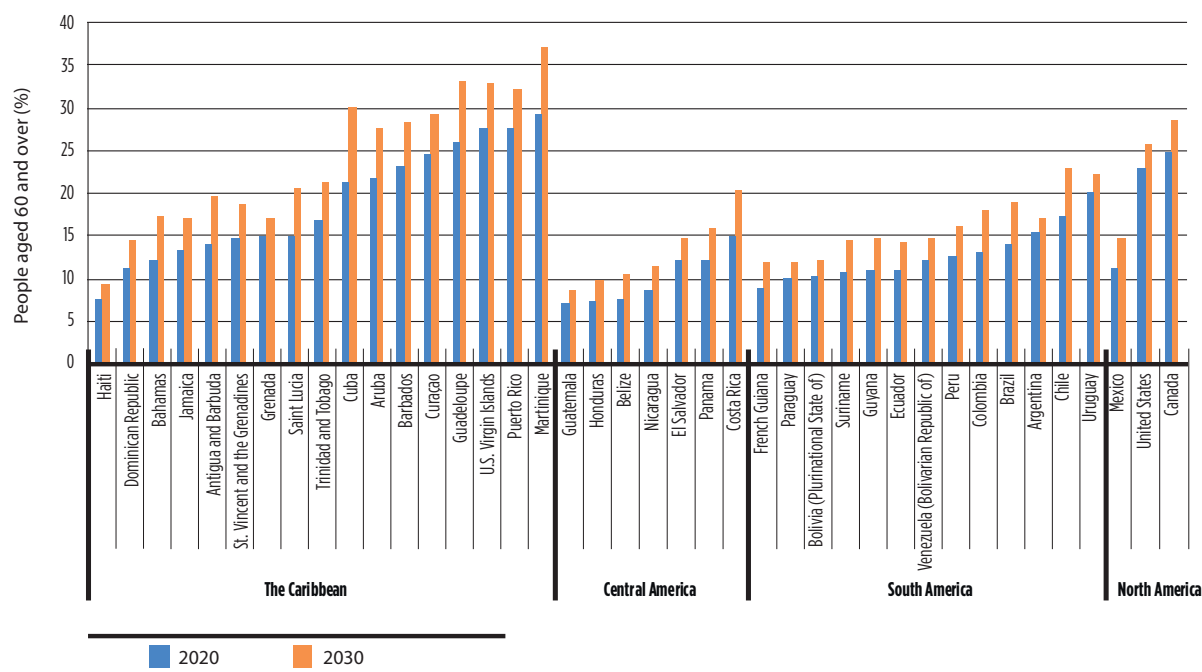
Source: Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

The path already taken up to 2020 will continue, its speed depending on the evolution of fertility and mortality. The population aged 60 and over will account for almost 30% of the total population by 2060 and approach 40% in very long-term scenarios (toward 2100). It can

therefore be said that population aging in Latin America and the Caribbean is the most significant demographic event of this century, just as the increase in life expectancy and decline in fertility were in the last century.

Again, the subregional average masks internal differences, but, in this case it conceals the speed of the transition from young societies to older ones. The percentage of older persons at a given time in each country will depend on many demographic variables such as mortality and fertility levels at the beginning of the transition, their speed of decline, and their current levels. It will also depend on the volume of migration and the percentage of women of reproductive age in the population. A snapshot of the current moment (2020) and projected situation at the end of the decade (2030) shows the internal diversity of the countries of the Region (Figure 17), where we observe the percentage of people 60 and over in the countries in ascending order, by subregion, for these two points in time.

**Figure 17.** Region of the Americas: percentage of people aged 60 and over, by subregion and country, 2020 and 2030



Source: Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

By the 2010s, many Caribbean countries had experienced intense population aging, with percentages of the older population higher than those observed in developed countries such as the United States and Canada. Figure 17 shows that in some countries (for example, Martinique, Puerto Rico, and Cuba), the older population accounted for more than 20% of the total population in 2020 and will exceed 30% in the coming decade. These are countries that, in addition to low fertility, have undergone intense periods of emigration throughout the demographic transition. At the same time, the Caribbean has countries with low levels of population aging, such as Haiti and the Dominican Republic, where even in 2030 the older population will not reach 10% and 15%, respectively.

In South America, in contrast, aging in Uruguay is in an advanced stage, since its older population exceeded 20% in 2020. However, in 2030 Chile will surpass Uruguay as the country with the oldest population in the subregion. Other South American countries that will follow the observed trend of a sharp increase in the number and percentage of older persons are Brazil, Colombia, and Peru. In Central America, the country farthest along in the population aging process is Costa Rica, whose older population in this decade will jump from 15% to over 20%. In contrast, the countries farthest behind in this process are Guatemala, Honduras, Belize, and Nicaragua. It should be noted that Argentina, which went through an early demographic transition in the Region, is not aging rapidly in the current decade, since its initial demographic transition's trajectory is more similar to that of the developed countries.

Diversity in population aging trajectories follows diversity in demographic transition trajectories. Thus, the process in each country is also different for groups with diverse social, economic, and cultural characteristics, such as indigenous populations and Afro descendants. In each country, it is important to know the characteristics, points in time, and speed of the demographic transition and population aging for populations with generally higher levels of social and economic inequality. Given the importance of all the historical processes, Box 2 presents the population aging process of Afro-descendant populations. A publication in this series specifically focuses on indigenous peoples (see: Socio-demographic Situation of Indigenous People in Latin America and the Caribbean: Analysis in the Context of Aging and COVID-19).

**Box 2.** Demographic aging of the Afro-descendant population

Despite its importance, the identification of a population by its ancestry is very recent in most Latin American and Caribbean countries. The exceptions are Brazil and Cuba, whose population censuses have collected this information for decades through ethnic-racial self-identification. In recent years, other countries have included questions in their data gathering instruments that enable populations to be identified through ethnic-racial self-identification, while some allow people to state their main ancestry. Nonetheless, there is a lack of historical data to enable an understanding of the demographic dynamics of ethnic-racial groups and their trajectory through the demographic transition, hindering thorough analysis of the aging process in Afro descendant populations.

Notwithstanding, in countries with statistics that classify the population by racial group based on the most recent age structure, it can be seen that Afro-descendant populations are at a full or advanced stage of demographic transition and have already begun the population aging process. Indicators based on the age structure of the Afro descendant population in 12 Latin American and Caribbean countries paint a comparative picture of the countries. According to estimates of the Economic Commission for Latin America and the Caribbean (ECLAC) based on 2010 census data, the percentage of persons aged 60 and over in the Afro-descendant population exceed 14% only in Cuba and Uruguay. In several countries (including Brazil, Colombia, Costa Rica, Ecuador, Panama, and the Bolivarian Republic of Venezuela) this figure was over 7%, while in the Plurinational State of Bolivia, Honduras, and Nicaragua, it was under 7%.

Although there is insufficient information on mortality by ethnic-racial classification, the total fertility rates corroborate these findings. The fertility of the Afro descendant population in these countries is low, very close to the total fertility rate of the non-Afro-descendant population (only the Plurinational State of Bolivia and Ecuador have fertility rates higher than three children per woman). In some countries, such as Argentina, Honduras, Nicaragua, and Panama, the fertility of the Afro-descendant population is equal to or lower than that of the non-Afro descendant population.

With regard to demographic dependency indicators, also based on the age structure, we can confirm that the Afro-descendant population is at a stage with advantages for the expansion of social and economic development, since there is a higher proportion of people of potential working age compared to potentially inactive people (a phenomenon known as the “demographic dividend”). Since inequalities in the Afro-descendant population are greater, there are also greater challenges in terms of the public policies needed to take advantage of the initial demographic dividend. It will be necessary to plan and implement policies tailored to a population with an accumulation of educational, occupational, and health needs and higher risks. The risk of not doing so will be that the initial demographic dividend will not yield a second dividend, increasing inequalities in older persons’ access to services. This will create even greater challenges for these populations and countries as a whole to escape from their situation of low and moderate income and have access to a healthy life.

*Source:* Based on census data from the countries and the Economic Commission for Latin America and the Caribbean. Situación de las personas afrodescendientes en América Latina y desafíos de políticas para la garantía de sus derechos. Santiago, Economic Commission for Latin America and the Caribbean; 2017. 187 pp. Available from: <https://repositorio.cepal.org/handle/11362/42654>.

## Stages of population aging

Changes in the population age structure are long-lasting and can take many decades, depending on the speed of decline in mortality and fertility and the effects of migration. As a consequence of the different trajectories in the demographic dynamic, population aging has occurred with different intensities and speed in each country. Advance knowledge of these characteristics and their different stages is essential for planning programs and policies that should consider not only the number of older persons in the population but the relative size of this group in relation to other age groups.

The relative distribution of different age groups is important because people have different needs such as education, health, and care, throughout their lives, and they provide different economic assistance and care to other people. Using age as a proxy for different life courses, the purpose of this chapter is to identify the various stages of population aging in the countries of the Region today and the outlook for the future.

### Regional overview of population aging

In order to describe and classify countries in terms of changes in the percentage of older persons, different indicators associated with the demographic transition can be used, or the relative or absolute share of different population groups can be compared. Since fertility is the element that most influences the population age structure throughout the demographic transition, Figures 18 and 19 situate the countries according to their total fertility rate and percentage of people aged 60 and over at two points, 2020 and 2030, to determine their stage of aging. These figures indicate the average of the indicators for Latin America and the Caribbean (horizontal and vertical lines), which, in 2020, was two children per woman, with people aged 60 and over accounting for 13% of the population, and in 2030, was 1.86 children per woman and people aged 60 and over accounting for 16.7% of the population.

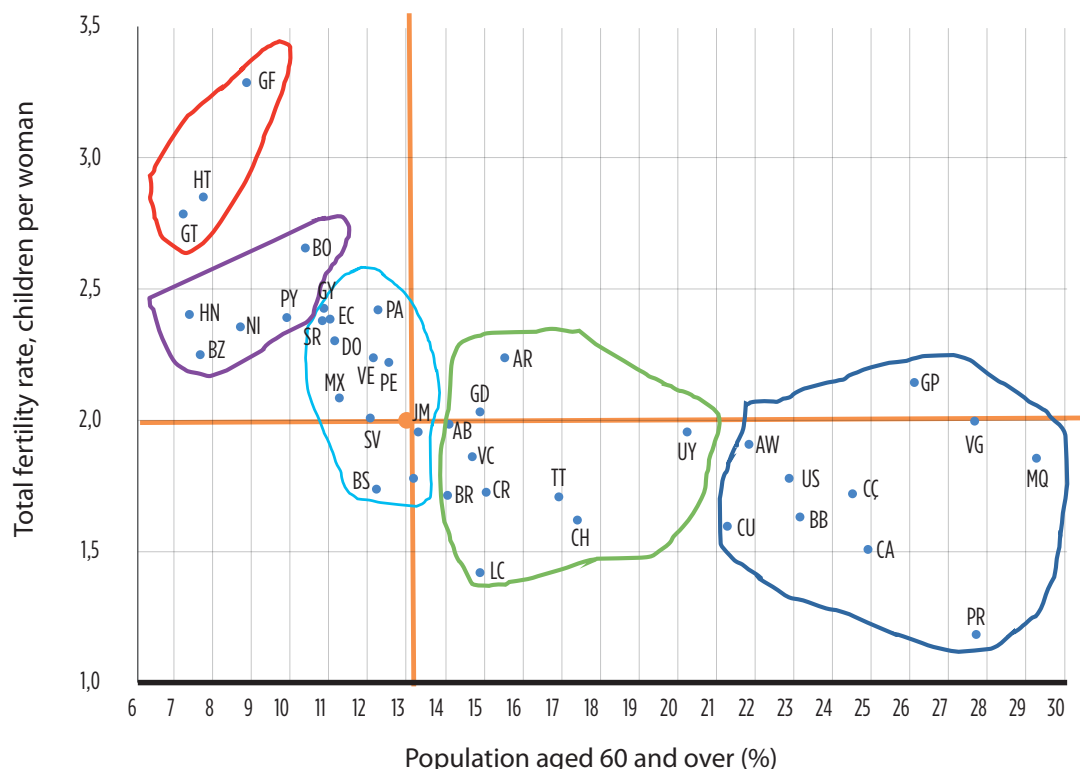
While the total fertility rate is negatively correlated with the percentage of older persons, the correlation is not perfectly linear and there are different degrees of population aging for the same fertility rate; at the same time, there are countries with different total fertility rates for the same degree of population aging. This is explained by the effects of the other demographic variables of the countries' population dynamic. The classification by stages of population aging is based on the percentages of older persons in the total population, using arithmetic increases with

a factor of 7 for the values of 14%, 21%, 28%, and 35% <sup>8</sup>. Regarding total fertility, three groups are considered when classifying the countries: (1) those with a rate of 2.5 children or more per woman; 2) those that are close to the replacement rate, and 3) those that exhibit low fertility. Using the two indicators, Figure 18 divides the countries into five different stages in terms of their degree of population aging in 2020: 1) incipient (a total fertility rate of 2.5 children or more per woman and an older population of less than 10%); 2) moderate (a total fertility rate of less than 2.5 children per woman and an older population of less than 10%); 3) moderately advanced (a total fertility rate of less than 2.5 children per woman and an older population of 10%-14%); 4) advanced (a total fertility rate of less than 2.5 children per woman and an older population of 14%-21%); and 5) very advanced (a total fertility rate of less than 2.5 children per woman and an older population of more than 21%).

In 2020 (Figure 18), 20 countries in the Americas have a total fertility rate below the regional average, but percentages of the older population range from 12% to almost 30%, indicating that they are at different stages of population aging. Only three countries (Guatemala, French Guiana, and Haiti) are in the incipient stage of the aging process, with fertility of more than 2.5 children per woman and an older population of 7%-10% (red circle). Five other countries (Bolivia (Plurinational State of), Belize, Honduras, Nicaragua, and Paraguay) are in the moderate stage (purple circle), as they have the same range of percentages for the older population as the previous group and fertility of less than 2.5 children per woman (the Plurinational State of Bolivia is included in this group, despite having an older population of more than 10%, since it has the same fertility rate as the countries in the incipient stage). There are 12 countries in the moderately advanced group (light blue circle), whose values for the two indicators are close to the regional average (the vast majority of them are in the Caribbean and Central America, and they are joined by Colombia, Peru, and the Bolivarian Republic of Venezuela). The countries that are very advanced in the population aging process (green blue circle) include many Caribbean island nations, Cuba among them, in addition to the United States and Canada. Finally, 10 countries are in the very advanced stage (blue green circle), namely: Antigua and Barbuda, Argentina, Brazil, Chile, Costa Rica, Guadeloupe, Saint Lucia, Trinidad and Tobago, the U.S. Virgin Islands, and Uruguay, where older people account for more than 21% of the total population.

<sup>8</sup> The reasoning is that this is an intuitive way of estimating how long it takes to double the value (percentage of the population), making it easier to compare the speed of the aging process across countries.

**Figure 18.** Region of the Americas: total fertility rate and percentage of population aged 60 and over, by country, 2020

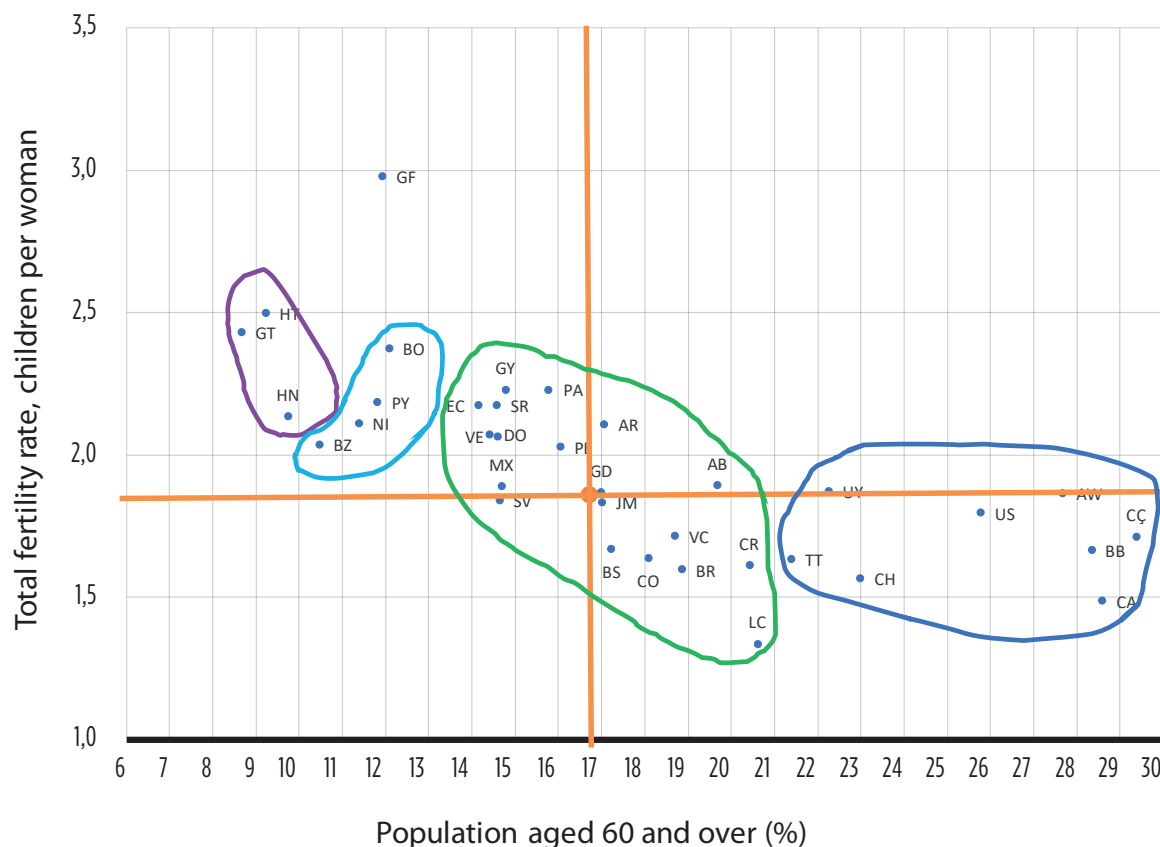


*Notes:* a) Total fertility rate: number of children per woman, per 100. b) AB: Antigua and Barbuda; AR: Argentina; AW: Aruba; BB: Barbados; BO: Bolivia (Plurinational State of); BR: Brazil; BS: Bahamas; BZ: Belize; CA: Canada; CÇ: Curaçao; CH: Chile; CO: Colombia; CR: Costa Rica; CU: Cuba; DO: Dominican Republic; EC: Ecuador; GD: Grenada; GP: Guadeloupe; GF: French Guiana; GT: Guatemala; GY: Guyana; HN: Honduras; HT: Haiti; JM: Jamaica; LC: Saint Lucia; MQ: Martinique; MX: Mexico; NI: Nicaragua; PA: Panama; PE: Peru; PR: Puerto Rico; PY: Paraguay; SR: Suriname; SV: El Salvador; TT: Trinidad and Tobago; US: United States; UY: Uruguay; VC: St. Vincent and the Grenadines; VE: Venezuela (Bolivarian Republic of); VG: U.S. Virgin Islands.

*Source:* Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

In the coming years, demographic aging in the Region will intensify and by the end of the 2020s no country will be in the incipient aging category (Figure 19), except French Guiana, which will have fertility of close to three children per woman and an older population that will grow from 9% in 2020 to 12% in 2030, due in part to the emigration of young people.

**Figure 19.** Region of the Americas: total fertility rate and percentage of population aged 60 and over, by country, 2030



Notes: a) Total fertility rate: number of children per woman, per 100. b) AB: Antigua and Barbuda; AR: Argentina; AW: Aruba; BB: Barbados; BO: Bolivia (Plurinational State of); BR: Brazil; BS: Bahamas; BZ: Belize; CA: Canada; CC: Curaçao; CH: Chile; CO: Colombia; CR: Costa Rica; CU: Cuba; DO: Dominican Republic; EC: Ecuador; GD: Grenada; GP: Guadeloupe; GF: French Guiana; GT: Guatemala; GY: Guyana; HN: Honduras; HT: Haiti; JM: Jamaica; LC: Saint Lucia; MQ: Martinique; MX: Mexico; NI: Nicaragua; PA: Panama; PE: Peru; PR: Puerto Rico; PY: Paraguay; SR: Suriname; SV: El Salvador; TT: Trinidad and Tobago; US: United States; UY: Uruguay; VC: Saint Vincent and the Grenadines; VE: Venezuela (Bolivarian Republic of); VG: U.S. Virgin Islands.

Source: Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

All the other countries in intermediate stages of aging will transition to more advanced stages, and there will be a high concentration of countries in the advanced stage (green circle), due to the inclusion of some that were in the final phase of the moderately advanced stage in 2020 and others that were at the beginning of the advanced stage, with percentages of older persons approaching 15%, a figure that will be close to 21% in 2030.

Few countries in the world match the speed of demographic aging

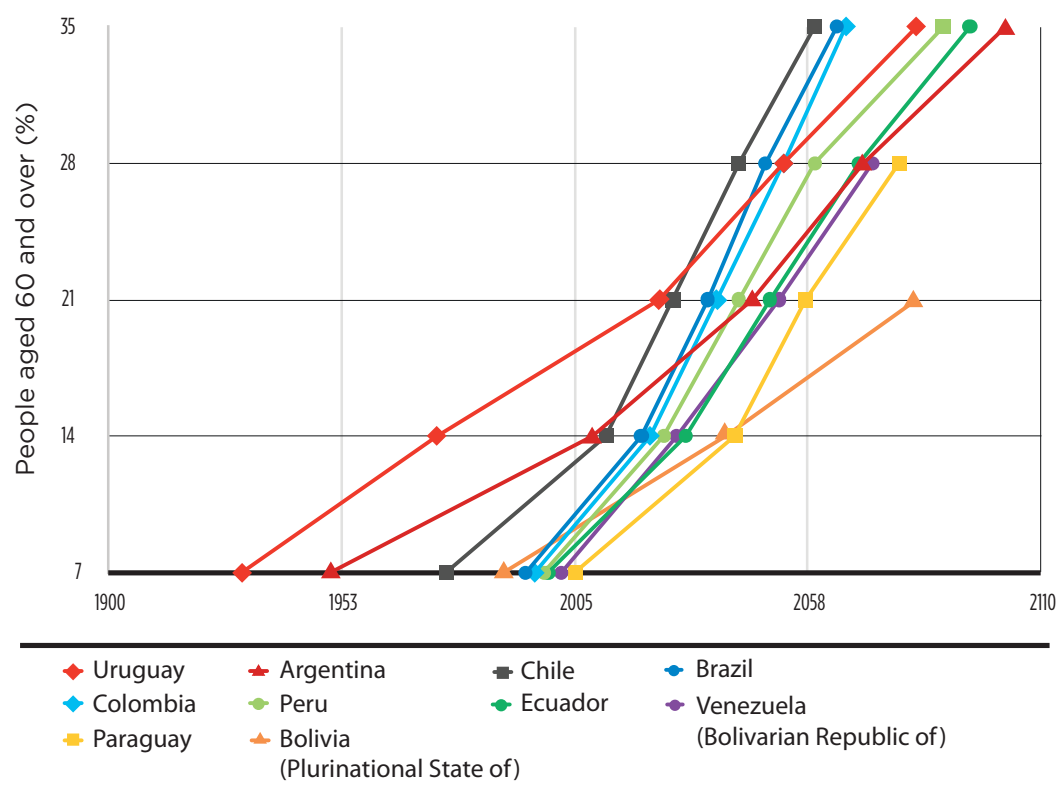
observed in most Latin American and Caribbean countries (29)<sup>9</sup>. Using the time it takes a country that has reached the 7% benchmark of people aged 60 and over to successively multiply the proportion of older persons in its total population, the speed of population aging (or the slope of the estimated curves) can be observed. Figure 20 shows the time for South American countries, where a steeper slope implies a faster aging process. This indicator is of paramount importance for planning, as countries with slower speeds can better prepare younger generations for this process, while those that have already begun the process and are moving faster must quickly begin to formulate policies and consider the speed of aging a basic variable.

The countries that will take the longest to exceed 7% and reach an older population of 28% are Uruguay and Argentina (precisely those that first began their demographic transition and where the process has been lengthiest). In both, the older population stood at 7% before 1950 but will reach 28% only after 2082 in the case of Uruguay, and 2100, in the case of Argentina. At the other extreme are Brazil, Chile, and Colombia, which reached 7% in the mid-1990s; within less than a full generation (by 2060) at least 28% of their population will be older persons. It should also be noted that these countries have been experiencing an acceleration in population aging since 2020: once older persons reach 14% of the population, it will take less time to reach 21% (in 2027, in the case of Chile, and 10 years later in Brazil and Colombia). In contrast, the Plurinational State of Bolivia and Paraguay, which began the aging process later and more slowly, are expected to reach 14% around 2040. From that point on, however, Paraguay's speed trajectory will be similar to that of the fastest group in South America, while the Plurinational State of Bolivia will remain on its slower path and will not reach 28% in the window with available projections until 2100.

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<sup>9</sup> Alves argues that France was the first country in which older persons reached 7% of the population, which occurred in 1870. However, it was not until 1980 that this group reached 14%, taking 110 years to double its relative share. In the Republic of Korea, in contrast, the proportion of older persons stood at 7% in 1999 and 14% in 2017, making it the country with the fastest rate of change in the age structure in this first phase of aging (increasing from 7% to 14%), doubling in just 18 years. See Diniz Alves J. E. *Transição demográfica, envelhecimento e a reforma da previdência*. Cadernos Adenauer XIX. 2018;2:79-101. Available from: [https://www.kas.de/c/document\\_library/get\\_file?uuid=95eb6827-70a2-1978-c051-8a56ad84229c&groupId=265553](https://www.kas.de/c/document_library/get_file?uuid=95eb6827-70a2-1978-c051-8a56ad84229c&groupId=265553).

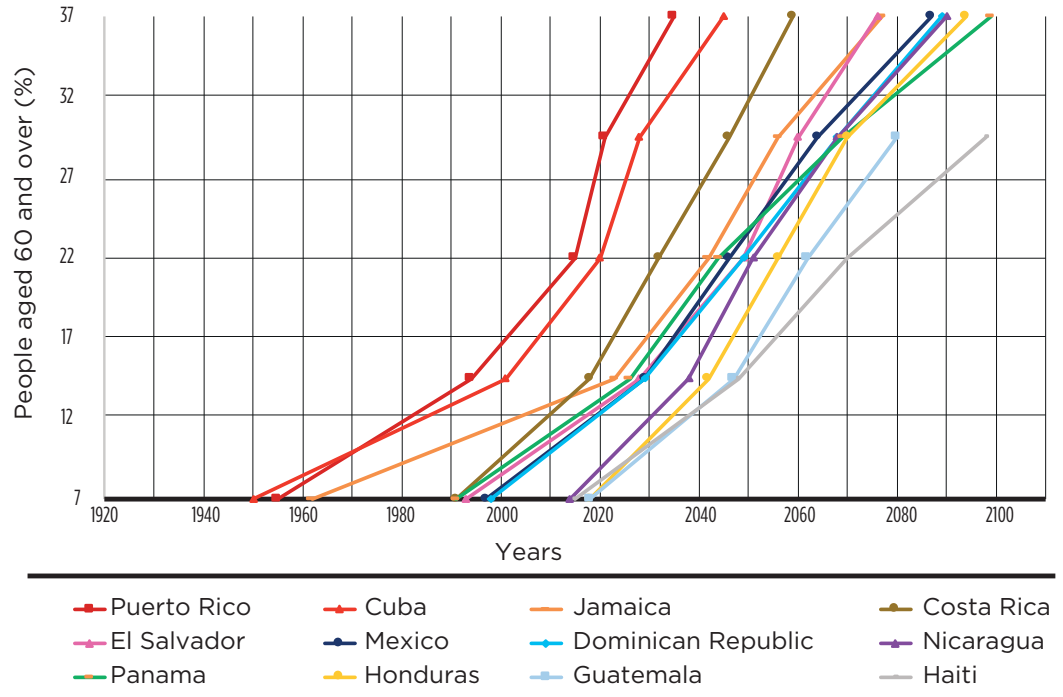
**Figure 20.** South America: estimated time for the population aged 60 and over to rise from 7% of the population to 14%, 28%, and 35%, by country



Source: Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

The Central America and Caribbean subregions also have countries with very rapid population aging rates. Figure 21 presents the same indicator of the time it takes to reach important benchmarks in the aging process, such as those seen for South America in Figure 20. Some countries in this subgroup (Cuba, Jamaica, and Puerto Rico) began the demographic aging process earlier, while others did not until after the 1990s, and a third group only recently reached an older population of 7%. However, the rapid process in Puerto Rico, Cuba, and Costa Rica is striking; the first two, with a slower trajectory at the beginning, reached an older population of 28% in this decade of the 2020s, and Costa Rica, with very rapid growth of that population, which in less than 70 years will have soared from 7% to 35%.

**Figure 21.** Central America and the Caribbean: estimated time for the population aged 60 and over to rise from 7% of the population to 14%, 28%, and 35%, by country

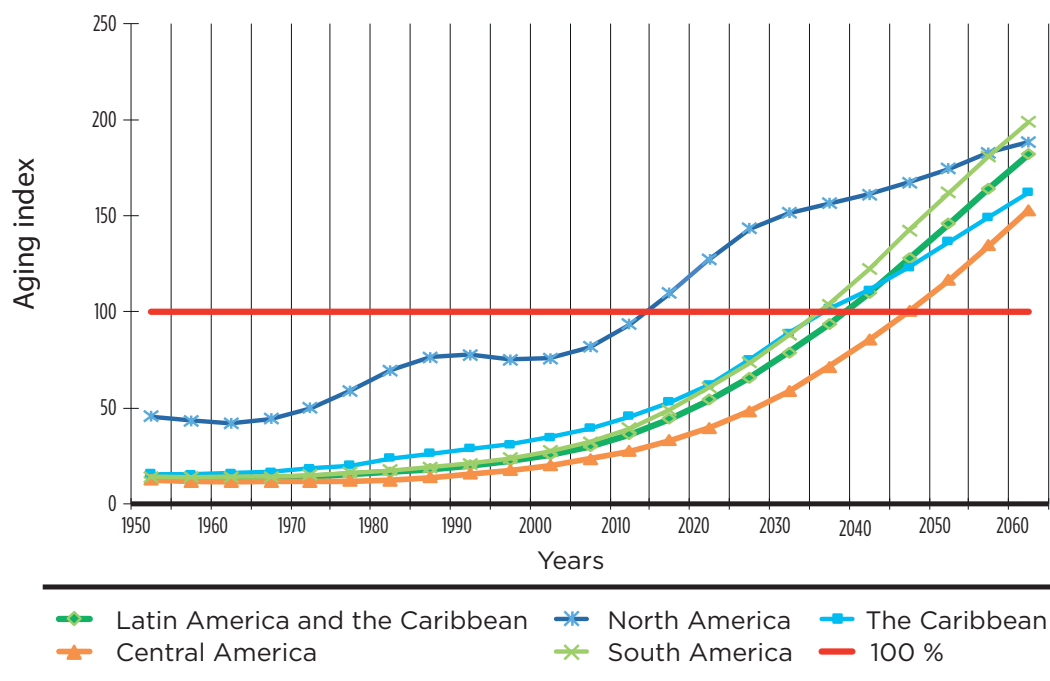


Source: Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

Otra forma de considerar un país como envejecido es cuando se Another way of considering aging in a country is to compare the number or proportion of older persons directly with that of youth, as this indicates a reduction in a country’s capacity to renew generations. Defining the 60 and over age brackets as “older persons” and people under 15 “as youth,” the aging index can be used to illustrate the current situation in Latin America and the Caribbean. Figure 22 presents the aging index of the Americas’ subregions. This changes nothing in the indicators already analyzed, but it highlights two important facts when comparing subregions.

First, for many decades, the subregions of Latin America and the Caribbean had fewer than 50 older persons for every 100 youth, but aging began to accelerate in the past decade (2010), though more slowly in Central America. Aging in the Caribbean is expected to slow in relation to the regional average, but in South America, the most populous subregion, it is accelerating and even projected to overtake North America after 2050.

**Figure 22.** Region of the Americas: aging index, by subregion, 1950–2060



Note: Aging index: Ratio of the number of people aged 60 and over to the number of people under 15.

Source: Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

Second, there are different times when subregions can be considered old (with more older people aged 60 and over than young people under the age of 15) with an aging index exceeding 100. Due to North America’s lengthy demographic transition, its population became old around 2010, and this will occur in Latin America and the Caribbean around 2040. This is happening because what most powerfully affects the speed of the aging process is the speed of fertility decline and the level reached in the final stages of the demographic transition.

Table 1 shows the year when every country in the Region will reach this milestone in the demographic dynamic. In 2005, Canada was the first country in the Americas to do so, with an older population of nearly 18%. Among the Latin American and Caribbean countries other than the small island States, Cuba was the first to reach this historic milestone (in 2011), when it equalized the share of youth and older persons, with each group accounting for roughly 17.7% of the total population.

**Table 1.** Region of the Americas: year countries equalize the share of youth and older persons in the total population.

YEAR	COUNTRY (PERCENTAGE OF PEOPLE AGED 60 AND OVER)	YEAR	COUNTRY (PERCENTAGE OF PEOPLE AGED 60 AND OVER)
2005	Canada (17.9)	2037	Jamaica (19.5)
2009	Martinique (20.0)	2040	Grenada (20.4). Peru (20.3)
2011	Cuba (17.7)	2042	Argentina (20.4). Mexico (19.5)
2013	Barbados (19.3). Curaçao (20.3). Puerto Rico (20.0). United States (19.6)	2044	El Salvador (19.2). Panama (21.0)
2014	Guadeloupe (22.0)	2047	Dominican Republic (20.2). Venezuela (Bolivarian Republic of) (19.9)
2016	Aruba (19.0)	2048	Ecuador (20.6)
2021	Uruguay (20.5)	2049	Nicaragua (20.0)
2023	Chile (19.1)	2052	Suriname (20.1)
2024	Trinidad and Tobago (19.3)	2053	Belize (20.1). Honduras (19.3)
2025	Saint Lucia (17.7)	2054	Guyana (20.1). Paraguay (20.0)
2027	Costa Rica (19.0)	2058	Bolivia (Plurinational State of) (20.2)
2030	Brazil (18.9)	2060	Guatemala (20.3)
2031	Antigua and Barbuda (20.2)	2066	Haiti (19.8)
2032	Colombia (18.9). St. Vincent and the Grenadines (19.3)	2075	French Guiana (21.6)
2034	Bahamas (19.2)		

*Source:* Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

As the table shows, the rest of the countries reach will this milestone in succeeding years and by 2075 every country in the Region will have more older persons than people under 15. Many Caribbean countries (Barbados, Saint Lucia, Trinidad and Tobago), as well as Chile and Uruguay, have an inverse proportion of young people and adults between 2015 and 2022. Toward 2030, Brazil and Costa Rica will join that group. Toward 2035, Antigua and Barbuda, Colombia, Jamaica, and Saint Vincent and the Grenadines will do so, and Guatemala, French Guiana, and Haiti are expected to reach this point after 2060.

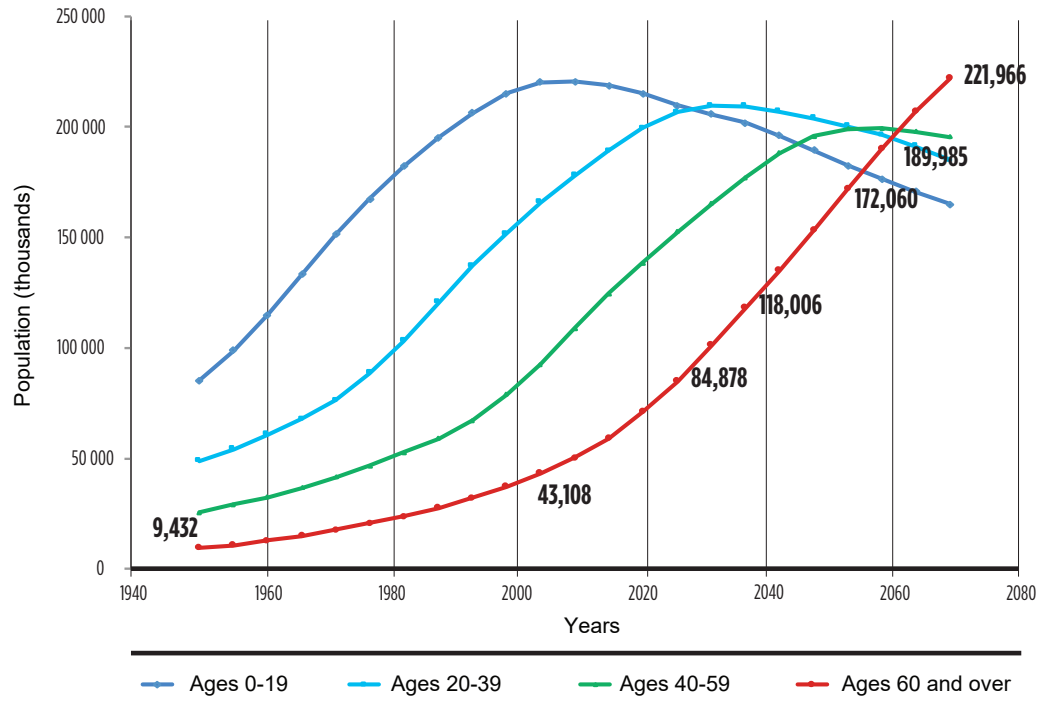
Before a population becomes old, the age structure goes through a continuous aging process in which the size of the age groups increases in each generation. Dividing the population, by age, into two groups of adults (30) (in addition to youth and older persons) paints a more

complete picture of the entire transition from a very young to a fully aged population and shows the size of each generation. To illustrate this, we can divide the population into people aged 0–19, 20–39, 40–59, and 60 and over and look at the size of the cohorts over time for the average of Latin America and the Caribbean (Figure 23). A young society can be defined as one in which an absolute majority of its population is under the age of 20; a young adult society, as one in which the majority of the population is between the ages of 20 and 39; an adult society, as one in which the majority of the population is between the ages of 40 and 59 and finally, an old society, as one in which the majority of the population is aged 60 and over.

This process is clearly observed in Latin America and the Caribbean, where fertility rates were very high for a time and then fell after a drop in infant mortality. This process resulted in a very large wave of births, with a synchronous movement into the future, since neither migration nor abrupt changes in fertility altered the size of this wave. Over time, these cohorts aged, carrying the effect of past fertility rates. This has not been the case with the countries of North America, which experienced a baby boom where cohort sizes abruptly change (see Appendix 1, Figure A1.4). The points where the trajectories of the different cohorts cross (Figure 23) are major milestones in the demographic dynamic and the society of Latin America and the Caribbean as a whole, since they are generations that compete for social assistance, education, health care, and the labor market, among other needs throughout life, and whose size and trajectories are very predictable.

Based on this definition, Latin America and the Caribbean will, on average, have young societies until 2020–2025, when they will become young adult societies. If the projections are confirmed in the future, the subregion will spend little time in this situation and become an adult society in 2045, with the majority of its population between the ages of 40 and 59. Shortly thereafter, in less than 10 years, the largest age group in the subregion will be people aged 60 and over (see Figure 23). That is, by 2055, each of the aforementioned age groups will have fewer than 200 million people, and the 60-and-over group will have more than 200 million. This is highly significant, not only for the labor market but for programs and activities in health, care/assistance, and other areas. Naturally, these times vary in the subregions of Latin America and the Caribbean (see Appendix 1, Figures A1.5 to A1.7) and the countries.

**Figure 23.** Latin America and the Caribbean: population, by age group, 1950–2060



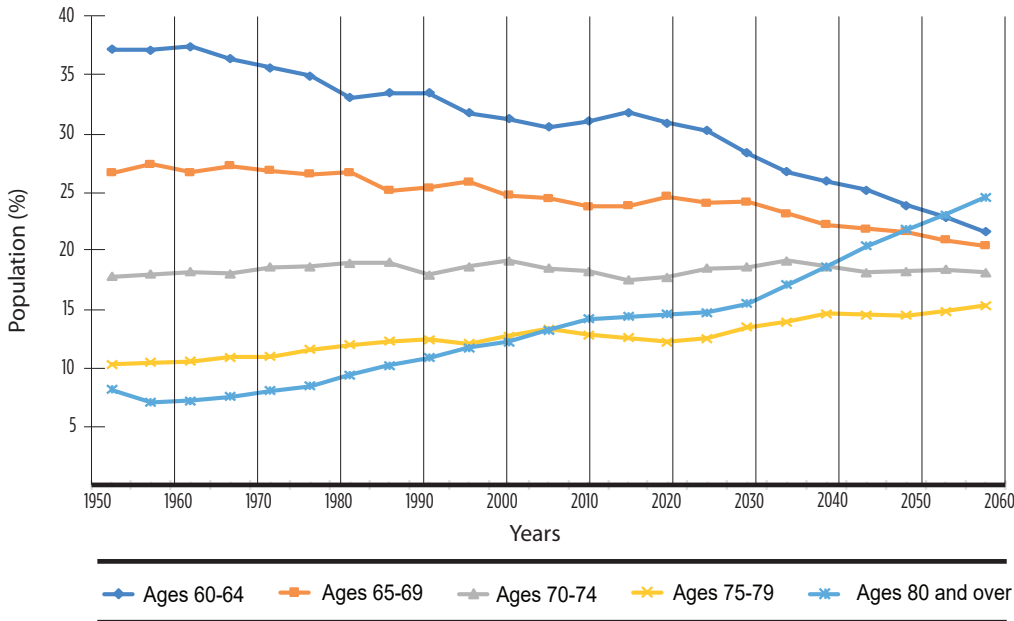
Source: Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

### Population aging in older persons

The demographic transition has led to population aging. At first, this is largely determined by the decline in fertility, resulting in fewer and fewer births in the population. However, with the advance of the demographic transition, the decrease in mortality (mainly the increase in life expectancy at birth and the survival of people once they reach 60), leads to population aging in the older population itself. This demographic event has implications that are even more significant for healthy aging.

Figure 24 presents the age distribution of the segment of people aged 60 and over by five year age groups throughout the demographic transition in Latin America and the Caribbean. As can be seen, over time, the size of the younger groups relatively decreases time, while that of the two older groups increases. As a result, people aged 80 and over will have a relatively greater weight in the segment, representing the most numerous group in this population in the 2050s.

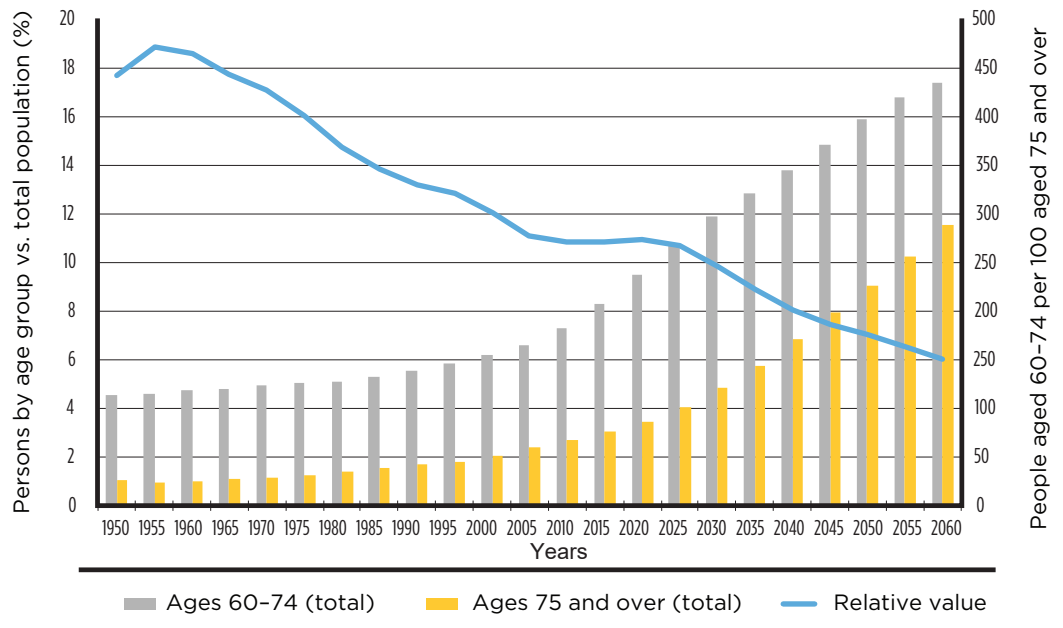
**Figure 24.** Latin America and the Caribbean: relative distribution of the older population, by age group, 1950–2060



Source: Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

Internal aging is even clearer in Figure 25, which presents a comparison of the 60–74 and 75-and-over age groups, not as a relative percentage within the group but as a percentage of the total population (bars) and a comparison between the figures for the two groups (line). In fact, the relative size of both groups grows throughout the demographic transition, but the older group grows at a much faster rate, so that in the period shown, the 75-and-over age group in Latin America and the Caribbean is approaching the 60–74 age group. In 1950, there were approximately 450 people aged 60–74 for every 100 aged 75 and over, and, by 2060, that figure is expected to have fallen to 150.

**Figure 25.** Latin America and the Caribbean: percentage of population aged 60–74 and 75 and over and relative size of these groups, 1950–2060

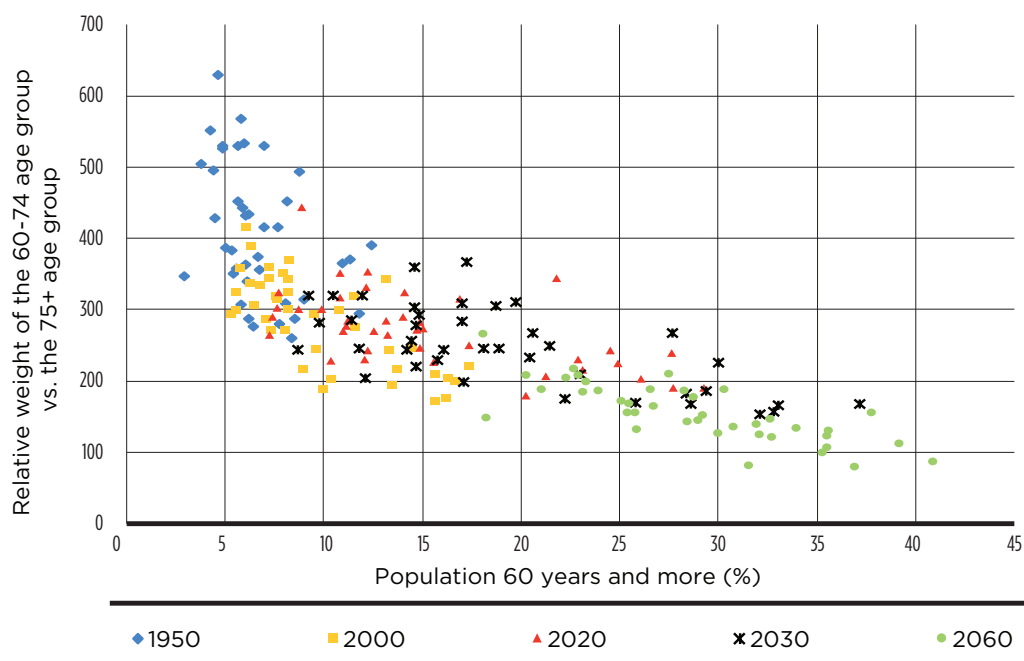


Source: Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

This aging of older persons will be seen in all countries, each at its own pace. It is important to understand that older persons tend to be less independent and have greater limitations, which can lead to disability at advanced ages and require more care. Figure 26 clearly shows how the ratio of the population aged 60–74 and aged 75 and over changes throughout the demographic transition in the countries. In 1950, there are countries with a very high ratio of older groups (more than 600 per 100, as in the case of Nicaragua), where survival and life expectancy at birth have hardly increased; but there are countries at different stages of the demographic transition with a ratio of below 300 per 100, as in the case of Uruguay.

By 2020, these indicators had become more homogeneous in the Region, with values of around three people aged 60–75 for each person 75 and over. Countries slightly above this 3:1 ratio include Belize, Haiti, Nicaragua, Paraguay, the Bolivarian Republic of Venezuela, and many islands in the Caribbean. Countries such as Cuba, Puerto Rico, and Uruguay, have values closer to 2:1.

**Figure 26.** Region of the Americas: relative weight of the 60-74 age group vs. the 75+ age group, by country. 1950, 2000, 2020, 2030, and 2060



Source: Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

## Survival after age 60

An increase in life expectancy at age 60 can be seen in every country in the Region. In Latin America and the Caribbean, a 60-year-old has an average of 21.9 years left to live in the 2015–2020 quinquennium (see Table 2). It should be noted that there are gender differences, especially in countries with low mortality levels: women have a higher survival rate and a 2.8-year advantage over men, on average. Chile, Costa Rica, and Panama have the longest survival at age 60, ranging from 23 to 25.5 years, in addition to life expectancy gaps with countries. Older persons will continue to gain years of life in the Region: life expectancy at age 60 will be 23.4 years in the period 2030–2035 and will increase to 26.2 years between 2060 and 2065.

Women will continue to live longer than men, on average, although there will be differences from country to country. Between 2030 and 2035 and 2060 and 2065, Chile, Costa Rica, and Panama will continue

to exhibit the widest gaps between women and men (more than six years), and the gap in Chile and Costa Rica will be even wider. Uruguay will also join this group of countries and have a gender gap of more than six years. In contrast, in Haiti and Jamaica, which have short life expectancy at age 60, the gap between men and women is less than two years and will narrow over the decades.

**Table 2.** Latin America and the Caribbean: life expectancy at 60, by sex and subregion, 2015–2065

SUBREGION	MEN			WOMEN			TOTAL		
	2015-2020	2030-2035	2060-2065	2015-2020	2030-2035	2060-2065	2015-2020	2030-2035	2060-2065
Latin America and the Caribbean	20.2	21.7	24.8	23.5	24.9	27.4	21.9	23.4	26.2
The Caribbean	20.5	21.7	23.4	23.2	24.3	25.7	21.9	23.1	24.6
Central America	20.3	21.6	24.6	22.7	24.2	26.8	21.6	23.0	25.7
South America	20.2	21.8	25.0	23.8	25.2	27.8	22.1	23.6	26.5

*Source:* Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

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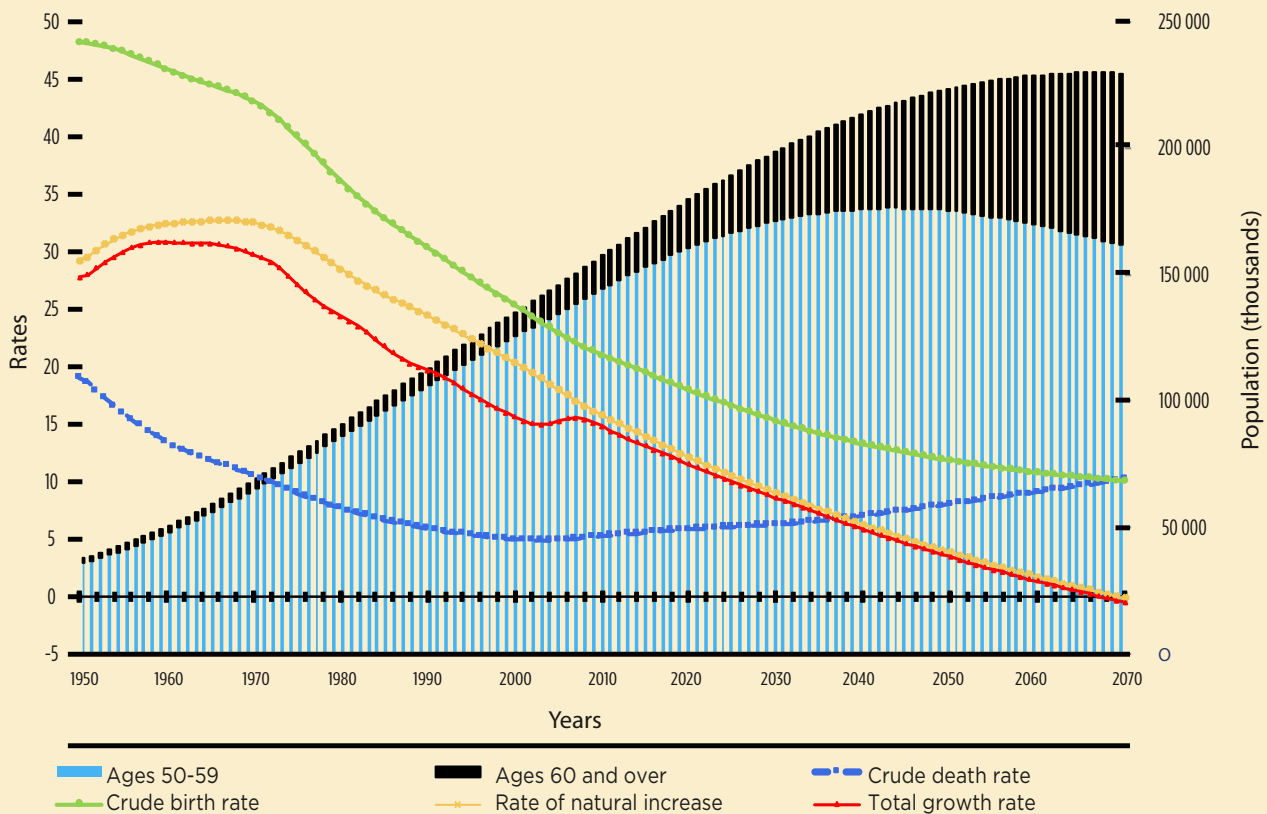
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# Appendixes

## Appendix 1. Statistics by subregion

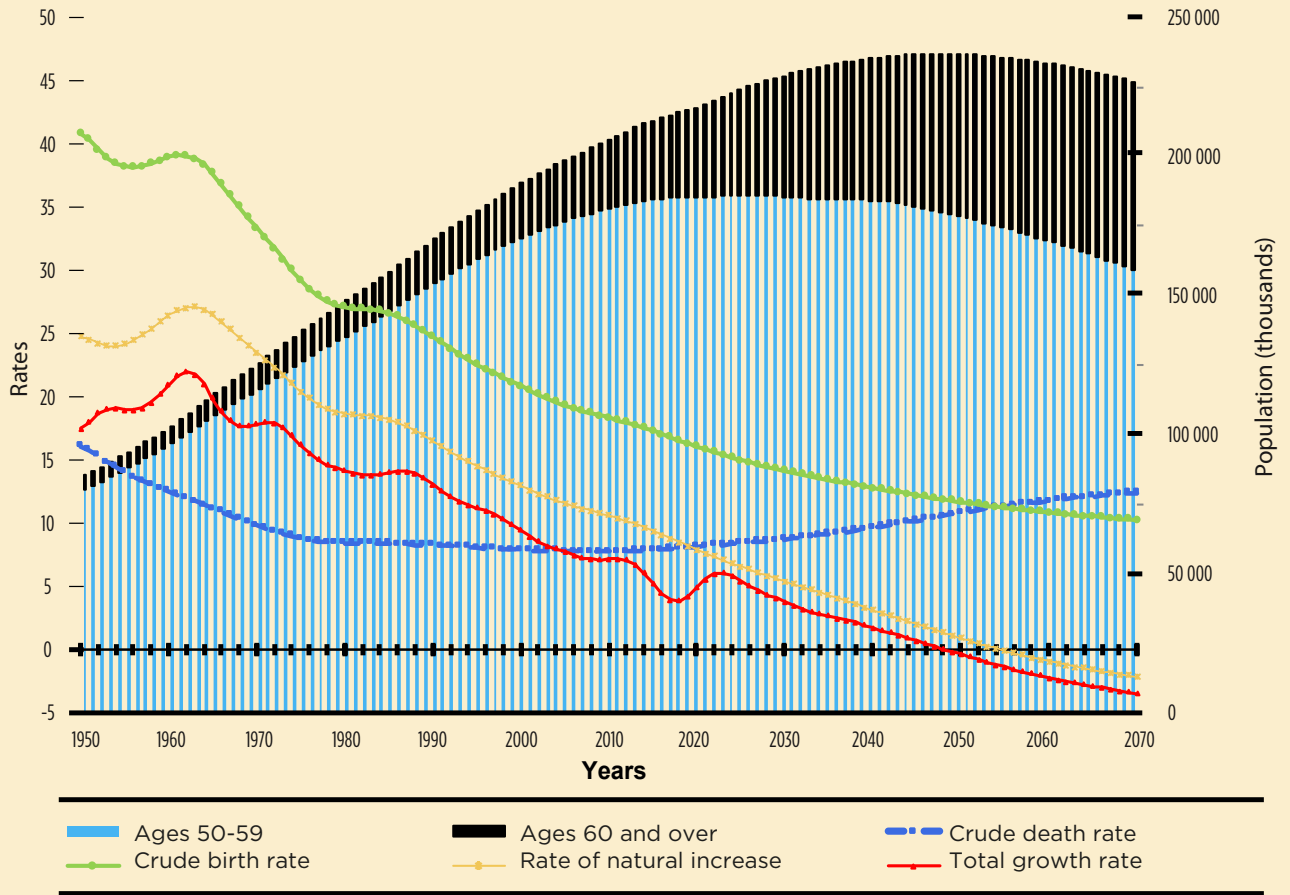
Figures A1.1 to A.1.3 present the trends in demographic transition indicators for the different subregions of Latin America and the Caribbean from 1950 to 2070, completing the picture presented in Figures 1 and 2, which illustrate the same trends for the average for Latin America and North America, respectively. The effects of the demographic transition in the significant population aging are clearly observed in these figures, as is the varied behavior of emigration in demographic growth in the Caribbean. Changes in the age structure (the transition from young to older societies) in all subregions are illustrated in Figures A1.4 to A1.7 (the data for Latin America and the Caribbean are presented in Figure 23).

**Figure A1.1.** Central America: crude death and birth rates and total and natural growth rates, total population and by age group. 1950-2070



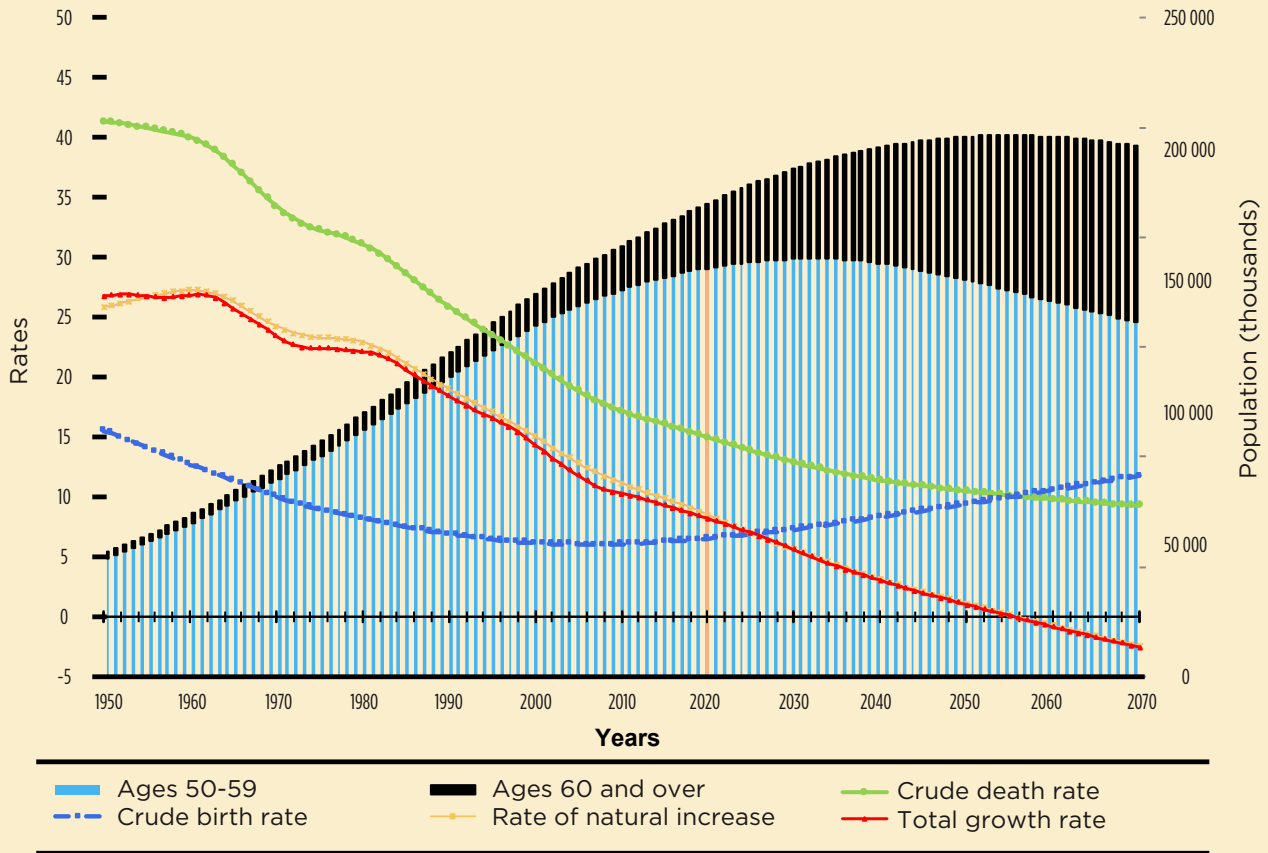
Source: Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

**Figure A1.2.** The Caribbean: crude death and birth rates, total and natural growth rates, and total population, by age group, 1950–2070



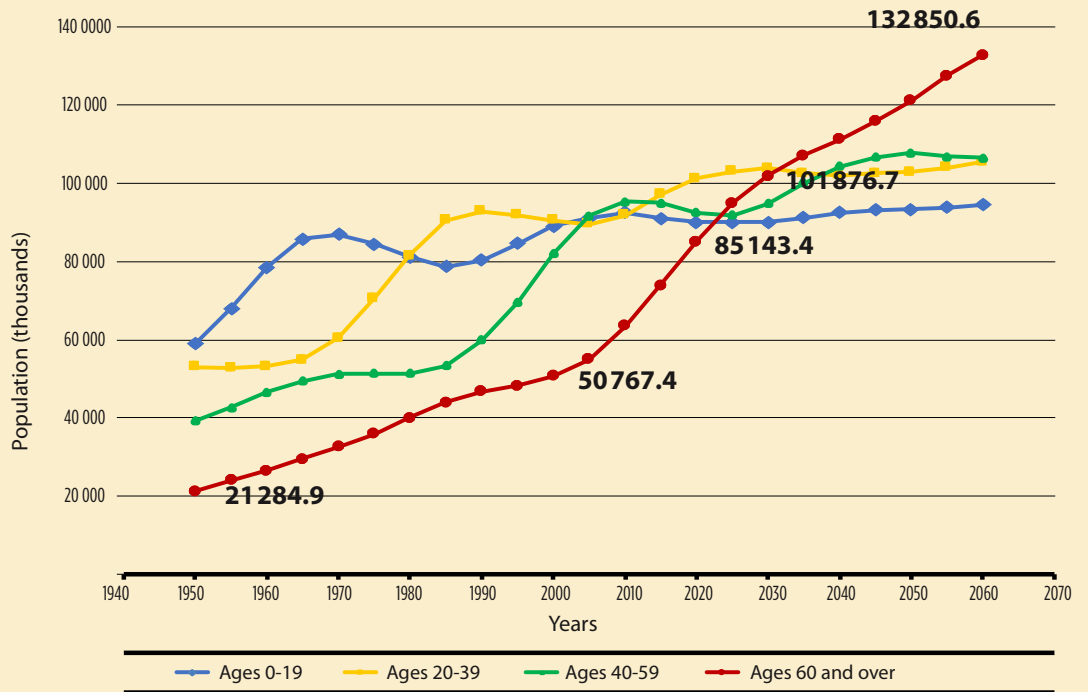
Source: Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

**Figure A1.3.** South America: crude death and birth rates, total and natural growth rates, and total population, by age group, 1950–2070



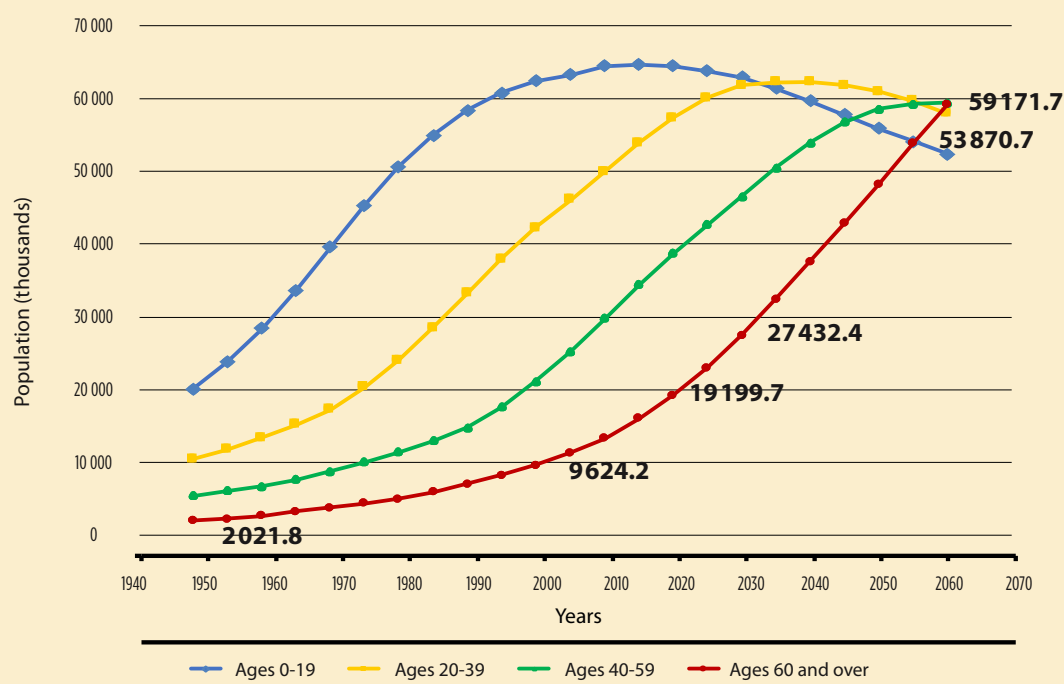
Source: Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

**Figure A1.4.** North America: population, by age group, 1950–2060



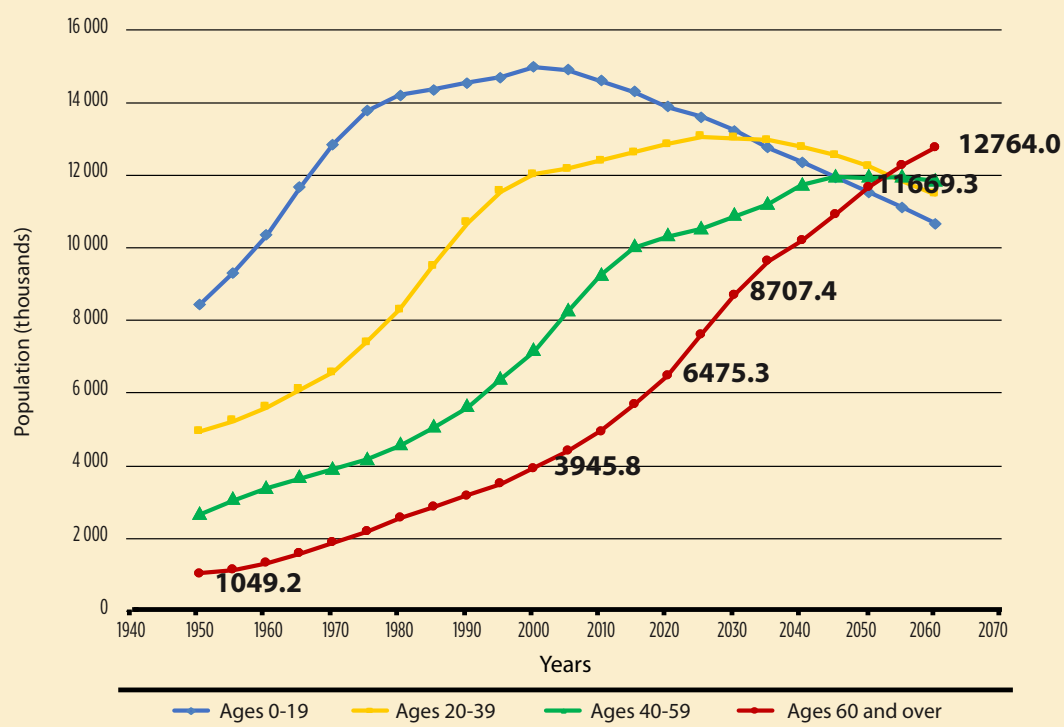
Source: Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

**Figure A1.5.** Central America: population, by age group, 1950–2060



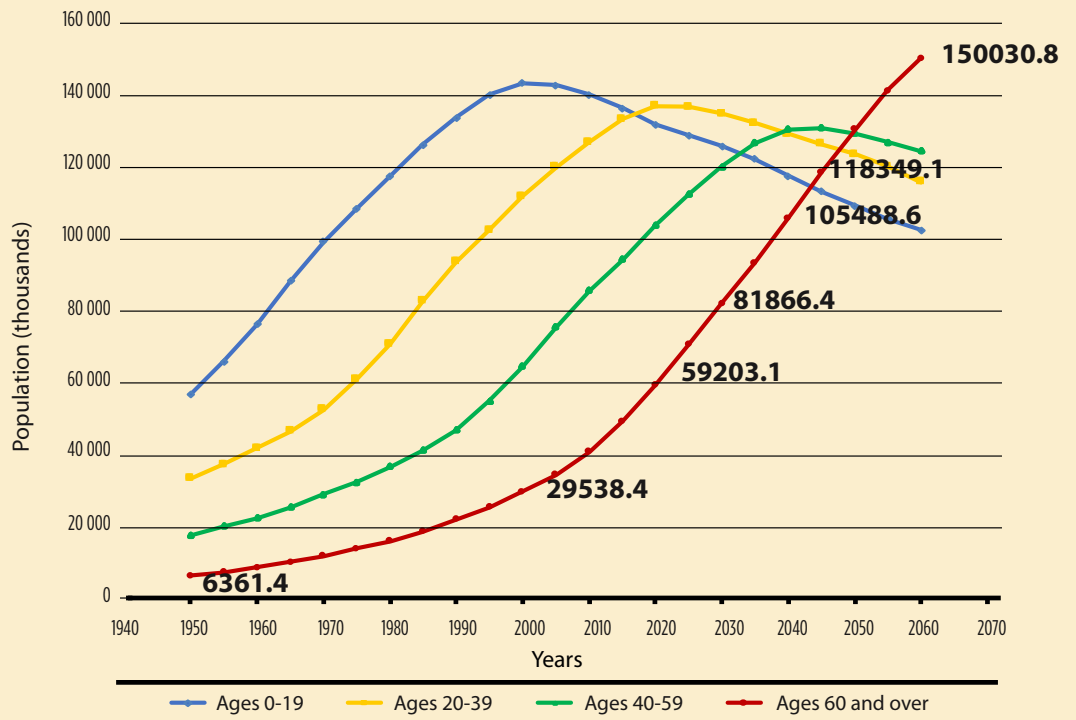
Source: Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

**Figure A1.6.** The Caribbean: population, by age group, 1950–2060



Source: Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

**Figure A1.7.** South America: population, by age group, 1950–2060



Source: Based on United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects 2019. New York: United Nations; 2019. Available from: <https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0>.

## Appendix 2. Global mortality patterns

Dying before reaching adulthood was a very common occurrence in the world until the early 19th century. Despite the difficulties involved in obtaining historical estimates, since many births were not recorded if death occurred at a very young age, there is evidence that about 50% of live births ended in childhood deaths among the working class in some regions of the United Kingdom in the 1830s and 1840s<sup>10</sup>. Moreover, mothers often died from common complications of pregnancy and childbirth.

Primarily in the late 19th and early 20th century, countries with more advanced economies began to see a significant decline in infant and child mortality, beginning the transition from high mortality rates to low ones. To classify the stages of this mortality transition process, Gwatkin identifies three waves of rapid reduction in mortality: first, in Western Europe and the United States;<sup>11</sup> second, in the countries of Eastern and Southern Europe; and third, following World War II in developing countries.

Unlike changes in fertility, changes in mortality are not the main driver of change in the age structure and population aging. However, in addition to being the main demographic change of the past two centuries, the steady decline in mortality, especially infant mortality, also triggered the fertility transition in the vast majority of cases with reliable data. To understand the demographic transition, it is first important to keep in mind the factors associated with the decline in infant and child mortality and their subtleties.

Several factors have fueled the steady decline in mortality, especially in infancy and childhood. They include socioeconomic determinants associated with an increase in per capita income, such as better nutrition levels, improved living conditions and housing, the universalization and expansion of school systems, and urbanization. Other important factors are associated with improvements in health, hygiene, and basic sanitation systems<sup>12</sup>, and the unprecedented progress in the control of infectious and parasitic diseases and maternal, perinatal, and nutritional disorders<sup>13</sup>.

<sup>10</sup> See United Nations, Department of International Economic and Social Affairs. Consequences of mortality trends and differentials. Population Studies, No. 95. New York: United Nations; 1986. 191 pp. Available from: [https://www.un.org/development/desa/pd/sites/www.un.org/development/desa/pd/files/files/documents/2020/Jan/un\\_1986\\_consequences\\_of\\_mortality\\_trends\\_and\\_differentials.pdf](https://www.un.org/development/desa/pd/sites/www.un.org/development/desa/pd/files/files/documents/2020/Jan/un_1986_consequences_of_mortality_trends_and_differentials.pdf).

<sup>11</sup> See Gwatkin D. Indications of Change in Developing Country Mortality Trends: The End of an Era? Population and Development Review. December 1980;6(4): 615-644. Available from: <https://www.jstor.org/stable/1972929>.

<sup>12</sup> See Preston S. The Changing Relation between Mortality and Level of Economic Development. Population Studies. July 1975;29(2):231-248. Available from: <https://www.jstor.org/stable/2173509>

<sup>13</sup> See Economic Commission for Latin America and the Caribbean. Primera Reunión de seguimiento de la Declaración de Brasilia [Internet]. Santiago: ECLAC; 2008. Available

The mortality transition is generally accompanied by an epidemiological transition: a change in the pattern of the most prevalent diseases, in which communicable diseases were displaced by noncommunicable diseases, and the highest incidences of disease burden shifted from younger to older age groups<sup>14</sup>. The effect of the change in the disease pattern on infant mortality levels is easily observed with disaggregation of infant mortality by age group in the neonatal and post-neonatal period. While there is a decrease in both indicators when infant mortality is very high, post-neonatal mortality associated more with exogenous causes of death decreases the most at the beginning of the mortality transition.

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from: <http://www.cepal.org/es/eventos/reunion-seguimiento-la-declaracion-brasilia-0>; Economic Commission for Latin America and the Caribbean. Latin America and the Caribbean: looking ahead after the Millennium Development goals. Regional Monitoring Report on the Millennium Development Goals in Latin America and the Caribbean, 2015. Santiago, Economic Commission for Latin America and the Caribbean; 2015. 88 pp. Available from: <https://repositorio.cepal.org/handle/11362/38924>; Di Cesare M. El perfil epidemiológico de América Latina y el Caribe: desafíos, límites y acciones. Santiago, Economic Commission for Latin America and the Caribbean; 2011. 63 pp. Available from: <https://repositorio.cepal.org/handle/11362/3852>.

14 See Omram A. R. The Epidemiologic Transition: A Theory of the Epidemiology of Population Change. The Milbank Memorial Fund Quarterly. October 1971;49(4):509-538.

## Appendix 3. Factors explaining changes in fertility

Historically, the number of live births in the world was very high, with variations resulting mainly from the spacing of pregnancies using traditional contraceptive methods, and from delaying the age of sexual initiation, often by postponing the age of the first marriage. Data on past fertility trends is unreliable in most countries, but the number of babies who survived (not voluntary control of the number of live births) was what kept the population at near equilibrium, with high fertility and high infant mortality rates.

To understand the fertility transition in Latin America and the Caribbean, it is necessary to briefly describe the beginning of this transition. The first known history of a deliberate reduction in the number of live births, which marked the beginning of the fertility transition, occurred in France after the French Revolution in 1790<sup>15</sup>. In the English-speaking and northern European countries, the transition began in 1880, followed 10 years later by a gradual decline in the southern European countries. In Eastern Europe, the decline began many decades later, in the 1930s. Beyond Europe (and countries with European cultures), the first country to begin the fertility transition was Japan. However, it was not until after World War II that it experienced a very steep and rapid decline in fertility rates<sup>16</sup>. It should be noted that countries that began the fertility transition earlier generally had a slower transition, while it was faster in those where it began later, a phenomenon later repeated in other regions.

Why this transition began in the most developed countries is a matter of debate, involving complex behavioral changes during periods in which the associated data are scarce. Since there are no reliable records of sustained fertility control prior to the steady decline in infant mortality, this could explain the start of the fertility transition. This hypothesis is buttressed by the fact that the countries and regions leading the mortality transition were also leaders in the fertility transition. However, it is debated whether the same causes and forces that triggered the decline in mortality could influence the decline in fertility in a cause-and-effect loop. Under this hypothesis, socioeconomic development and modernization (urbanization, industrialization, higher consumption, expansion of education, the shift to wage labor, better health services,

<sup>15</sup> See Willekens F., Demographic transitions in Europe and the World. In: Matthijs K., Neels K., Timmerman C., Haers J., Mels S. (eds.). Population Center for Health and Gender Equity in Europe, the Middle-East and North Africa. London and New York: Routledge, Taylor & Francis Group; 2015. Available from: [https://www.researchgate.net/publication/305993537\\_demographic\\_transitions\\_in\\_europe\\_and\\_the\\_world](https://www.researchgate.net/publication/305993537_demographic_transitions_in_europe_and_the_world).

<sup>16</sup> See Chesnais J. C. The demographic transition: stages, patterns and economic implications. A longitudinal study of sixty-seven countries covering the period 1720-1984. New York: Clarendon Press, 1982.

introduction of social security, etc.) changed the cost-benefit ratio of having children<sup>17</sup>. This modernization process, moreover, would lead to a reversal of the intergenerational flow of wealth from parents to children, causing the demand for children to fall while generalizing the desire for a smaller family with greater spatial and social mobility<sup>18</sup>.

These explanations of the causes of the fertility transition are not simple and cannot be generalized. According to them, less-developed countries should take a long time, or perhaps not even begin the fertility transition, even if a mortality transition occurred through the embrace of new technologies imported from developed countries. This should lead to a rapid increase in their populations due to the imbalance between mortality and fertility, as was observed in countries that already had gone through the demographic transition<sup>19</sup>. However, years later, as some developing countries were beginning their fertility transition, Coale<sup>20</sup> recognized that fertility rates can decline in any context, provided that three conditions are present: 1) people must be aware that they can control fertility (i.e., women and men must have information and knowledge about how to limit the number of children when they have an active sex life); 2) people must realize that this control benefits their lives and those of their families; and 3) effective contraceptive methods and knowledge must be available for appropriate and timely use.

Other explanations include diffusion-of-innovation theories,<sup>21</sup> which posit that the transition begins with a social group's adoption of innovative behavior in the realm of ideas and culture, limiting fertility by terminating it, not just by spacing out births. This innovative behavior would later be adopted by other social groups through diffusion mechanisms. In this scenario, there could be a fertility transition even in less-developed countries and regions through the diffusion of this behavior from more developed regions; however, it would occur in different ways, depending on the characteristics of local processes.

Following a line of reasoning more closely associated with social behavior, changes in gender relations, especially women's place in society, are strongly correlated with the fertility transition, perhaps even

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17 See Becker G. S. An economic analysis of fertility. In: Becker G. S. Demography and Economic Center for Health and Gender Equity in developed countries. New York, NBER; 1960.

18 See Caldwell J. C. Theory of fertility decline. London: Academic; 1982.

19 See Coale A., Hoover E. População e desenvolvimento econômico. Rio de Janeiro: Fundo de Cultura; 1966.

20 See Coale A. The demographic transition reconsidered. In: International Population Conference, Liège, 1973. Liège: International Union for the Scientific Study of Population; 1973. pp. 53-72.

21 See Knodel J., Van De Walle E. Lessons from the past: policy implication of historical fertility studies. Population and Development Review. June 1979;5(2):217-246.

triggering it. Folbre<sup>22</sup> argues that the modernization process weakens patriarchy, but instead of eliminating the inequalities between men and women, it diminishes the economic benefits of children, making the decision to have a numerous family extremely costly without these benefits. Changes in gender relations that raise the status of women in society impact reproductive behavior due to changes in three dimensions: inequality in power; inequality in “access to” and “control over” different resources; and inequality in prestige<sup>23</sup>. In fact, the gender perspective is not in opposition to the different approaches to the fertility transition but is an additional element that helps explain the differences in fertility reduction processes, with the adoption of a pattern of preference for fewer children<sup>24</sup>.

The development process, the way in which the innovation-diffusion of a new reproductive behavior was adopted, and the change in gender relations all occurred differently over time in the different regions of the world. These processes are affected by intermediate variables such as religion, education, and women’s participation in the labor market. Furthermore, all these processes are framed by direct mechanisms, also called proximate determinants of fertility (such as unions or the initiation and frequency of sexual relations), which affect exposure to a view that would allow for more efficient and deliberate control of births (such as modern contraception or the interruption of pregnancy, or even other natural control methods employed in different societies)<sup>25</sup>.

It is not only when the transition begins but the level of fertility at its start and the speed of decline that determine the different trajectories of the fertility transition in the different regions. Coupled with this is the desired fertility level at the end of the transition, which at one time was considered to be replacement level (close to 2.1 children per woman). It has been shown, however, that fertility levels are continuing to fall to very low rates in many countries, including in Latin America and the Caribbean. In fact, this subregion is unusual, with different trajectories in a brief period of time.

22 See Folbre N. Of Patriarchy Born: The Political Economy of Fertility Decisions. *Feminist Studies*. 1983;9(2):261-284. Available from: <https://www.jstor.org/stable/3177490>.

23 See Mason K. *The Impact of Women’s Social Position on Fertility in Developing Countries*. Houghton: Population Studies Center, The University of Michigan; 1988.

24 See Alves J. E. D. *Transição da fecundidade e relações de gênero no Brasil [tesis doctoral]*. [Belo Horizonte]: Universidad Federal de Minas Gerais; 1994. 298 pp. Available from: [https://repositorio.ufmg.br/bitstream/1843/MCCR-7UWH66/1/jos\\_eustaquio\\_diniz\\_alves\\_](https://repositorio.ufmg.br/bitstream/1843/MCCR-7UWH66/1/jos_eustaquio_diniz_alves_); McDonald P. Gender Equity in Theories of Fertility Transition. *Population and Development Review*. 2000;26(3):427-439. Available from: <https://www.jstor.org/stable/172314>.

25 See Bongaarts J. A Framework for Analyzing the Proximate Determinants of Fertility. *Population and Development Review*. 1978;4(1):105-132. Available from: <https://www.jstor.org/stable/1972149>.

With the object of summarizing the available knowledge about the health and well-being of older persons in the *Region of the Americas at the start of the Decade on Healthy Aging 2021-2030* and reporting on population aging, this publication provides current information on the demographic outlook in the Region. The data paint a detailed picture of the effects of the demographic transition, major trends, and population profiles, taking into account the results of the COVID-19 pandemic.

Rapid population aging in Latin America and the Caribbean is shaping the capacity of countries and health systems to meet the specific demands of their populations and will continue to do so. Therefore, in order to design inclusive and sustainable systems, we must have current information to facilitate decision-making. This publication facilitates priority setting at the regional, national, and local levels, and provides reliable, evidence-based data and information to guide the adoption of effective measures, facilitate monitoring, and promote evidence based public health policies.

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