

The Demographic Transition in Eastern Europe and the Former Soviet Union

Introduction

Most of the countries in Eastern Europe and the former Soviet Union have populations that are aging rapidly. By 2025, the median age will be more than 10 years greater than it is now in about half of the countries in the region. In 18 of the 28 countries in the region, the population will actually shrink by 2025. The most striking case is the Russian Federation, where the population—which fell from 149 million in 1990 to 143 million in 2005—is projected to fall to 111 million by 2050. The number of elderly is already high in many countries and will continue to rise during the next two decades. For example, in Poland, the proportion of the population 65 years and older is projected to increase from 13 percent in 2005 to 21 percent in 2025, and in Slovenia the increase is from 16 percent to 24 percent during this same period.

This aging trend is the consequence of *demographic transition*, which is when populations progress from premodern regimes, where both mortality and fertility are high, to postmodern regimes, where both mortality and fertility are low. The cause of the transition lies in the control of epidemics and contagious diseases, which eventually contribute to lower mortality, and in the processes of modernization,

which leads to lower levels of fertility. The timing of the demographic transition has varied in different regions of the world, but there is a global trend toward higher life expectancy, lower fertility, and the resulting aging of population distributions. As is the case for industrial countries, most countries in Eastern Europe and the former Soviet Union have either completed their demographic transition or are on the path to completion.¹ In fact, the most rapid aging during the next two decades worldwide will be in Eastern Europe and the former Soviet Union because of unprecedented declines in fertility and the increasing life expectancies of the past decades.

This chapter presents an analysis of the dynamics of demographic transition in the countries of Eastern Europe and the former Soviet Union. The next section presents highlights of the global demographic transition and provides a broad context for understanding the population dynamics in the region's countries. Those dynamics are examined in the following section, which reviews the fertility, mortality, and population changes in the region from 1950 to 2000. Then, population projections to 2025 are presented for countries in Eastern Europe and the former Soviet Union, and further declines in fertility and mortality that are projected to occur during the upcoming two decades are documented. Although aging is the dominant demographic pattern, it does not characterize all the region's countries. Some countries, in fact, have young population profiles and will remain young through the next two decades. The implications of aging for dependency rates are considered next. A classification of the region's countries is then presented according to those different demographic profiles. Finally, conclusions are drawn.

The Global Demographic Transition

The population of the world grew from 2.5 billion people in 1950 to about 6.0 billion in 2000. According to the United Nation's *World Population Prospects: The 2004 Revision* (United Nations 2005), it is expected to reach about 9 billion by 2050. Despite this huge increase, the world has seen an unprecedented decline in population growth rates. In the mid-1960s, the annual global population growth rate was slightly higher than 2 percent. By the mid-1990s, that rate had dropped to about 1.5 percent, with further declines expected to continue beyond 2050. The falling population growth rates have led to rapid declines in the number of people added to total world population after the peak from 1985 to 1990, when 80 million people were added to the world's population.

The main reason for the large decline in global population growth rates after the mid-1960s has been the unprecedented drop in the global total fertility rate (TFR). (Key demographic definitions are presented in box 1.1.) In the past 50 years, the world's TFR has halved, from around 5.0 children per woman to 2.7 children, and it is

BOX 1.1

Key Definitions in Demography

Life expectancy at birth: The average number of years that a newborn is expected to live if mortality conditions at various ages at the time of birth persist throughout the individual's life.

Total fertility rate (TFR): The average number of children a woman would bear if she survived to the end of her reproductive life span and experienced in each year the age-specific fertility rates of the given period. The TFR is obtained by adding the age-specific fertility rates from 15 to 49 years.

Net reproduction rate (NRR): The average number of daughters per woman that are expected to survive to have children themselves. The NRR is a good measure of the rate of population growth because it measures the size of the next generation relative to the size of the current one. An NRR greater (or less) than 1.0 means that the next generation will be larger (or smaller) relative to the current one.

Replacement fertility: The level of fertility at which the population is just replacing itself. At this level of fertility ($TFR = 2.1$) and prevailing mortality rates, the rate of population growth is 0 and NRR equals 1.0.

Population growth rate: The average exponential rate of growth of the population over a given period. It is the balance between (a) births and (b) deaths and migration.

Population momentum: A phenomenon whereby a population continues to grow even after its fertility has fallen because the number of children born is determined by both the fertility rate and the number of women in their reproductive ages. A new phenomenon is that of negative population momentum in which population size continues to decrease because previous and future low levels of fertility produce successively smaller cohorts of women.

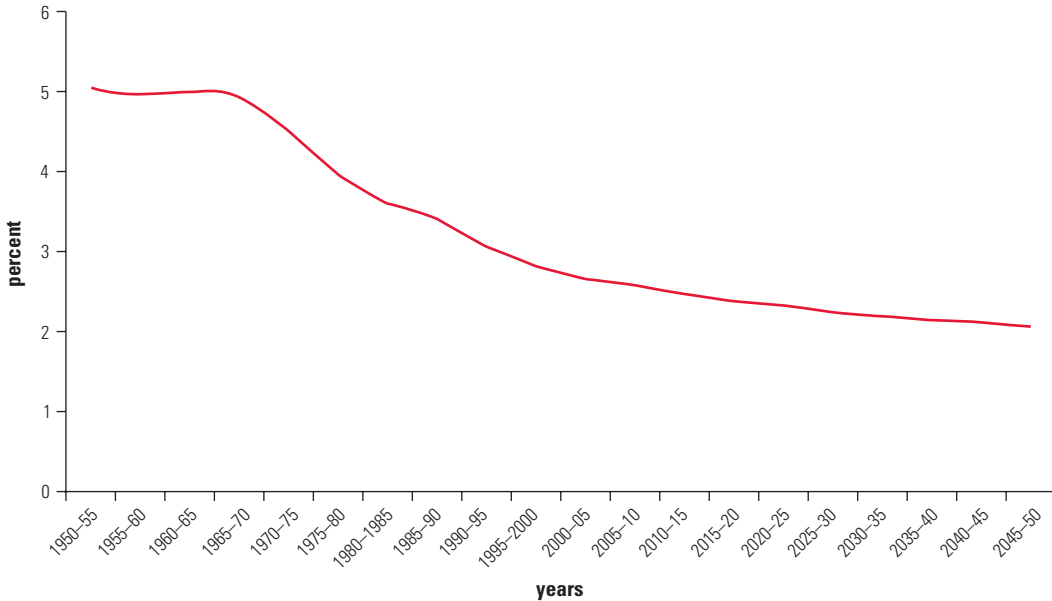
Child dependency rate: The number of people 0 to 14 years per 100 people 15 to 64 years.

Elderly dependency rate: The number of people 65 years and older per 100 people 15 to 64 years. The elderly dependency rate is also called the **old-age dependency rate**.

Total dependency rate: The number of people younger than 15 plus people 65 or older per 100 people 15 to 64 years.

Population aging: The process by which the balance of a country's population shifts such that the proportion of the population that is elderly constitutes a growing proportion when compared with younger ages.

FIGURE 1.1
Global Total Fertility Rates, 1950–2050



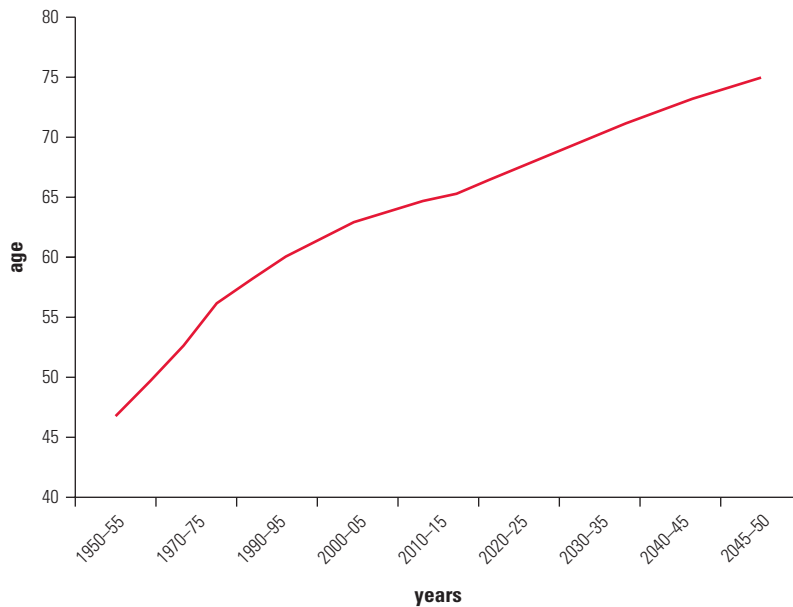
Source: United Nations 2005.

expected to drop to 2.1 during the next 50 years (figure 1.1). All regions of the world have experienced declines in fertility rates, which have fallen in the developing countries from about 7.0 children per woman in the early 1950s to about 5.5 children in 2000 and in the industrial countries from about 3.5 children per woman to below replacement levels by the early 1980s.² At the same time, global life expectancy rose by close to 20 years between 1950–55 and 2000–05. It is expected to continue increasing through 2050, when it is projected to reach 75 years (figure 1.2).

Because of those major changes in fertility, together with significant improvements in longevity, the world population structure has shifted from one dominated by young people to one increasingly dominated by older people. The proportion of the global population less than 15 years of age declined from 34 percent in 1950 to almost 30 percent in 2000, and it is expected to drop to about 20 percent in 2050. The proportion of people age 65 and older grew from 5.2 percent in 1950 to about 7 percent in 2000, and it is expected to increase to about 16 percent by 2050. Globally, the number of people 60 years and older is expected to increase to nearly 2 billion people by 2050, compared with less than 400 million in 1975.

Those demographic trends—and the resulting pace of aging—are expected to vary significantly across countries and regions. The most dramatic aging has already occurred—and will continue to occur—in

FIGURE 1.2
Global Life Expectancy, 1950–2050



Source: United Nations 2005.

Japan and countries of Western Europe, which have had fertility rates below replacement levels for decades. By 2050, the median age in Europe will be 47.1 years, compared with 39 years in 2005. This age will be more than 20 years higher than the median age in Africa. Macau, China, Special Administrative Region, with a median age of 54.4 years, will be the oldest country, and Japan's median age will be 52.3 years (United Nations 2005).

The Demographic Transition in Eastern Europe and the Former Soviet Union, 1950–2000

The aging process has been occurring for many decades in most countries in Eastern Europe and the former Soviet Union and is expected to continue to be the major demographic phenomenon during the next 25 years and beyond. As elsewhere, the two primary contributing factors have been significant declines in fertility and major improvements in longevity, resulting from advances in health. The effect of those changes on both the size and the structure of the population in the region's countries has been substantial. Those dynamics, especially in the older countries in the region, are very similar to those experienced in many countries during the last half of the 20th century (box 1.2).

BOX 1.2**Fertility Declines and Improvement in Longevity in Selected Countries, 1950–2000**

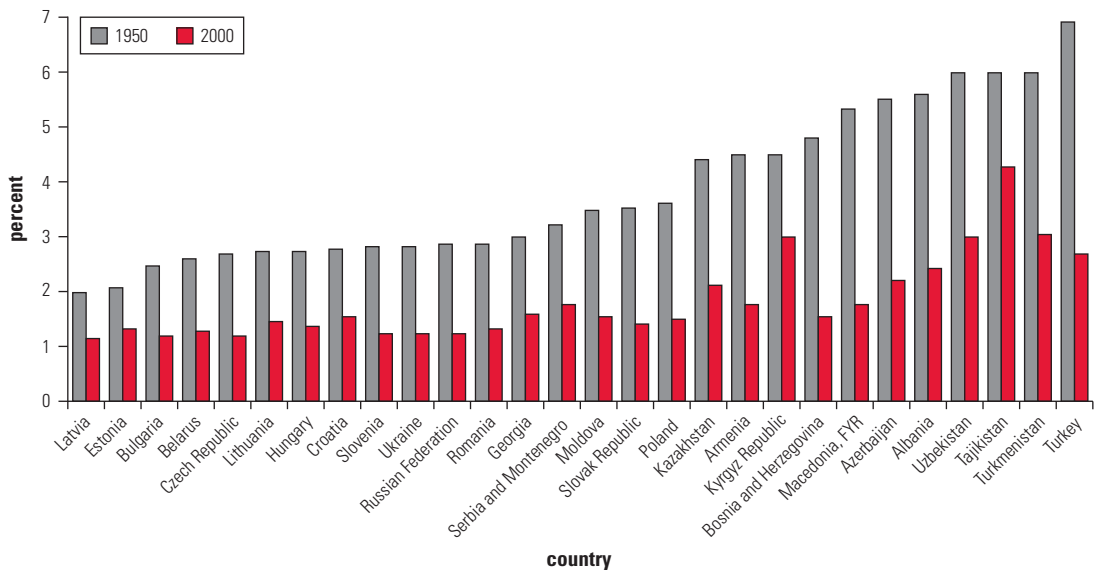
All regions of the world had declining fertility between 1950 and 2000, although in some regions—most notably Africa—the declines were modest. Overall, Europe had achieved below replacement levels of fertility by 2000, whereas Asia, Latin America, and Oceania are moving toward lower levels of fertility. All countries in the Group of Seven (G7) saw very rapid fertility declines from the 1950s to reach below replacement levels of fertility (that is, 2.1 children per woman) by the mid-1970s. All countries in the G7 have had below-replacement levels of fertility for the past 20 years or so (though some data for the United States show a level of fertility that is above replacement level). Declining fertility is not just present in industrial countries. China saw fertility drop from more than 6.0 children per woman between 1950 and 1955 to below replacement levels by 1995. In the Islamic Republic of Iran, fertility also declined rapidly in the last half of the 20th century, from about 7.0 to 2.5 children per woman. In comparison, Iraq and Pakistan only saw modest declines, and Afghanistan experienced a slight increase in fertility.

The experience of longevity improvements in the more industrial countries of Eastern Europe and the former Soviet Union is very similar to that of most industrial countries. Between 1950 and 2000, Canada, France, Germany, Ireland, Italy, the United Kingdom, and the United States added an average of 8 years for men and 9 years for women. The exception is Japan, which added about 15 years for men and 18 years for women. The trend in life expectancy in Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan has been very similar to that of other countries in Asia that also started with relatively low life expectancy. For example, China added almost three decades to the longevity of men and women between 1950 and 2000, and India and Iran also saw major improvements during that period.

Because of those significant changes in fertility and mortality, the experiences of Japan and Italy—probably the oldest countries in the world—are actually not too different from what is projected for the oldest countries in Eastern Europe and the former Soviet Union, such as Bulgaria, Croatia, and Hungary. But for most countries in the region, the aging experience is more similar to what is projected for Ireland and the United Kingdom. By 2025, 14 countries in Eastern Europe and the former Soviet Union are projected to have median ages of between 40 and 45 years, which is comparable to what is projected for Ireland and the United Kingdom (42 years).

Declining Fertility

Fertility throughout the region declined through the last half of the 20th century, even though there were wide variations across countries (figure 1.3). The declines have tended to be particularly large in countries that had high fertility rates (for example, more than 3.0 children per woman) in 1950. For instance, Turkey saw its TFR fall from almost 7.0 children per woman in 1950–55 to 2.6. This rate of

FIGURE 1.3**Total Fertility Rates in Eastern Europe and the Former Soviet Union, 1950–2000**

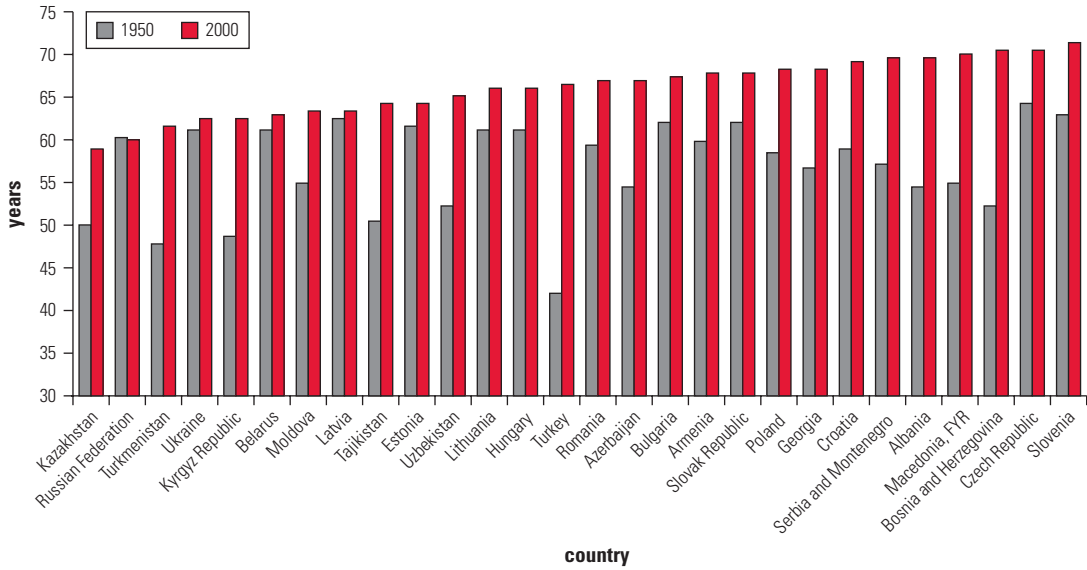
Source: United Nations 2005.

decline was also experienced by other countries with similar higher levels of fertility in the middle of the past century. By 2000, most countries in the region had fertility rates below replacement, with the exception of Albania, the Kyrgyz Republic, Tajikistan, Turkey, Turkmenistan, and Uzbekistan (as well as Azerbaijan, though only so with a TFR of 2.2).

Improvements in Longevity

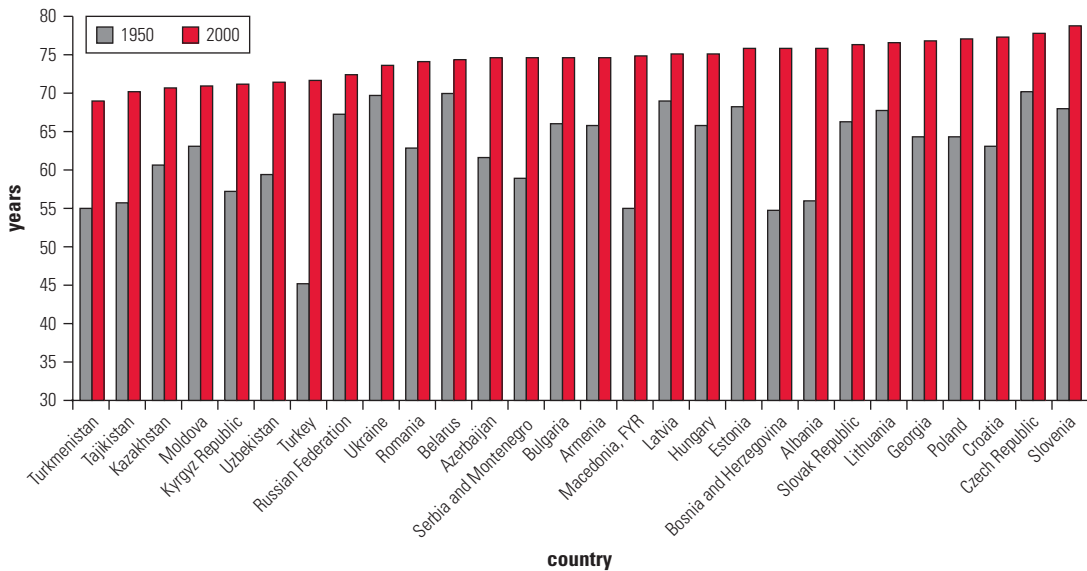
Similar to other regions, Eastern Europe and the former Soviet Union experienced significant improvements in life expectancy during the second half of the 20th century. On average, longevity increased by a decade for men and about 12 years for women for countries in the region (figures 1.4 and 1.5, respectively). Countries that had relatively low life expectancies at birth in 1950 tended to experience the greatest gains. Increases in longevity in Southeastern Europe were especially large, with Turkey leading the way with gains in male and female life expectancies of 25 years during 1950 to 2000. Albania, Bosnia and Herzegovina, the former Yugoslav Republic of Macedonia, and Serbia and Montenegro were other Southeastern European countries with substantial increases in longevity. Most of the former Soviet Union also experienced large gains in longevity—13 to 14 years for men, except in Kazakhstan, where male longevity increased by only 9 years. The one departure from the overall pattern of increasing life expectancies was the trend for men in Russia, for whom life

FIGURE 1.4
Male Life Expectancy at Birth in Eastern Europe and the Former Soviet Union, 1950–2000



Source: United Nations 2005.

FIGURE 1.5
Female Life Expectancy at Birth in Eastern Europe and the Former Soviet Union, 1950–2000



Source: United Nations 2005.

expectancy dropped between 1950 and 2000 (about one-tenth of a year). Russia also experienced the smallest change in female life expectancy at birth, which increased from about 67 years in 1950 to about 72 years in 2000. Increases in longevity in the Baltic states were also very modest, because life expectancy in those countries was already high in 1950.

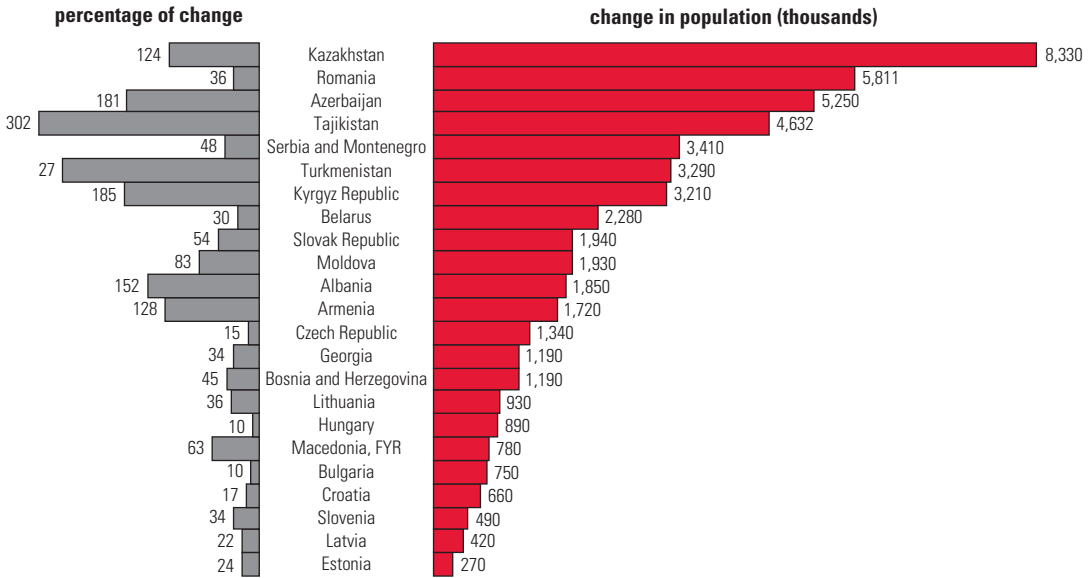
Changes in Population Size and Structure

The changes in fertility and life expectancy have shaped the current demographic situation in the region, determining population sizes, growth rates, and population structures. The rapid declines in fertility, even among countries that already had very low levels of fertility, have meant that relatively smaller cohorts were being added to the national populations. And because longevity has continuously improved, especially in those countries with already long life expectancies, it has expanded population numbers above all in the upper age groups. The net result of those changes has been a slowdown in the growth rate of populations and an increase in the proportion of the elderly in the total population.

Despite the observed decline in fertility rates, the population of the region grew by about 187 million people between 1950 and 2000. Russia alone accounted for an increase of about 44 million, propelled by population momentum (see box 1.1), followed by Turkey, which grew by about 27 million. The population of other large countries in the region, such as Kazakhstan, Poland, Ukraine, and Uzbekistan, also increased substantially during that period. The population in some of the smaller countries, such as Albania, Armenia, Azerbaijan, the Kyrgyz Republic, Tajikistan, and Turkmenistan, doubled in the last half of the century, but their contribution to the total population of the region was still small. Other countries, such as Croatia, the Czech Republic, Estonia, Georgia, Latvia, Lithuania, and Slovenia, added few people because of very low levels of fertility (figure 1.6).

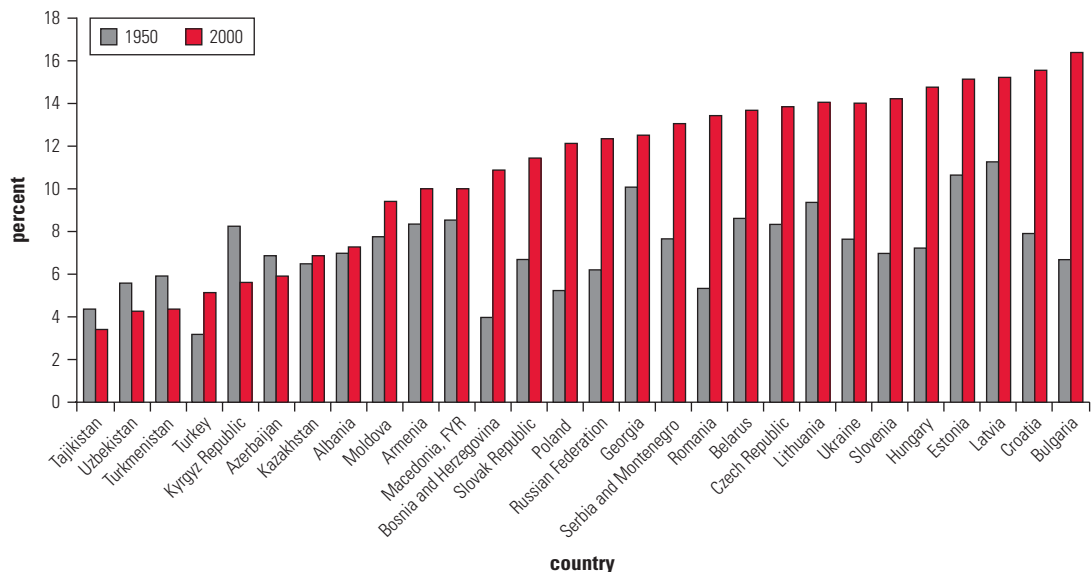
The unprecedented declines in fertility and increasing life expectancies during the past 50 years have had a dramatic effect on population structures throughout the region. Several countries saw the share of their populations 65 years and older more than double between 1950 and 2000 (figure 1.7). Bulgaria, Croatia, Estonia, Hungary, Latvia, Slovenia, and Ukraine experienced the largest increases in this proportion; at the same time, the proportion younger than 14 years of age declined by at least half in all those countries. But the most dramatic declines in the proportion of the population age 0 to 14 occurred in Bosnia and Herzegovina and FYR Macedonia, both of which experienced sharp declines in fertility in the 1990s.

FIGURE 1.6
Absolute and Relative Change in Population Size in Selected European and Former Soviet Countries, 1950–2000

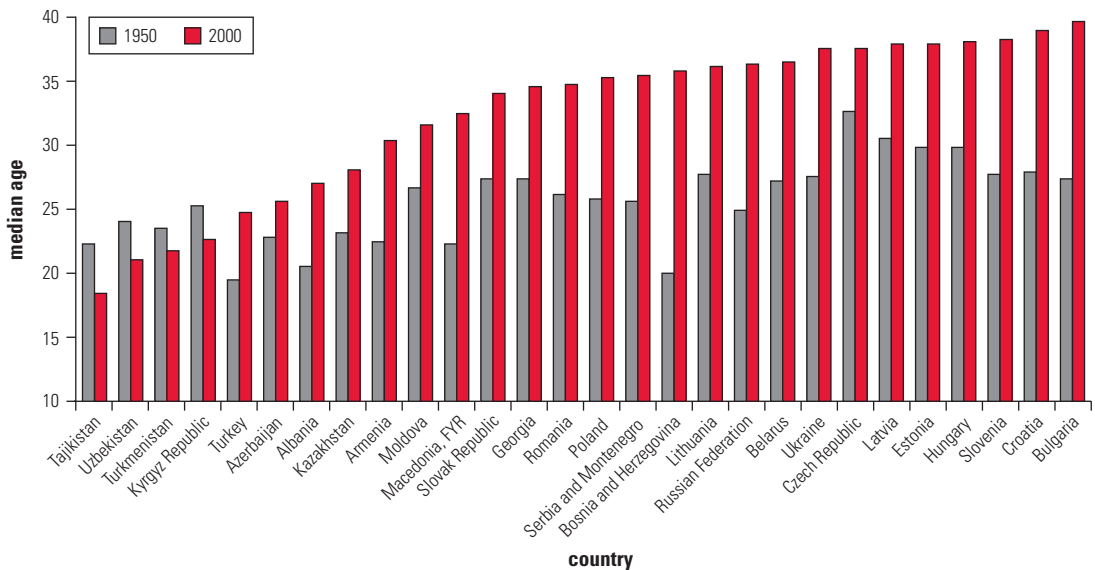


Source: World Bank staff calculations, based on United Nations 2005.

FIGURE 1.7
Proportion of Population 65 Years and Older in Eastern Europe and the Former Soviet Union, 1950–2000



Source: United Nations 2005.

FIGURE 1.8**Median Age in Eastern Europe and the Former Soviet Union, 1950–2000**

Source: United Nations 2005.

Another indicator of the aging process of the past 50 years has been a substantial increase in the median age of Eastern European and former Soviet populations. In figure 1.8, 21 of the 28 countries shown experienced median-age increases of five years or more between 1950 and 2000; for some countries, including Bosnia and Herzegovina, Bulgaria, Croatia, FYR Macedonia, Russia, and Slovenia, the median age rose by more than 10 years. However, the rise in the median age was not universal. In the Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan, the median age declined, partially because of high fertility rates that persisted during and before that period and that swelled the proportion of the population in the younger age groups. Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan, because of their still high fertility and growth rates, will remain the youngest in the region.

Demographic Projections to 2025

To a large extent, demographic trends during the next two decades have already been determined by the changes in fertility and life expectancy in past decades (box 1.3). Certainly, aging will continue to be the dominant feature throughout most of the region. This process can be characterized as “aging from the top,” which results from further improvements in longevity, rather than from further declines in fertility rates.

BOX 1.3**Demographic Projections**

Population projections used in this study are drawn from the *World Population Prospects: The 2004 Revision*, which was produced by the Population Division of the United Nations Department of Economic and Social Affairs (United Nations 2005). The 2004 revisions were the latest projections available while this report was being prepared. In March 2007, the United Nations released an updated 2006 revision. Other agencies that produce long-range population projections include the World Bank, which produced a set of projections in 1994; the International Institute for Applied Systems Analysis, which has been producing projections since 1996; and the U.S. Census Bureau. Many government agencies also produce projections for their own populations.

All widely used population projections rely on the same basic cohort component approach. The method starts with a population structure and applies fertility and survival rates determined according to assumptions about future trends in fertility and mortality. Therefore, in this sense, demographic projections are conditional statements about the future, given a set of assumptions about the key population flow variables (fertility, mortality, and, to a lesser extent, migration). By and large, past projections of world population size have been fairly accurate. At the global level, projections of world population size made by the United Nations between 1957 and 1998 had an error of less than 3 percent. At the country level, errors have been larger, especially for periods further into the future. Errors have been relatively greater for less developed and smaller countries.

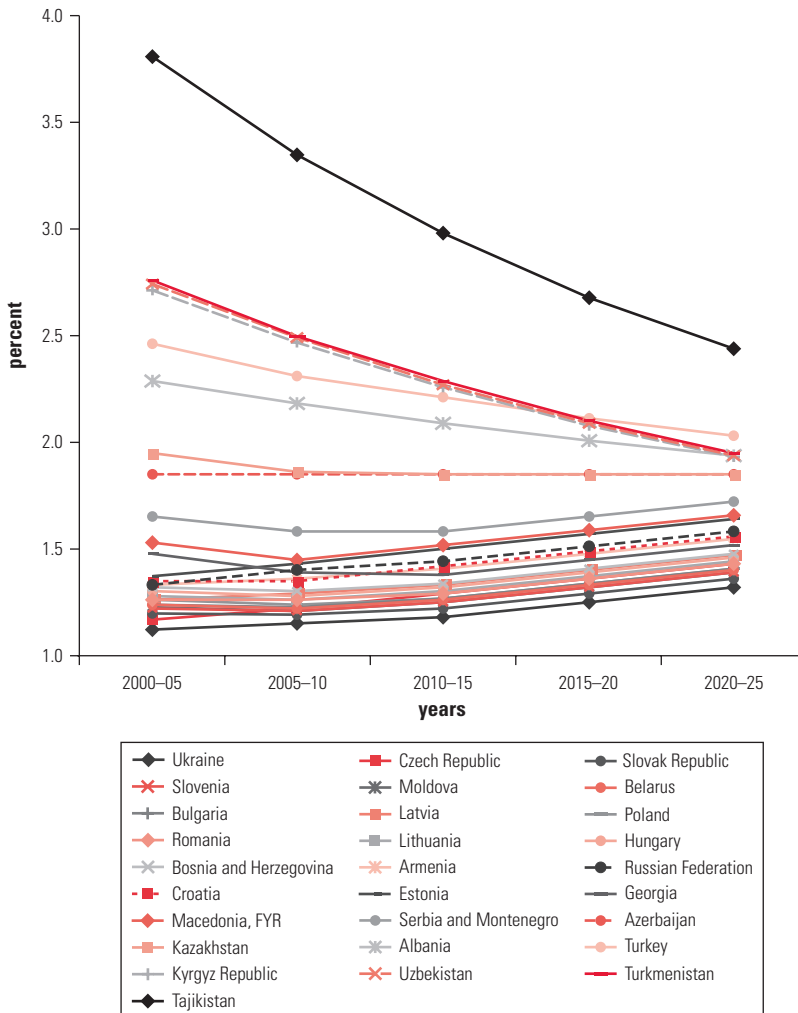
Factors that affect the accuracy of projections include an imprecise assessment of the current population structure, inexact assumptions about trends in fertility and mortality, and unexpected events that might affect the major demographic flows (for example, epidemics, famines, or wars). Analysis of past projections shows that there has been a general tendency to overestimate fertility and underestimate mortality improvements (though not for Africa). Migration has been difficult to project, because it depends on factors that are difficult to foresee.

The projections from the United Nations deal with the uncertainty of population projections by producing several variants that are based on different scenarios of low, medium, high, or constant fertility. All those variants are based on assumptions of future mortality patterns and international migration. The different variants can lead to significant differences in the projected populations. In the case of Russia, for instance, the medium variant projects a decline in the population to 111.7 million by 2050, whereas according to the high-fertility scenario, the population size could be as large as 134.5 million. The high-fertility variant for Turkey, where the population is expected to continue to grow, projects a population that is almost 19 million larger than under the medium variant.

Fertility and Life Expectancy Projections

Fertility rates in most of the region are already at levels well below the replacement level of fertility; by 2000, in most countries, fertility rates had typically converged to between 1.1 and 1.5 children per woman. For those countries, fertility rates are projected to remain more or less at 2000–05 levels or even to improve very marginally by maybe one-tenth of a child between 2000–05 and 2020–25 (figure 1.9). Countries that still have comparatively higher levels of fertility, including Albania, Kazakhstan, the Kyrgyz Republic, Tajikistan,

FIGURE 1.9
Projected Fertility Rates in Selected Eastern European and Former Soviet Countries, 2000–25



Source: United Nations 2005.

Turkey, Turkmenistan, and Uzbekistan, are projected to experience falling fertility rates toward levels that are very similar to those of the rest of the region and also below replacement. United Nations projections suggest that by 2025 only Tajikistan will still have fertility rates that are just marginally above the replacement level.

Further improvements are expected in mortality rates. Gains in life expectancy will be largest for countries that were at comparatively lower levels of longevity in 2000. For example, Estonia, Kazakhstan, the Kyrgyz Republic, Latvia, Moldova, Tajikistan, Turkey, Turkmenistan, Ukraine, and Uzbekistan all are projected to gain five years or more in life expectancy at birth. Improvements in life expectancy to 2025 are projected to be about 2 to 5 years for men for most countries in the region, with gains for females projected to be 2 to 3 years for all countries except Russia (figures 1.10 and 1.11).

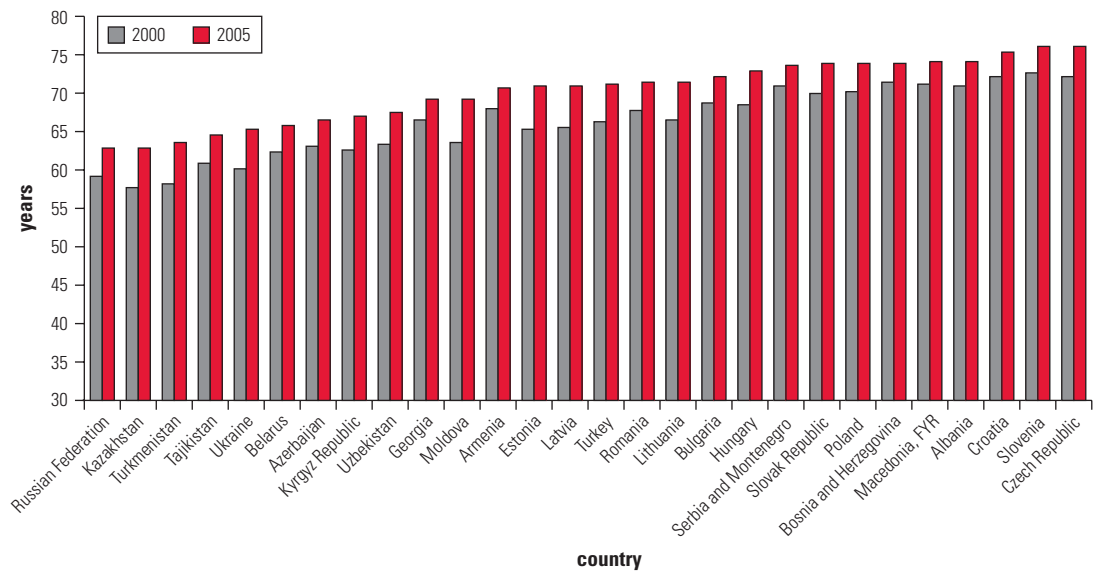
Projected Population Growth Rates and Sizes

By 2000, 18 of the 28 countries in figure 1.12 already had negative population growth rates, with most experiencing annual declines between 0 and -0.5 percent. Between now and 2025, very little change is projected for countries with negative growth rates, which are expected to remain negative and decrease only marginally. Armenia, Georgia, and Kazakhstan are the three countries that currently have negative growth rates but are projected to see some upward movement in those rates.

Countries that still have positive growth rates are Albania, Azerbaijan, Bosnia and Herzegovina, Croatia, the Kyrgyz Republic, FYR Macedonia, Tajikistan, Turkey, Turkmenistan, and Uzbekistan. Of those countries, Bosnia and Herzegovina, Croatia, and FYR Macedonia are projected to have negative growth rates from 2015 onward, while six of the other seven will continue to have declining but positive growth rates to 2025 and beyond. Tajikistan is the only country in the region that started the period with a positive growth rate and is projected to have an even higher growth rate in 2025.

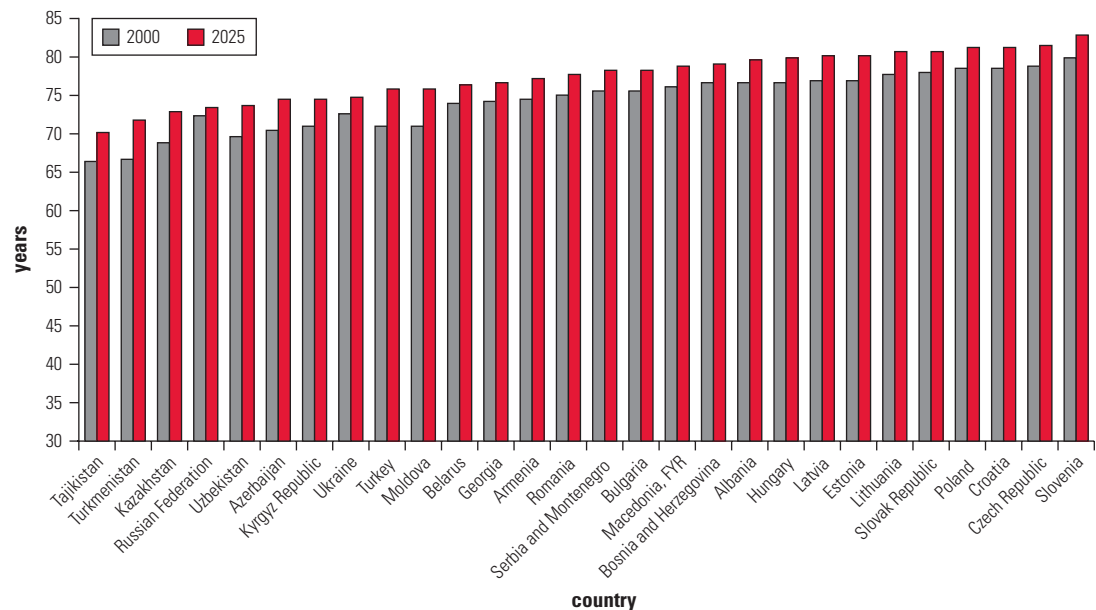
Because of these negative growth trends, most countries in the region will experience shrinking populations in the first quarter of this century (figure 1.13). In contrast, from 1950 to 2000, all countries in the region experienced population growth. Despite the large numbers of shrinking countries, the total population in the region is projected to decrease by only 1.2 million people between 2000 and 2025. This projection is low because, amid the general trend of declining populations, some countries will continue to grow. Those countries include Albania, Azerbaijan, the Kyrgyz Republic, Tajikistan, Turkey, Turkmenistan, Uzbekistan, and, to a smaller degree, FYR

FIGURE 1.10
Projected Trends in Life Expectancy at Birth for Males in Eastern Europe and the Former Soviet Union, 2000–25



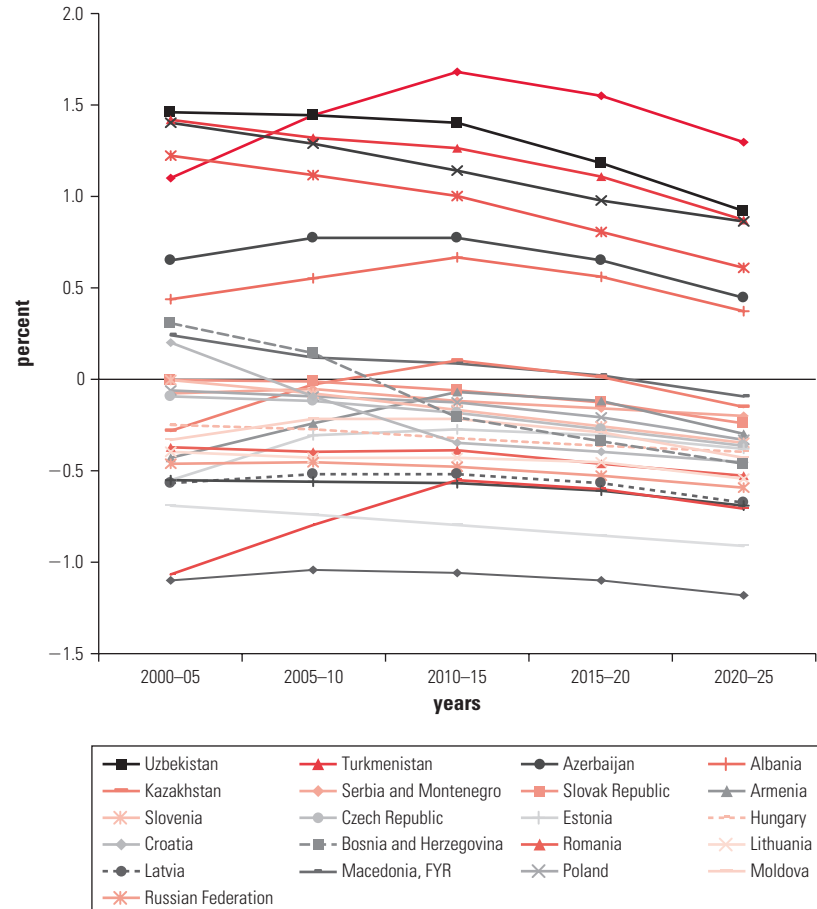
Source: United Nations 2005.

FIGURE 1.11
Projected Trends in Life Expectancy at Birth for Females in Eastern Europe and the Former Soviet Union, 2000–25



Source: United Nations 2005.

FIGURE 1.12
Population Growth Rates in Selected Eastern European and Former Soviet Countries, 2000–25



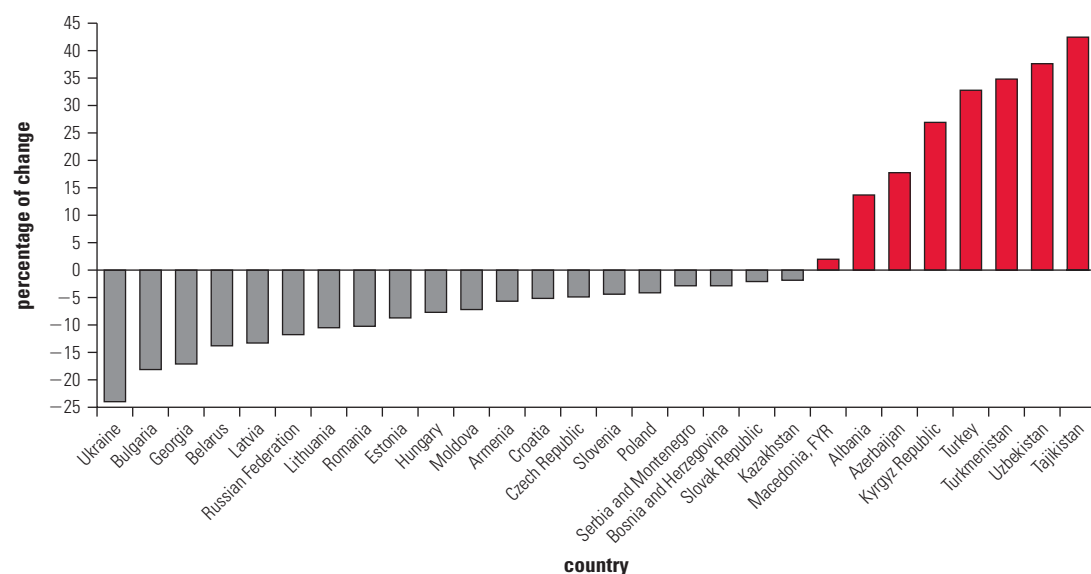
Source: United Nations 2005.

Macedonia, all of which are projected to have positive population growth rates.

For many shrinking countries in the region, the projected changes in population growth rates and in population sizes are expected to be relatively modest. There are, however, important exceptions. Some countries, because of their large initial population and population structures, which provide sizable momentum, will experience significant declines (table 1.1). Those countries include, most prominently, Russia and Ukraine. Bulgaria, Belarus, Poland, and Romania each are projected to lose more than a million people. The countries that experience population decline by 2025 will collectively be about 35 million people smaller than they were in 2000. Among population gainers, Turkey is projected to see the largest increase (more than 22 million),

FIGURE 1.13

Projected Change in Population Size in Eastern Europe and the Former Soviet Union, 2000–25



Source: World Bank staff calculations, based on United Nations 2005.

TABLE 1.1

Projected Population Gains and Losses in Eastern Europe and the Former Soviet Union, 2000–25

thousands

Projected Population Gains, 2000–25		Projected Population Losses, 2000–25			
Turkey	22,331	Russian Fed.	17,330	Latvia	314
Uzbekistan	9,318	Ukraine	11,781	Moldova	308
Tajikistan	2,610	Romania	2,259	Serbia and Montenegro	311
Turkmenistan	1,566	Poland	1,554	Kazakhstan	259
Azerbaijan	1,453	Bulgaria	1,445	Croatia	234
Kyrgyz Rep.	1,330	Belarus	1,394	Armenia	174
Albania	422	Georgia	803	Estonia	119
Macedonia, FYR	38	Hungary	790	Slovak Rep.	114
		Czech Rep.	514	Bosnia and Herzegovina	106
		Lithuania	371	Slovenia	84

Source: World Bank staff calculations, based on United Nations 2005.

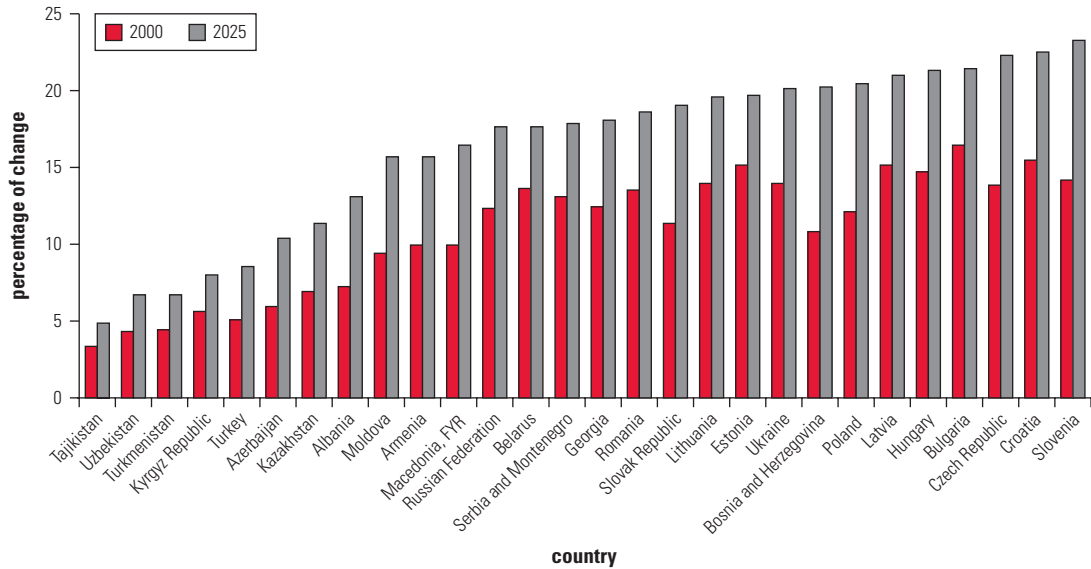
even though its growth rate is falling rapidly and is projected to reach 0.8 percent by 2020 to 2025.

Projected Changes in Population Structure

Most Eastern European and former Soviet countries have population structures that are older than they were 50 years ago. Moreover,

FIGURE 1.14

Projected Change in the Population Share 65 Years and Older in Eastern Europe and the Former Soviet Union, 2000–25

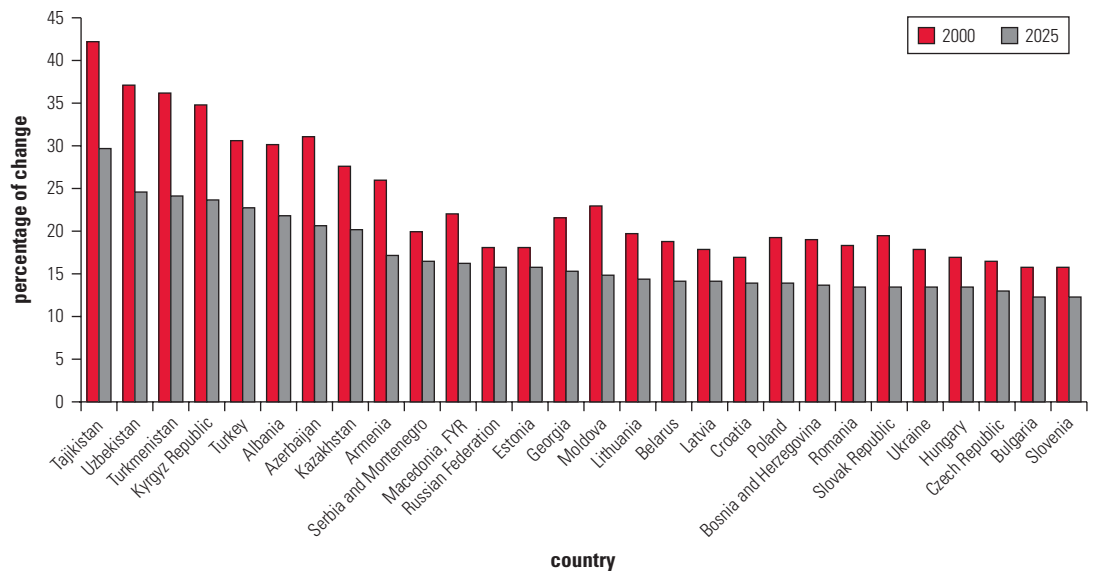


Source: United Nations 2005.

current demographic structures tend to have inbuilt characteristics, such as a small proportion of the population in childbearing age, that will inevitably lead to further aging, as well as population declines just discussed. A dominant demographic feature for countries of the region is the projected substantial increases in the proportions of the populations that are 65 years and older. The largest increases in those old-age shares are expected in countries that are already “old,” such as Bulgaria, the Czech Republic, and Slovenia, which are projected to experience further increases of 7 percent or more. For those countries, as well as a few others in Eastern Europe, between a fifth and a quarter of their populations will be 65 years and older by 2025 (figure 1.14). Old-age shares will also increase, albeit more modestly, in most countries that still have comparatively higher fertility rates, such as Tajikistan, Turkmenistan, and Uzbekistan.

A related implication of the fertility and life expectancy trends is that population structures are moving away from the young age groups. In every country in the region, the share of the population younger than 15 years of age is projected to be lower in 2025 than it was in 2000 (figure 1.15). The largest declines are expected for countries that still have relatively high levels of fertility and positive growth rates (Albania, Armenia, Azerbaijan, Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkey, Turkmenistan, and Uzbekistan). Countries that already had fertility closer to replacement levels will see less dramatic

FIGURE 1.15

Projected Change in the Population Share 0–14 Years in Eastern Europe and the Former Soviet Union, 2000–25

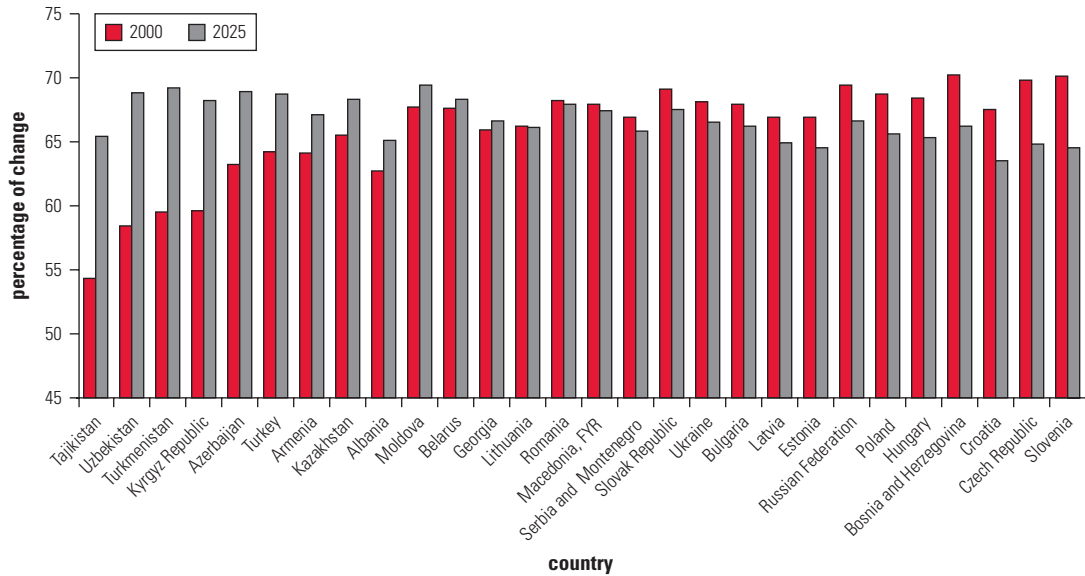
Source: United Nations 2005.

declines in the young population share. For instance, Tajikistan is projected to see the population share in the 0 to 14 age group decline from 42 percent to 30 percent between 2000 and 2025. However, countries such as Bulgaria, the Czech Republic, and Slovenia, which had fertility levels closer to replacement levels in 2000, are expected to see a reduction of only about 3 percentage points.

The overall picture across the region is mixed with respect to working-age population shares, conventionally defined as 15 to 64 years (figure 1.16). Countries with populations that are still growing, such as Albania, Azerbaijan, the Kyrgyz Republic, Tajikistan, Turkey, Turkmenistan, and Uzbekistan, will see significant increases in the proportions of their populations in the working-age group. Population momentum will play a major role in the expanding numbers in this age group, even though fertility rates and eventually population growth rates are expected to decline through the 2000 to 2025 period. Population momentum will propel even Armenia, Kazakhstan, and Moldova, which, despite zero or negative growth rates in 2000 to 2005, will also see the proportions in the working-age groups increase during that time. However, the magnitude of the increase is smaller than that projected for those countries with positive population growth. For example, although Tajikistan, Turkmenistan, and Uzbekistan are projected to have about a 10 percentage point increase in the population share in the 15 to 64 age

FIGURE 1.16

Projected Change in the Population Share 15–64 Years in Eastern Europe and the Former Soviet Union, 2000–25

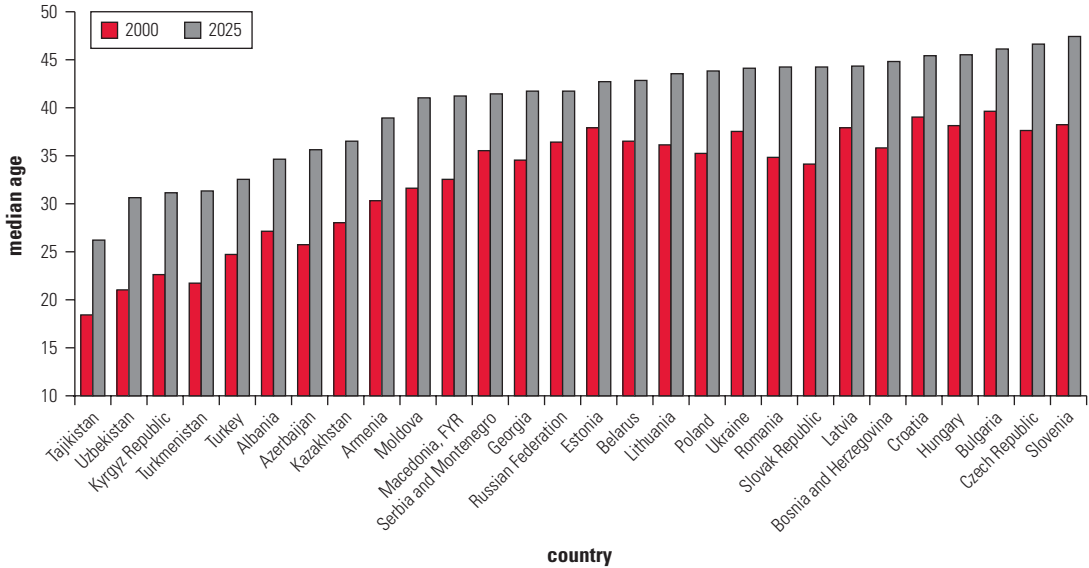


Source: United Nations 2005.

group by 2025, the corresponding increases in Armenia, Kazakhstan, and Moldova will be between 1.7 and 3.0 percentage points. At the other end of the spectrum, a number of countries will see a fall in the working-age population share. The largest declines will be in Bosnia and Herzegovina, Croatia, the Czech Republic, and Slovenia, which will lose between 4.0 and 6.0 percentage points. More detail on the implications of demographic trends for the region's working-age population will be provided in the next chapter.

As the region's population structures increasingly shift to older age structures, median ages will continue to rise (figure 1.17). This finding is true even for those countries (mostly former Soviet countries and Turkey) that still have fertility rates above replacement levels. About half of the countries in the region already had median ages older than 35 years in 2000; those countries are projected to see even further increases, as high as 47 years for the Czech Republic and Slovenia. Even a country such as Tajikistan, with a median age of 18 years in 2000, will see that figure rise to about 26 years by 2025 because of slowly declining fertility rates coupled with improvements in longevity. Although all countries are projected to have rising median ages, former Soviet countries will have median ages that are up to two decades younger than those projected for the oldest countries.

FIGURE 1.17
Projected Increases in Median Ages in Eastern Europe and the Former Soviet Union, 2000–25



Source: United Nations 2005.

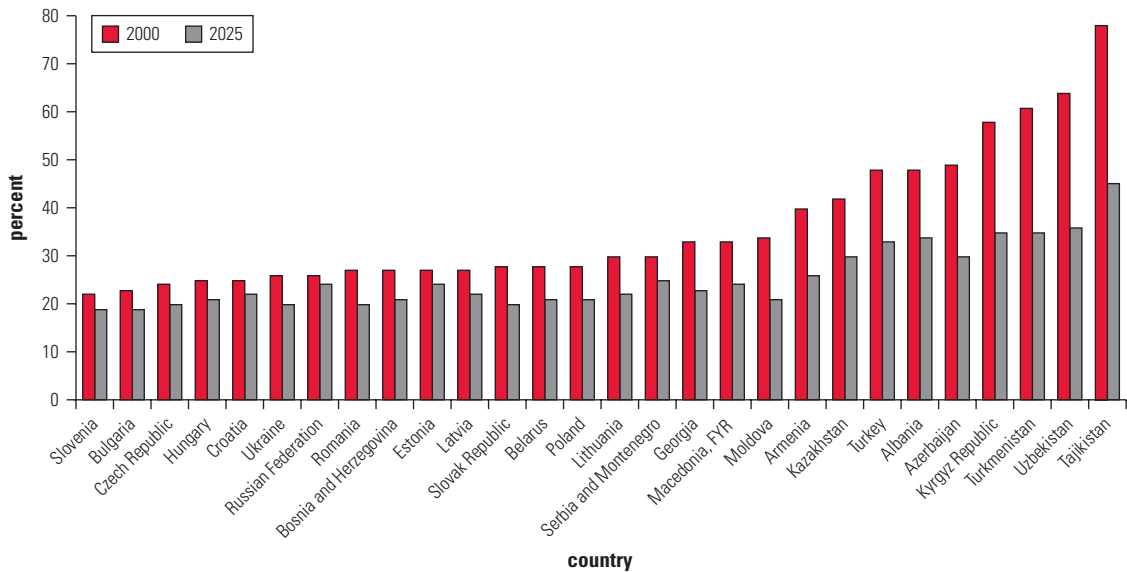
Population Change and Dependency Rates

Dependency rates in the region are changing significantly. However, because of the very different paces of transition, large variations are expected in projected dependency rates in the next 20 years and beyond.

All countries in the region will see a decline in the child dependency rate, defined as the number of people younger than 15 years of age per 100 people who are 15 to 64 years (figure 1.18). For some countries, this decline will be significant. In Azerbaijan, the Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan, child dependency rates are projected to decrease by at least 40 percent between 2000 and 2025 because of the projected declines in fertility rates, coupled with significant increases in the proportion of their populations in the working-age group. This latter development is partly because of population momentum from previous decades of high fertility levels. Albania, Armenia, Kazakhstan, Moldova, and Turkey will also experience significant declines in child dependency rates, while the rest of the countries in the region—which have already been experiencing low levels of fertility over the past decades—will see relatively smaller declines.

Elderly dependency rates—defined as the number of people 65 years and older per 100 people 15 to 64 years—will increase in all

FIGURE 1.18
Child Dependency Rates in Eastern Europe and the Former Soviet Union, 2000–25

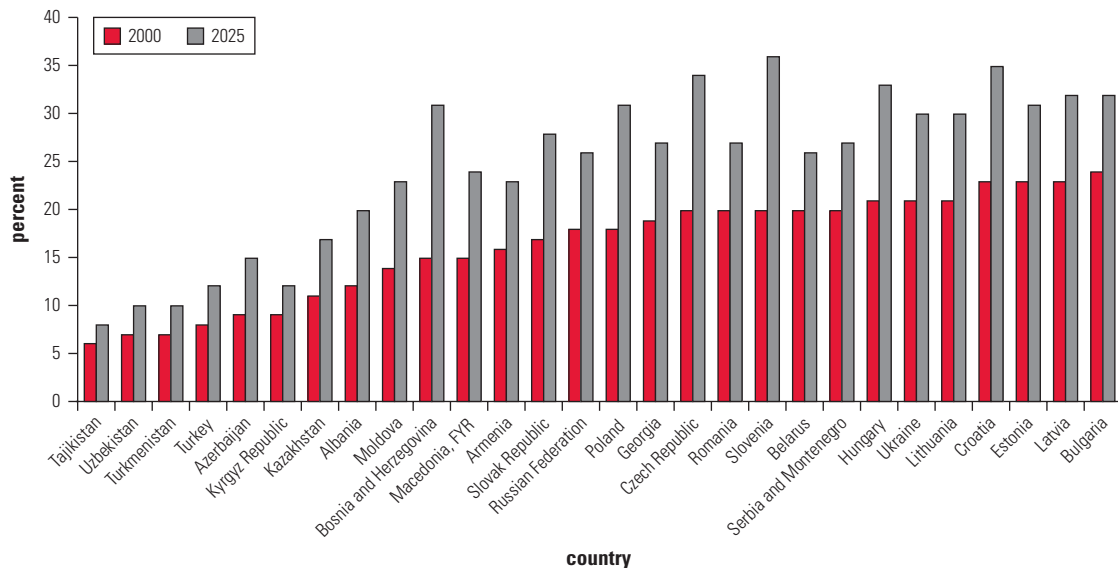


Source: United Nations 2005.

countries of the region. The largest increases will be experienced by Bosnia and Herzegovina, Croatia, the Czech Republic, Hungary, Poland, and Slovenia, while the smallest increases are projected for Tajikistan, Turkey, Turkmenistan, and Uzbekistan (figure 1.19).

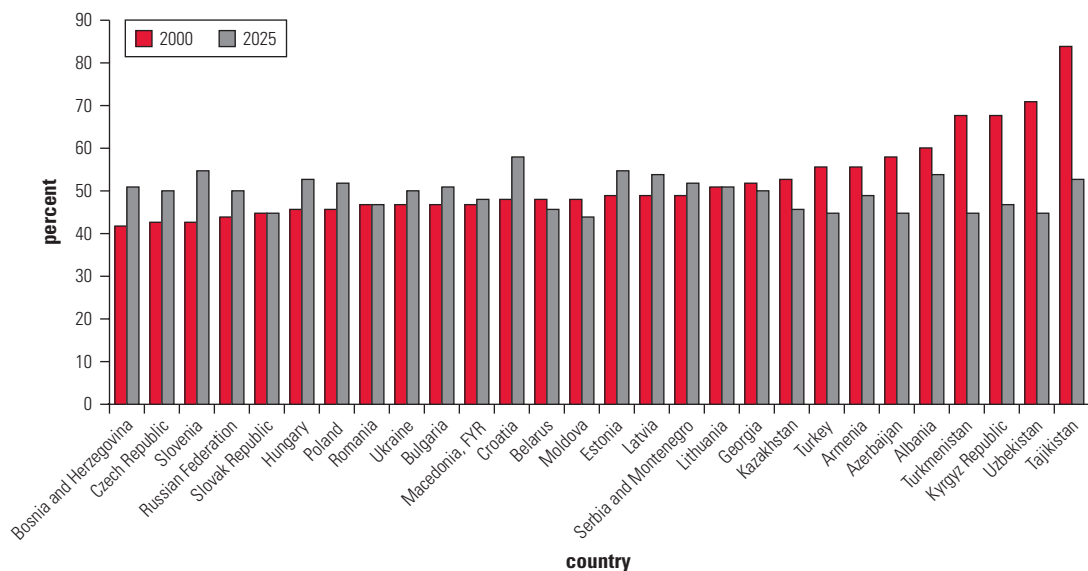
The total dependency rate—defined as the number of people younger than 15 years plus the number of people 65 years or older per 100 persons 15 to 64 years—will fall in 12 countries of the region (figure 1.20). In those countries, the sharp decline in the child dependency rate will generally offset the increase in the elderly dependency rate. Countries that will see the largest declines in the total dependency rate include Albania, Armenia, Azerbaijan, the Kyrgyz Republic, Tajikistan, Turkey, and Uzbekistan. Another 12 countries will see an increase in total dependency, because the fall in the child dependency rate will not be large enough to offset the increase in the elderly dependency rate. Countries that will experience the largest increase in the total dependency rate include Bosnia and Herzegovina, Croatia, the Czech Republic, Estonia, Latvia, Poland, and Slovenia. Other countries will see modest increases in total dependency rates. Four countries in the region—Lithuania, FYR Macedonia, Romania, and the Slovak Republic—will see almost no change in total dependency rate during 2000 to 2025.

FIGURE 1.19
Elderly Dependency Rates in Eastern Europe and the Former Soviet Union, 2000–25



Source: United Nations 2005.

FIGURE 1.20
Total Dependency Rates in Eastern Europe and the Former Soviet Union, 2000–25



Source: United Nations 2005.

Two Distinct Demographic Profiles: Old Countries and Young Countries

Considering the various trends discussed in this chapter, Eastern European and former Soviet countries can be classified according to their position in the demographic transition. Table 1.2 presents the region's countries in terms of an old-young dichotomy that is used throughout this report. This classification uses a threshold of at least 10 percent of the projected population by 2025 in the 65 years and older category to differentiate between "old" and "young" countries.³ Figure 1.21 arrays the region's countries according to this older-age group share in 2025 and projected population changes between 2000 and 2025. As would be expected, there is a strong negative correlation between the two measures.

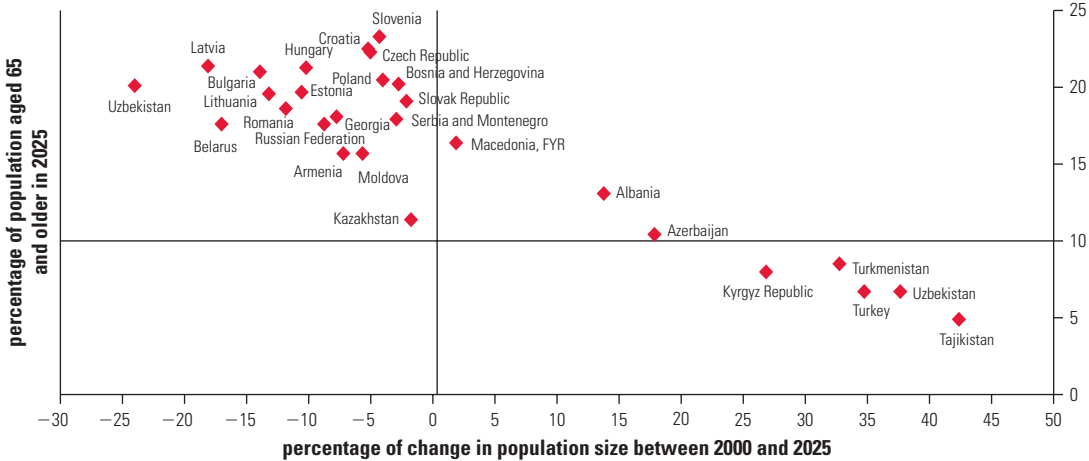
Countries characterized as *already old* have had long-lasting declines in fertility and improvements in mortality. They have experienced the

TABLE 1.2
Old and Young Countries in Eastern Europe and the Former Soviet Union

Old countries	Young countries
<i>Already "old"</i>	
Belarus	Kyrgyz Republic
Bosnia and Herzegovina	Tajikistan
Bulgaria	Turkmenistan
Croatia	Turkey
Czech Republic	Uzbekistan
Estonia	
Georgia	
Hungary	
Latvia	
Lithuania	
Montenegro	
Poland	
Romania	
Russian Federation	
Serbia	
Slovak Republic	
Slovenia	
Ukraine	
<i>"Aging"</i>	
Albania	
Armenia	
Azerbaijan	
Kazakhstan	
Macedonia, FYR	
Moldova	

Source: Staff assessments based on demographic trends and indicators described in the text.

FIGURE 1.21
Proportion of the Projected Population 65 Years and Older in 2025 and Percentage of Change in Population Size between 2000 and 2025 in Eastern Europe and the Former Soviet Union



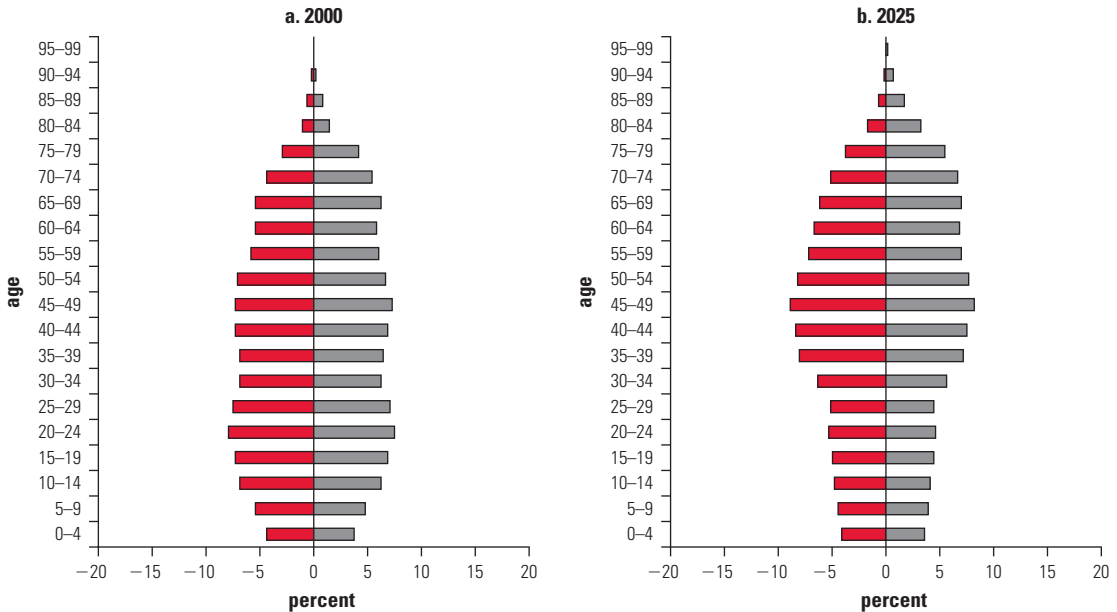
Source: World Bank staff calculations, based on United Nations 2005.

transition stages of the aging process and are not projected to see further declines in their already low levels of fertility nor much change in life expectancy in the next 50 years. Likewise, the population growth rates in those countries are not projected to show much change in the 2000-to-2025 period. In fact, most countries fitting this profile are expected to experience declines in their population size, and most have negative but largely unchanging population growth rates. Those countries already have population structures dominated by older age groups. The proportion of the population in the younger age group has been so significantly reduced that the traditional population pyramid with a wide bottom already shows strong signs of being flipped on its head within the next two decades. (The example of Bulgaria is presented in figure 1.22.) Two countries in that category that have somewhat unusual profiles are Russia and Georgia. Russia is unusual because the population share in the oldest age group is smaller than in other countries categorized as being old. This difference is because of the extremely high levels of early adult mortality, which reduces the population reaching the higher age groups.

To that group are added *aging* countries that are approaching, and by 2025 will have surpassed, the threshold of 10 percent of their population in the 65 and older age group. Those countries—Albania, Armenia, Azerbaijan, Kazakhstan, FYR Macedonia, and Moldova—have experienced significant declines in fertility and gains in longevity in the past decades and have seen increases in the median age. Their population structure already shows signs of an old population, and

FIGURE 1.22

Population Age Structure of Bulgaria, 2000 and 2025



Source: World Bank staff calculations, based on United Nations 2005.

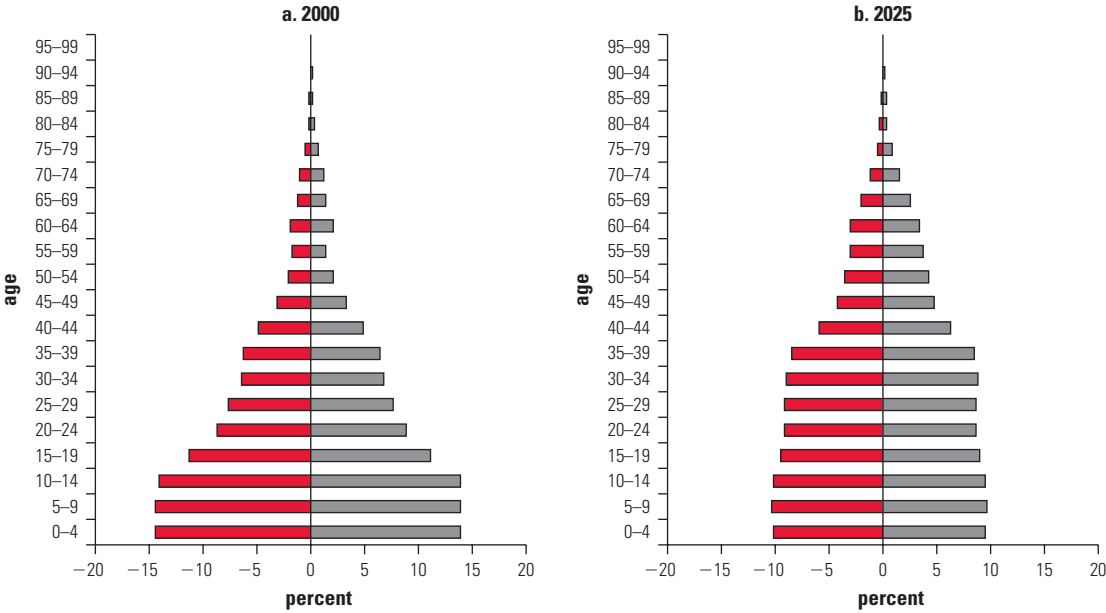
they are projected to see further changes in fertility and mortality. Some of those countries are also expected to start experiencing declines in population size, a transition that is projected to accelerate during the next 20 years.

Countries that are characterized as *young* are those that still have the largest proportion of their population younger than age 65 and will not reach the 10 percent threshold by 2025. Those countries have fertility rates above the level for population replacement, but those rates are declining. The population pyramid will narrow somewhat for those countries but will retain its traditional shape, as shown in the case of Tajikistan (figure 1.23). Young countries will see their populations grow during the next 20 years or so and will continue to maintain a high (if decreasing) proportion of the population that is young.

Conclusion

The rapidly changing demography in the countries of Eastern Europe and the former Soviet Union is a dramatic trend with potentially major economic and social implications. The population is projected to shrink in 15 countries, led by Russia and Ukraine, where the populations are projected to fall by 18 million and 7 million, respectively, between 2000 and 2025. The other countries with declining populations are in

FIGURE 1.23
Population Age Structure of Tajikistan, 2000 and 2025



Source: World Bank staff calculations, based on United Nations 2005.

Eastern Europe. The share of older people is projected to rise in all the region’s countries during the next few decades, and by the year 2025, most countries will have populations where one person in every five will be older than 65. Other countries, primarily in the former Soviet Union, plus Turkey and Albania, are not nearly as far into the demographic transition as their European counterparts. Consequently, they have much younger population structures and will generally experience reasonably strong population increases to 2025. However, in some ways, those countries are aging more rapidly as fertility rates drop significantly and longevity increases. Nonetheless, throughout the period covered by this study, those young countries will not face the aging pressures experienced by the European countries.

In many ways, the aging in the older countries in the region is similar to what is being experienced in Japan and Western Europe. As in those cases, fertility rates have been below replacement levels for a long time and life expectancy has been high, though not as high as in the industrial countries. But the pace of the aging process in Eastern Europe and the former Soviet Union has been even more rapid than elsewhere. Moreover, the interaction of the demographic transition with the fundamental economic and political transitions that are still taking place makes the region’s experience unique and especially challenging.

Notes

1. In this report, the countries in Eastern Europe and the Former Soviet Union include Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, the Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, the Kyrgyz Republic, Latvia, Lithuania, the former Yugoslav Republic of Macedonia, Moldova, Montenegro, Poland, Romania, the Russian Federation, Serbia, the Slovak Republic, Slovenia, Tajikistan, Turkey, Turkmenistan, Ukraine, and Uzbekistan. Because the projections used in this chapter are based on the 2004 revisions by the United Nations, Serbia and Montenegro are not separated. These countries, plus Kosovo, constitute the administrative region of Eastern Europe and Central Asia in the World Bank's delineation.
2. The replacement level of fertility is the level at which a population replaces itself from one generation to the next. For industrial countries, it is estimated at 2.1 children per woman; however, for developing countries, a level of average fertility higher than 2.1 might be required because of higher infant and child mortality. A country might reach a replacement level of fertility and still continue to grow because of mortality, migration, and the momentum dictated by past and current demographic trends.
3. United Nations publications and reports define *aged populations* as those with at least a 10 percent share of people 60 years and older. This criterion, set at the 1982 World Assembly on Ageing, has been debated more recently, with arguments put forward that a more appropriate cutoff age for an elderly person would be 65 years. This study adopts the 65 years and older criterion as the threshold for an old population.