

CUBA'S FUTURE ECONOMIC CRISIS: THE AGEING POPULATION AND THE SOCIAL SAFETY NET

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In this paper I examine the impact demographic trends are having on the evolution of Cuba's population age structure. The analysis is conducted within a comparative perspective and focuses on the most significant demographic development of the late twentieth century and the first half of the twenty-first, the ageing of the world's population. The analyses suggests that Cuba will confront serious difficulties in years to come as a result of these demographic trends. Their impact will be so profound and pervasive as to interfere with the country's prospects for long-term economic development, even after Cuba discards its current economic system and becomes fully integrated into the international economy.

A GLOBAL OVERVIEW

Two major turning points in world demographic history will mark the period from 1750 to 2050. The first was a gradual but eventual explosive growth in human population. This was accompanied by the emergence of population age structures largely dominated by the young. With the onset of gradual mortality declines, population growth rates began to increase, in some cases dramatically. The world's population rose from about 800 million in 1750 to 1.7 billion in 1900. Following the Second World War, the pace of growth accelerated further, particularly in the developing world, with global population reaching 4 billion by 1975 (Caldwell and Schindlmayr 2002). By 2000, 6 billion humans inhabited the earth; current population projections suggest that the number may well reach 9.3 billion by 2050 (United Nations 2002).

Despite continuous growth, the global population growth rate has begun to slow down due to declines in fertility rates. Sustained fertility declines and continued mortality declines at the older ages on a global scale are giving rise to another equally momentous demographic transformation: the rapid ageing of the world's population. While population projections may only imperfectly capture the magnitude of the transformation—particularly as such projections seek to anticipate distant demographic developments fifty years into the future—the trends they suggest are credible enough to warrant a great deal of concern.

So significant is the projected change that by 2050, for the world population as a whole, the share of the young population (under 15 years of age)—formerly dominant—is expected to attain rough parity with that of the older population (above age 60), about 21% each. The world's median population age, consequently, is expected to rise from 27 years in 2000 to 36 years by 2050 (Population Division 2002a: 15 and 17). These changes, however, will not impact all countries equally, as mortality and fertility differentials across countries are quite wide and prevalent. Some countries, in fact, still evidence relatively high mortality and fertility rates. Irrespective of these gaps, and occasional setbacks such as that resulting from the current HIV/AIDS pandemic, the secular trend is for rates to converge as medical and public health advances continue to be diffused around the globe. Preferences for smaller family size, increasing female labor force participation rates, and the growing avail-

ability of modern contraceptives, among other factors, are contributing factors behind continued fertility declines.

Other significant demographic developments are impacting the characteristics of the elderly population. The various segments of the elderly population are increasing at different rates. Growth rates for the older-old population (above 80 years of age) are higher than for the old (the population above age 60) or the young-old (between 60 and 79 years of age). Women, barring exceptions in a few countries, have achieved more significant life expectancy increases than males, both at birth and at older ages. Across the age distribution (except at birth), but progressively more so at older ages, the number of women exceeds that of males.

These demographic trends have important economic and social implications. Since people are surviving to older ages, they are expending a growing number of years economically inactive. Thus, they are more likely to rely on pensions, personal savings, or family support to cover living expenses after retirement, as well as surviving into ages at which chronic diseases and disabilities are more frequent, acute and costly to treat. Major societal and financial adjustments will be in order to accommodate the needs of the old, at the same time as the number of economically active workers proportionally contracts. Pension and health care systems will be hard pressed as their client base experiences substantial growth, just as the number of active contributors to these systems contracts relatively and, in many countries, absolutely. More vulnerable are those retiree programs financed through active worker contributions (pay as you go systems) than those with substantial reserves accumulated over time through government or privately-sponsored trust funds or via individual beneficiary retirement accounts. In the United States, for example, concerns about the long-term viability and financial soundness of programs such as Social Security and Medicare are

driving an intense policy debate. Many other countries are tackling similar issues.

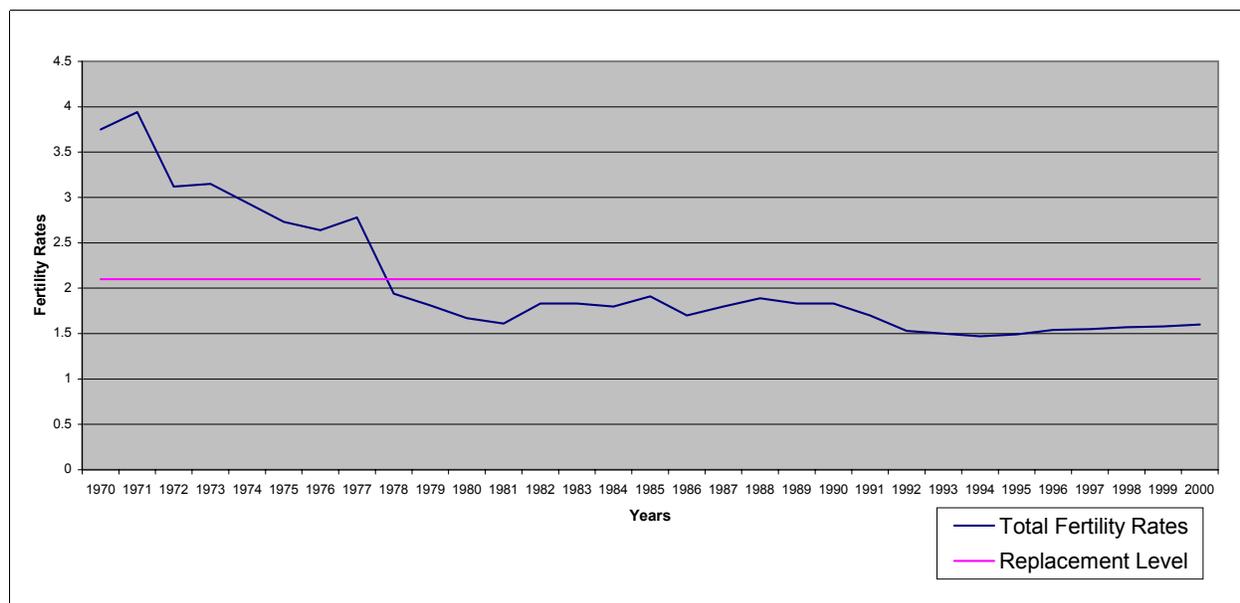
THE CUBAN CASE

Cuba generally conforms to the global demographic trends described above. In some important respects, however, the situation in Cuba differs from that in most other developing countries, while approximating that of the economically wealthier nations.

First, Cuba's demographic transition—the decline from high death and birth rates to low death and birth rates—began earlier than in most other developing countries (notable exceptions in Latin America were Argentina and Uruguay). Second, during the 1960s and early 1970s, the country experienced a brief baby boom followed by a rapid and sustained birth rate decline that within a few years brought fertility below replacement level, or the level at which population growth will eventually cease (discounting the potential population momentum associated with age structure features, or immigration) as the number of deaths eventually equals or exceeds the number of births. At Cuba's current mortality level, replacement fertility roughly corresponds to a total fertility rate (TFR) of 2.1.¹

Several factors contributed to the 1960s baby boom, a generally rare phenomenon only infrequently observed internationally. By the late 1950s, Cuba had already attained a fertility level low enough to allow for increases within normal demographic boundaries. But a number of social, economic and regulatory determinants associated with the profound changes produced by the revolution immediately after 1959 came together to produce the fertility increase. Policies to redistribute wealth; reforms in various social areas, including job creation; a favorable economic performance facilitated by a surge in aggregate demand and economic disinvestments; and popular expectations for a bountiful future fed by wildly exaggerated leadership promises of economic prosperity, led many Cuban couples to establish families or have additional children. At the same time, and for a few

1. The total fertility rate could be interpreted as the number of children the average woman has over her reproductive lifetime. The fraction represents an allowance for the replacement of dead offspring.

Figure 1. Total Fertility Rates in Cuba: 1970–2000

years, the revolutionary authorities enforced laws that proscribed induced abortions, just as consumer goods shortages, including contraceptive supplies, began to be felt (for a discussion, see Díaz-Briquets and Pérez 1982:517-523).

As a result, the crude birth rate rose by 35% between 1958 and 1963, only to gradually resume its prior secular decline. By 1974, the fertility decline was rapid, as shown by the trend in annual TFRs depicted in Figure 1, Cuba reaching below replacement fertility in 1978. Since then, the TFR has fluctuated within a narrow band, reaching its lowest historical level in the early 1990s, notably 1994, during the depth of the Special Period's economic crises. That the lowest TFR on record was in 1994, following the year when the economy contracted the most, is a testimony to the responsiveness of Cuba's fertility to economic conditions.

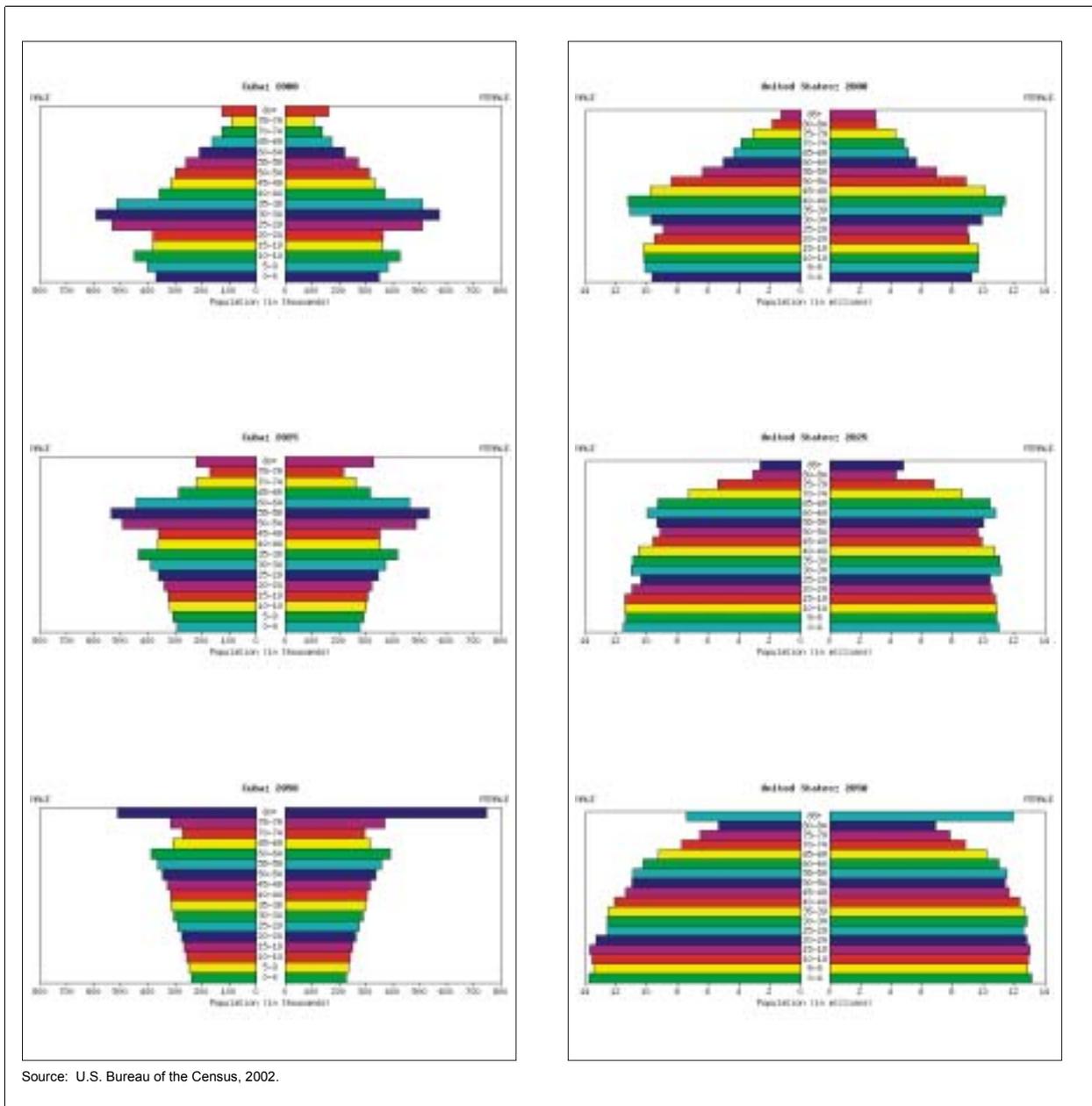
Cuba's Population Pyramid in 2000

The annual number of births in a population is not simply a function of age-specific fertility rates, the number of births produced by a given female age cohort (individuals sharing a common year or time interval when they were born). It is also influenced by the relative size of each age cohort within a population's age structure. An age-sex pyramid graphically describes the age and sex structure of a population.

Conventionally, the right side of the pyramid portrays the female population, with each bar representing a given age group (usually arranged in five-year intervals). The youngest cohort is the base, with progressively older age cohorts following, the oldest topping the pyramid. A high fertility/high mortality population pyramid has a broad base that tapers out gradually as age cohorts become older and die, thus the figure's traditional name.

A population pyramid is a very effective device to assess the effects of fertility and mortality fluctuations in a population's age-sex composition. As shown in the upper left panel of Figure 2, Cuba's age-sex pyramid in the year 2000 (U.S. Bureau of the Census 2002) presented an irregular shape, although still retaining the pyramidal outline associated with gradual fertility and mortality decline. Four indentations are apparent. Most prominent is that between 25 and 39 years of age—corresponding to the 1960s baby boom generation—followed by another indentation at ages 5 to 14, the offspring of the baby boom cohorts. Notice that the size of the 5 to 9 and 10 to 14 birth cohorts was larger than for birth cohorts preceding or following them, although TFR levels were nearly constant throughout the 1980s. This is a consequence of the larger absolute size of the potential pool of mothers born during the baby boom of the

Figure 2. Population Pyramids: Cuba and the United States



Source: U.S. Bureau of the Census, 2002.

1960s. The reduced numbers at ages 5 to 9 and 0 to 4 are consistent with the 1990s fertility decline and the increasing age of baby boom mothers. Finally, the disproportionately large birth cohort shown at the top of the pyramid is partly a statistical artifact since it includes all birth cohorts beyond 80 years of age. One last point is that at the oldest ages, most evident past 80 years of age, the relative share of the female population exceeds the male share by a considerable margin. This pattern is consistent with higher

female life expectancies at all ages, but especially among the elderly.

The Ageing of Cuba's Population

The demographic picture provided above (together with emigration) will bring to a halt Cuba's population growth. This may have already occurred, or will happen in the not-too-distant future. Another consequence is the rapid ageing of Cuba's population. The country's median age has risen from 23.4 years in 1960 to 32.9 in 2000; it is projected to increase to

43.1 by 2025, rising even further by 2050, the end of the projection period.

The results of the ageing process can be appreciated in the middle and lower left-hand panels of Figure 2, where population pyramids for Cuba in 2025 and 2050 appear. By 2025, just about two decades from now, the number of individuals reaching retirement age will be increasing rapidly, and just as significantly, the size of the older-old age cohort (above 80 years of age) will be almost twice as large as in 2000. Large-scale emigration, underway since the mid-1990s, further accentuates the aging trend since emigrants are generally drawn from the pool of the economically active.

The relative size of the older-old age cohort is projected to expand dramatically by 2050. In unison with this development, as the baby boom cohorts approach the end of life, Cuba's age-sex structure begins to resemble an inverted pyramid. The elderly, including the older-old, attains disproportionate importance within the overall population age structure. As the baby boom cohorts eventually die out, the proportional significance of the elderly population in Cuba's demography will diminish in relative terms, but the country will still have, if current projections hold, a much older population by the second half of this century than it is the case today, a pattern common to Cuba and many other countries.

Ageing Indicators

The concerns associated with an ageing population are manifold and primarily reflect the social and economic demands than an elderly population beyond its productive years places on a nation's resources. The satisfaction of these demands is determined, in part, by the ability of countries to accumulate or generate wealth to fulfill the needs of the elderly population. To some extent this is a function, in turn, of the relative numerical balance between generations.

Several demographic indicators can be used to assess these relationships, as shown in Table 1 for the world, world regions according to level of development, and selected countries in 2002 and 2050 (Population Division 2002b). For several of these indicators (e.g., percent of the population above age 60,

percent of the elderly population 80 years of age and over), in 2002 Cuba occupied an intermediate position between developed and developing regions. In contrast, by 2050, Cuba's indicators are projected to be at parity with those of developed regions. In fact, by mid-century, only a few other countries, notably Italy, Japan, Singapore and Spain, are projected to have older-old population shares higher than Cuba, these countries then having among the oldest populations in the world.

Particularly germane are the statistics shown under the "Potential Support Ratio" rubric, or PSR. This ratio—the inverse of the old-age dependency ratio (the population 65 years of age and over to the 15 to 64 working age population)—signals the number of individuals in working ages for every person above age 65. In 2002, when the country had 1.6 million elderly, the PSR in Cuba was 7, a relatively favorable ratio. By 2050, as the number of elderly is projected to reach 3.7 million, with a relatively unchanged overall population size, the PSR is expected to decline to 2 potential workers per retiree. This ratio will be typical for developed countries but about half that for the world as a whole. For some of the countries in Table 1, such as Chile and the United States, the PSR will be about 50% higher than in Cuba, with three working age people for every person above age 65.

Another factor to consider is the average retirement age for workers in different countries. As can be ascertained in Table 1, retirement ages for Cuban workers are generally lower than for other countries included in the table, particularly for females. This is reflected in lower percentages of older Cuban workers (past 60 years of age) in the labor force compared to other countries, the difference being generally quite substantial among females. Finally, Table 1 also shows the considerable life expectancy differential separating the sexes at age 60, alluded to above.

The patterns, in the aggregate, together with other data sets, suggest that Cuba's ageing population will act as a major brake on the country's economic development in years to come for reasons examined below. To substantiate this conclusion the next section

Table 1. Ageing Indicators, Cuba and Comparison Countries and Regions, 2002

| | Percentage of Total Population 60 Yearsof Age and Over | | Percentage 80 Years or Older of the Population 60 years and over | | Sex Ratios | | Potential Support Ratio | | Statutory Retirement Age | | Percentage 60+ in Labor Force | | Life Expectancy at Age 60 (2000-2005) | | |
|--------------------|--|------|--|------|------------|------|-------------------------|------|--------------------------|------|-------------------------------|------|---------------------------------------|------|-------|
| | 2002 | 2050 | 2002 | 2050 | 2002 | 2050 | 2002 | 2050 | 2002 | 2050 | 2002 | 2050 | 2002 | 2050 | |
| | | | | | | | | | | | | | | | Males |
| Cuba | 14 | 34 | 16 | 29 | 91 | 84 | 7 | 2 | 60 | 55 | 20 | 3 | 20 | 22 | |
| United States | 16 | 27 | 21 | 28 | 76 | 50 | 5 | 3 | 65 | 65 | 23 | 13 | 19 | 24 | |
| Mexico | 7 | 24 | 12 | 19 | 85 | 70 | 13 | 3 | 65 | 65 | 60 | 15 | 20 | 22 | |
| Dominican Republic | 7 | 21 | 8 | 17 | 93 | 89 | 14 | 4 | 60 | 60 | 76 | 16 | 17 | 19 | |
| Chile | 11 | 24 | 13 | 23 | 76 | 53 | 9 | 3 | 65 | 60 | 37 | 7 | 19 | 22 | |
| Spain | 22 | 44 | 18 | 30 | 75 | 51 | 4 | 1 | 65 | 65 | 13 | 4 | 20 | 25 | |
| World Total | 10 | 21 | 12 | 19 | 81 | 53 | 9 | 4 | | | 40 | 15 | 17 | 20 | |
| More Developed | 20 | 33 | 17 | 29 | 71 | 44 | 5 | 2 | | | 21 | 10 | 18 | 23 | |
| Less Developed | 8 | 19 | 9 | 17 | 88 | 64 | 12 | 5 | | | 50 | 19 | 16 | 19 | |

Source: Population Division 2000b

compares Cuba’s projected age structure evolution with those projected for other countries.

SOCIAL AND ECONOMIC IMPLICATIONS: AN INTERNATIONAL PERSPECTIVE

The second panel of Figure 2, and Figures 3 and 4 present, respectively, age-sex pyramids for several countries, namely the United States (Figure 2), Mexico and the Dominican Republic (Figure 3), and Chile and Spain (Figure 4). Selection was dictated by several considerations:

- The United States was included since the ongoing policy debate surrounding what to do about the Social Security and Medicare programs will be familiar to most readers.
- Mexico and the Dominican Republic were included because they are neighboring countries with less advanced demographic regimes than Cuba, but where economic growth is occurring rapidly.
- Chile is a particularly interesting case, not only because of its sustained economic growth and rising per capita incomes but, more importantly, because this country has led the way in devising market-oriented approaches to cope with the pressures of financing the elderly social safety net, including a series of pension reform initia-

tives designed to accumulate reserves and ensure the system’s sustainability (see Mesa-Lago and others 2000). Chile is also considering introducing market driven reforms to make more viable and efficient the health care system. These initiatives have been part of broader strategies designed to diversify the national economy and make it more internationally competitive, thus far with very successful results.

- Spain is included since it is projected that by 2050 it will be among the countries with the oldest populations in the world.

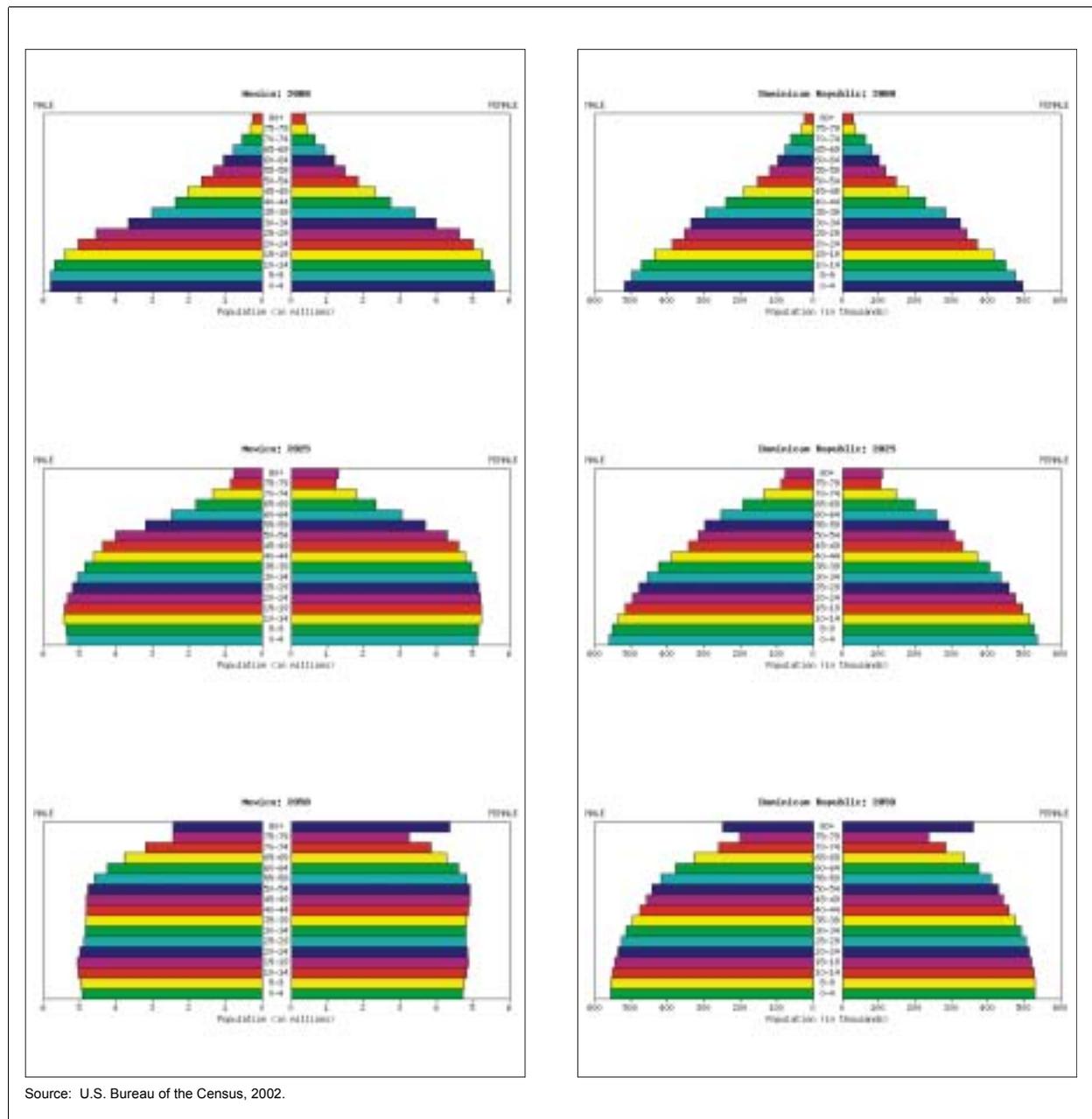
The most striking demographic feature of the U.S. population pyramid is that it retains its triangular shape by 2025, and even by 2050 (Figure 2). Although fertility in the United States has been below replacement for several decades, population growth continues unabated due to high immigration and above-average fertility among immigrant women. This means that for the next 50 years, assuming population projections hold, the PSR in the United States will be more favorable than in Cuba. Despite growing concern about the long-term financial viability of Social Security and Medicare (a detailed review of issues surrounding the Medicare program may be found in Reischauer, Butler and Lave 1998), in comparison with Cuba, the United States is in an

enviable position given its substantial trust reserves (and availability of private pensions funds and accounts) and the dynamism of its economy.

The long-term viability of the American elderly safety net is far more manageable than Cuba's, not only because of demographic trends, but also because Cuba is bankrupt, devoid of financial reserves, and pays for pensions and health care costs exclusively from current government revenues. Making the

long-term situation worse, the Cuban economic system impedes growth, while the country is only partially integrated into the global economy. These conditions interfere with the country's ability to accumulate financial reserves to address the future needs of the old. Cuba's situation is further aggravated by early retirement ages, as low as 55 years for women (Mesa-Lago and others 2000; Donate-Armas 2001).

Figure 3. Population Pyramids: Mexico and the Dominican Republic



From a demographic point of view, the long-term picture in Mexico and the Dominican Republic (Figure 3) resembles more the United States situation than it does Cuba's. Currently both countries' population pyramids have characteristics typical of countries still undergoing demographic transition. Relatively youthful age structures are symptomatic of countries with dependency burdens still dominated by the young. A youthful dependency burden, however, is far less onerous than an elderly one, as noted by the United Nations (Population Division 2002a:33). However, due to anticipated gradual fertility declines and life expectancy gains, these countries will eventually attain age structures that should make more sustainable, on demographic grounds exclusively, the elderly safety net, as suggested by the percent of the older-old population and the PSR. I already noted that the economies of these two countries have grown appreciably during the last two decades; this economic growth and more favorable age structures may provide breathing room for these two countries to build financial reserves in anticipation of the ageing of their populations.

Chile's age-sex pyramid in 2002 (Figure 4) was fairly typical of a country well along its demographic transition, already acquiring the inverse pyramidal shape being projected for low fertility populations later in this century. Yet, by 2050, the older-old population is projected to only account for 23% of the elderly population and Chile's PSR will be a relatively robust 3.

In Spain, close to half (44%) of the population is projected to be above age 60 by 2050 and the PSR will be well below 2 (projected at 1.5). It is instructive to compare Spain and Cuba's age structures, as they are quite similar. The major differences are that in 2050 the share of the older-old in Cuba—due to

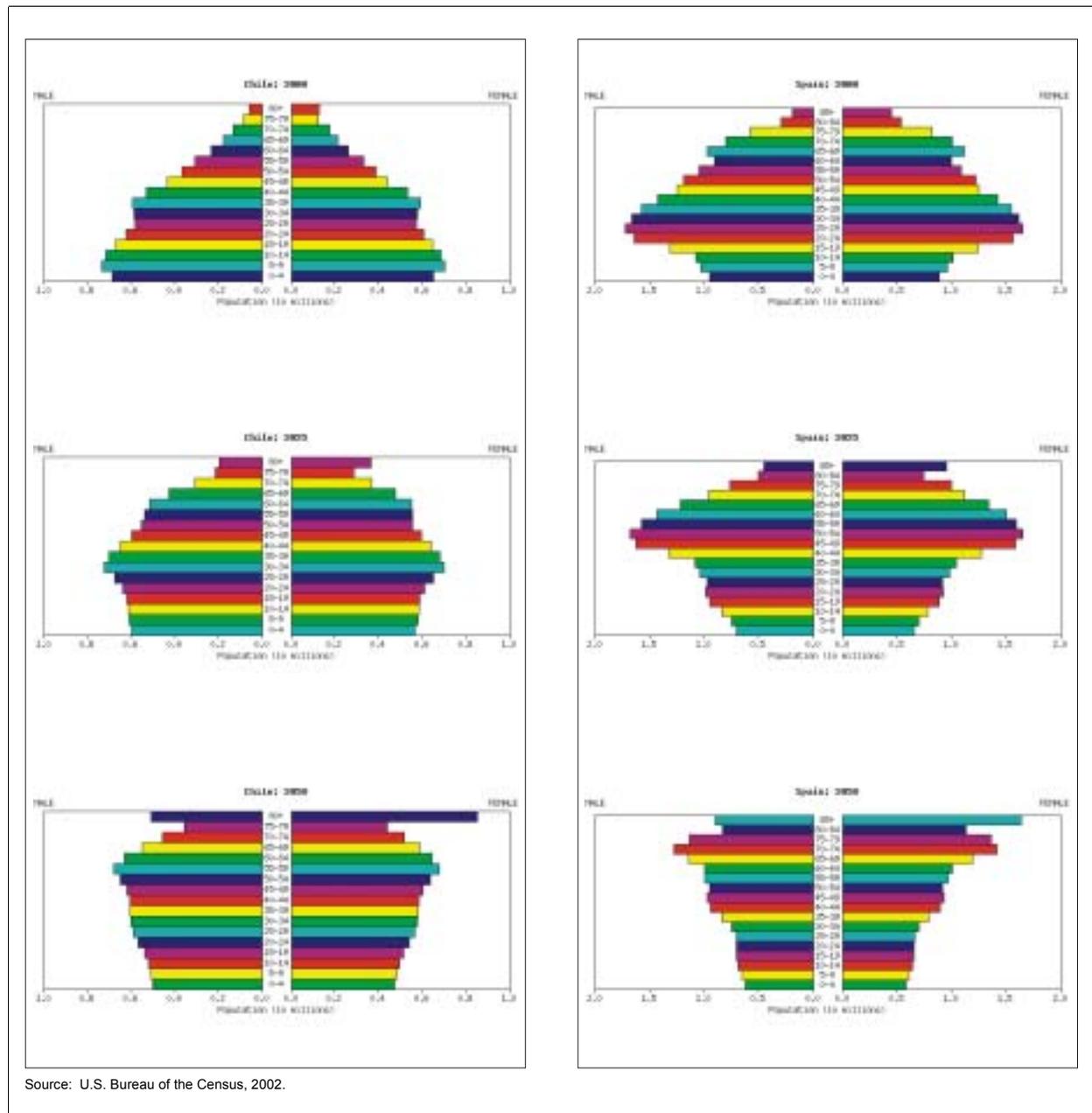
the baby boom cohorts reaching the oldest ages—is projected to be even higher than in Spain, just as the base of the pyramid will be narrower in the former than in the latter country. The implications are easy to draw when it is recalled that Spain's prosperity is related to its membership in the European Community.

CONCLUDING OBSERVATIONS

The conclusion to be drawn from this analysis is that, barring some unforeseen and dramatic demographic developments—such as a major and sustained fertility increase or large-scale immigration—or unprecedented economic growth in decades to come, Cuba's elderly safety net will face a sustainability crisis of major proportions. The Cuban elderly are already feeling the strains of the 1990s economic debacle, receiving average monthly pensions worth but a few dollars, while being subjected to substandard care in a poorly-financed health care system. A miraculous economic recovery in the next few years could well improve the situation over the short- to medium-term, but long-term prospects are rather gloomy.

How to finance the retirement and health care needs of the Cuban elderly under the projected demographic scenario will preoccupy several generations of Cuban leaders, regardless of economic system. Equally worrisome is that the provision of the elderly safety net is likely to exact a heavy economic cost that may imperil the country's economic development since financing pension and health care programs will consume a disproportionate share of national resources. Paying for elderly services will be a major drag on the economy, placing a heavy tax burden on individuals and businesses. The tax burden may even be so onerous as to make Cuba less than attractive as an international investment destination.

Figure 4. Population Pyramids: Chile and Spain



Source: U.S. Bureau of the Census, 2002.

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