

# Overview

*Age is opportunity no less than youth itself.*  
—Henry Wadsworth Longfellow (1807–82)

## Introduction

The countries of Eastern Europe and the former Soviet Union are experiencing a third transition, a transition that overlaps with their recent political and economic transitions. In 2025, more than one in five Bulgarians will be more than 65 years old—up from just 13 percent in 1990. Ukraine’s population will shrink by a fifth between the years 2000 and 2025. And the average Slovene will be 47.4 years old in 2025—among the oldest in the world.

This third transition—from red to gray—is unique. Populations have been aging quite rapidly in many countries; by 2010, populations will start decreasing in such industrial countries as France, Italy, and Japan. Yet the unique conjunction of rapidly aging and relatively poor populations exists only in this region. Indeed, between 2000 and 2005, the only countries in the world with population declines of more than 5,000 people were 16 countries in Eastern Europe and the former Soviet Union—led by the Russian Federation, Ukraine, Romania,

Belarus, and Bulgaria. No aging country is as poor as Georgia—set to lose 800,000 people over the next two decades and with a per capita gross national income of just US\$1,060 in 2004. And no other countries in the world face the dual challenges of a rapidly aging population and an incomplete transition to mature market institutions to deal with the adverse economic consequences of aging.

This report examines the possible impact of this third transition. It analyzes projections and policy outlooks for a whole range of issues, from labor markets to pension policies, from health care to savings and capital markets. *It concludes that although aging in the region is occurring in the context of unprecedentedly weak institutional development, countries can avoid severe economic consequences if they accelerate their economic transition and undertake longer-term policies to meet the aging challenge.*

The report sends two central messages, which are analyzed against the different patterns of aging across the region:

- **Red light to green light: Growing older does not have to mean growing slower.** Aging is not a stop sign for growth—if countries enact policies that boost productivity and labor force participation.
- **Red ink to black ink: Waging sensible policies can ease aging's spending impact.** The policies needed to manage much of the expected jump in public spending—especially the impacts on pensions and on health care—are well known. They need only to be enacted and implemented.

### **Red Light to Green Light: Growing Older Does Not Have to Mean Growing Slower**

Empirical evidence based on historical data from around the world does suggest a strong and negative relationship between aging and domestic saving rates. However, this evidence cannot be applied easily to aging Eastern European countries. For all but a few of the new European Union (EU) members in Central Europe, demographic-induced drops in savings will be offset by higher incomes from the early years of rapid growth—and by the ability of firms to use international financial markets for their investment needs.

Nor is the threat of shrinking labor supplies as populations age a given. Straightforward policy interventions can raise the relatively low labor force participation in most of the region. However, two other factors are critical. Most important, quantity shortfalls can be more than covered by increases in labor productivity—especially if education systems move to more flexible lifelong learning models, if investments in new technology and other complementary factors of production are

not constrained by low foreign or domestic savings, and if enterprise restructuring allows for labor and capital to continue to shift to new and more productive forms and sectors. And, if politics permit, shortages in the quantity of labor can easily be offset by migration within the region—much as today’s migrants from Central European EU members are providing skills needed in some Western European countries.

### **Red Ink to Black Ink: Waging Sensible Policies Can Ease Aging’s Spending Impact**

Many of the region’s countries are, indeed, likely to face significantly higher expenditures in health care, elderly care, and public pension payments. But this report argues that three factors can mitigate the impact of aging. First, the direct impact of aging on total expenditures in health is low, with many of the cost drivers in health coming from technological factors that are independent of aging. Second, aging also reduces demand for public expenditures on education, as cohorts shrink and the large share of education in most national budgets creates the potential for offsetting fiscal savings. Third, most countries have the time, over two decades, to institute proactive reforms that rationalize the structure of and demand for health care, flexible policies to address long-term care for the infirm aged, and pension reforms that provide sufficient income in retirement while making pension systems sustainable.

The danger lies in complacency. The blow from aging will be sharpest if policy makers are not proactive or far sighted enough to implement the expenditure reforms whose general outlines are known today.

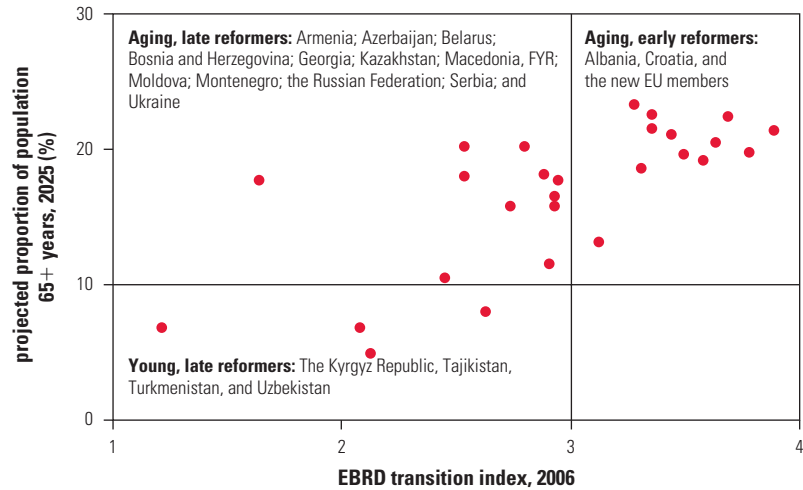
The region has vastly different patterns of aging, but also vastly different paces of adjustment within the “second” (economic) transition. Top-heavy public hospitals and inherited pension systems that pair generous coverage with small tax bases strain public expenditures. Subsidized enterprises that hoard unproductive workers and education systems that are unable to teach flexible, market-oriented skills lack the nimbleness to boost worker productivity. And despite the political openness brought about by the “first” (political) transition, institutions are not yet sufficiently mature in many countries to make the hard choices for the longer run.

The speed of the aging and the breadth and depth of the institutional transformation will determine how easily different economies cope. This report outlines the complex challenges facing countries in three groups (figure O.1):

- **Young, late reformers.** *The young, late reformers include the four poorer Central Asian countries—the Kyrgyz Republic, Tajikistan, Turkmenistan,*

FIGURE 0.1

### The Region's Different Mixes of Demographic and Economic Transition



Sources: World Bank staff calculations, based on United Nations 2005 and EBRD 2006.

Note: Turkey, although part of the region, is excluded because of the absence of data on the transition index. EBRD = European Bank for Reconstruction and Development. The new EU members are Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic, and Slovenia.

At the time of publication, separate figures were often not available for Serbia and for Montenegro. In such cases, throughout the publication, the aggregated data are given.

EBRD = European Bank for Reconstruction and Development.

and Uzbekistan. They will still have growing populations over the next two decades. They face significant policy challenges, but they have made a later transition to mature market institutions.

- **Aging, early reformers.** *The aging, early reformers include the 10 transition countries that recently joined the European Union, as well as Albania and Croatia. Aging rapidly, they are fairly advanced in reforming their economic institutions. If they continue the pace of their reforms, they are well placed to meet the emerging challenges.*
- **Aging, late reformers.** *The aging, late reformers are the remaining former Soviet nations, as well as many countries in the western Balkans. They face the greatest threat from aging—not just because of their demographic shifts, but also because their reforms are not on pace to help mitigate the effects of aging.*

### Red to Gray: A Unique Demographic Transition

The populations of all Eastern European and former Soviet countries grew over the past 50 years, but most of them will shrink between 2000 and 2025 (table O.1). This demographic transition is part of the global demographic trend toward longer life expectancy and lower

**TABLE 0.1**  
**By 2025, Many More Countries in the Region Will Have Their**  
**Population Shrink Rather Than Rise**

Population gained (millions)		Population lost (millions)	
Turkey	22.3	Russian Federation	17.3
Uzbekistan	9.3	Ukraine	11.8
Tajikistan	2.6	Romania	2.3
Turkmenistan	1.6	Poland	1.6
Azerbaijan	1.5	Bulgaria	1.5
Kyrgyz Republic	1.3	Belarus	1.4
Albania	0.4	Georgia	0.8
Macedonia, FYR	0.1	Hungary	0.8
		Czech Republic	0.5
		Lithuania	0.4
		Latvia	0.3
		Moldova	0.3
		Serbia and Montenegro	0.3
		Kazakhstan	0.3
		Croatia	0.2
		Armenia	0.2
		Estonia	0.1
		Slovak Republic	0.1
		Bosnia and Herzegovina	0.1
		Slovenia	0.1

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

fertility—and the resulting shift toward population structures dominated by old people rather than young. The pace of aging naturally varies for countries and regions. The most dramatic aging worldwide has already occurred, but aging is expected to continue in those countries that for decades have had fertility rates below replacement levels, such as Japan and the countries of Western Europe. The median age of populations in Europe will increase from 38 today to 49 in 2050, over 20 years more than the median age in Africa. Spain—with half its population older than 55 by 2050—will be the oldest country in the world, followed closely by Italy and Austria, where the median age is projected to be 54 (box O.1).

But the fastest aging countries over the next two decades will be in those of Eastern Europe and the former Soviet Union, the result of unprecedented declines in fertility and rising life expectancies. This region (not including Turkey) is projected to see its total population shrink by about 23.5 million. The largest absolute declines will be in Russia, followed by Ukraine and Romania. The Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan, as well as Albania and Turkey, will still have growing populations. For most other countries in the region, the projected changes in absolute population size are expected to be less pronounced.

**BOX 0.1****Demographic Projections**

Population projections used in this study are drawn from the *World Population Prospects: The 2004 Revision*, produced by the Population Division of the United Nations Department of Economic and Social Affairs. 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.

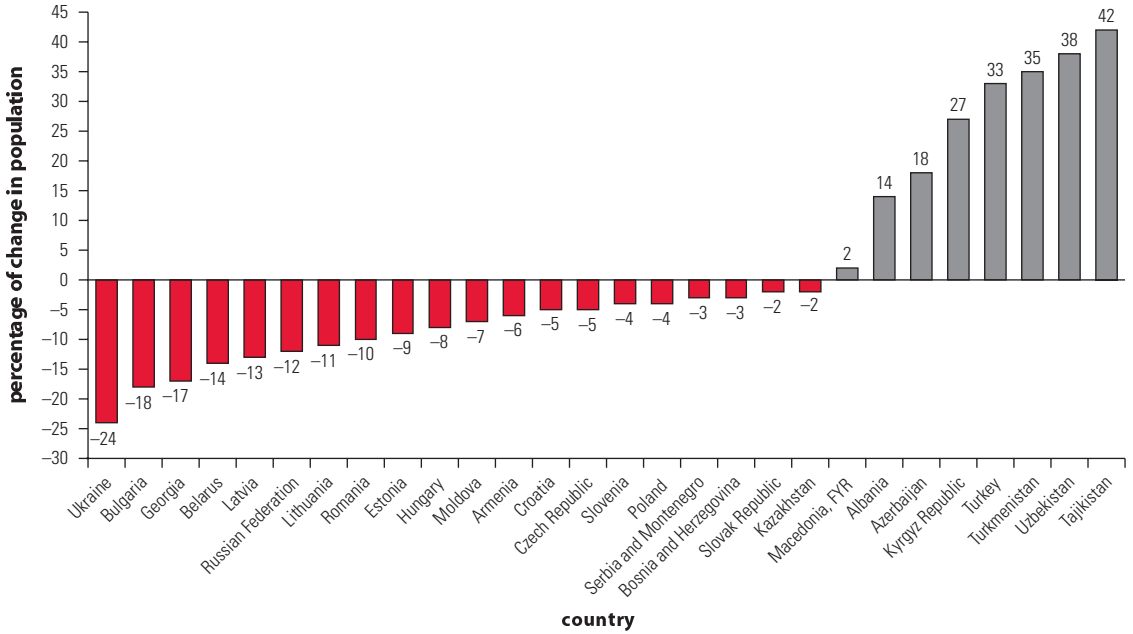
All population projections begin with an existing population structure and apply to it fertility and survival rates determined according to assumptions about future trends in fertility and mortality. In this sense, therefore, demographic projections are conditional statements about the future, given a set of assumptions about the key population flow variables (fertility, mortality, and, to a lesser extent, migration). The United Nations projections deal with the uncertainty of population projections by producing four projections (variants) that are based on different scenarios of low, medium, high, or constant fertility. For this report, the medium variant projections have been used.

The impact of the population decline will be much larger in some of the smaller countries, which will lose a significant share of their populations over the next two decades (figure O.2). Latvia (2.3 million people) and Lithuania (3.4 million) will lose more than a tenth of their populations. Poland will lose 1.6 million, or about 4 percent of its 38 million people.

The economic impact of these changes will be felt most through the rising proportion of the elderly—those age 65 and older. Most countries had old-age shares (which we define here as the percentage of the population older than 65) of less than 15 percent in 2000; the exceptions were Bulgaria, Croatia, and Estonia. But this mark will be exceeded by 2025 in all but seven transition economies and Turkey (figure O.3). The largest increases (8 percent or more) are expected to occur in countries that already have older populations, such as the Czech Republic, Poland, and Slovenia. Bosnia and Herzegovina will see the fastest increase, with its elderly dependency ratio almost doubling. For nine countries, between one fifth and one quarter of the population will be 65 and older by 2025—comparable to the situation in Italy, where the proportion is projected to be about 26 percent.

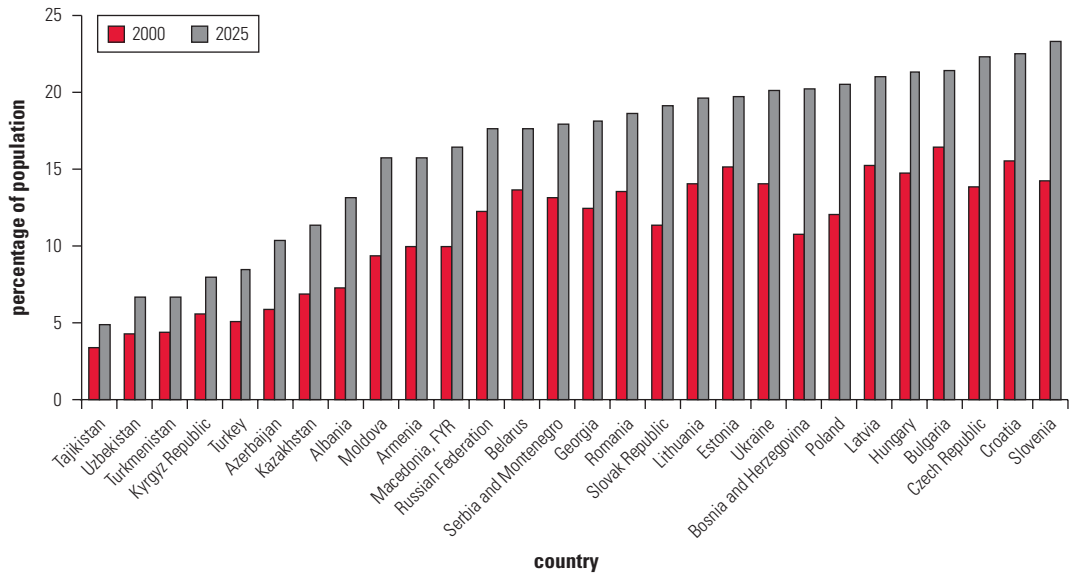
As populations become dominated by older people, median ages are projected to continue to rise, even for countries (mostly in Central Asia and in Turkey) that still have fertility rates above replacement levels. Between 2000 and 2025, countries that already have median ages over 35 years (half the countries in the region) are projected to see

**FIGURE 0.2**  
**Most Countries in the Region Will Have Significant Population Decreases Between 2000 and 2025**



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

**FIGURE 0.3**  
**The Proportion of Population Aged 65+ Will be Much Higher by 2025**



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

even further increases, to as high as 47 years in the Czech Republic and Slovenia, approaching Italy's median of 50 years. Even Tajikistan—with a low median age of 18—will see its median age rise to about 26 because of slowly declining fertility rates and improvements in longevity.

Several of the countries are aging in ways similar to Western Europe and Eastern Asia. Fertility rates have been below replacement levels since the mid-1970s for most of the industrial world, and the same trend is expected for the region's eastern neighbors, including China (but excluding Afghanistan). Life expectancies in the region are also increasing—though today's industrial countries have longer life expectancies. For instance, Japan will have a life expectancy for women of about age 82 by 2025, about 6 years more than the highest projected for Eastern Europe and the former Soviet countries (in Croatia, the Czech Republic, and Slovenia). Old-age shares are also comparable for some countries in the region and their richer neighbors: Slovenia, for example, will see its over-65 population grow from 14 percent in 2000 to about 23 percent in 2025, falling between projections for the United Kingdom (20 percent) and for Italy (26 percent).

At the other end of the spectrum, Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan will look more like India, where about 8 percent of the population is projected to be 65 and older by 2025. The projected median ages for Bulgaria, the Czech Republic, and Slovenia will be closest to projections for Japan and Italy, which may have the world's oldest populations. For most of the region, the projected median ages (between 40 and 45) are comparable with those in Ireland and the United Kingdom (42).

Governments in a number of countries in the region have attempted to mitigate these aging trajectories by introducing various "pronatalist" incentives. Some examples are shown in box O.2, along with a wider range of initiatives that have been implemented in Western European countries.

The economic impact of the demographic transition will be qualitatively different—and felt more strongly—in the Eastern European and former Soviet countries than in aging countries elsewhere in the world. The region's aging process is proceeding at a pace not seen before for such a diverse group of countries. The population share over 65 years of age will almost double in Bosnia and Herzegovina between 2000 and 2025 and will grow by more than 60 percent in such diverse countries as Albania, Azerbaijan, the Czech Republic, Kazakhstan, the former Yugoslav Republic of Macedonia, Moldova, Poland, the Slovak Republic, and Slovenia (see figure O.3). Strikingly,

**BOX 0.2****Pronatalist Policies in Europe**

In many countries that have reached low levels of fertility, governments have initiated pronatalist policies to encourage higher birth rates. Their success depends, of course, on whether they counteract the actual factors that contributed to the significant declines in fertility in the first place. The number of children a woman or a couple decides to have is a result of a complex mix of factors, including cost of bringing up children, opportunities for women's participation in higher education and employment, household economic status, marital status (including divorce and cohabitation), and degree of compatibility of work with child care.

Examples of pronatalist incentives in Europe are shown in the table below.

**Examples of Incentives that Could Encourage Child Bearing**

Country	Incentives that could encourage childbearing	Total fertility rate, 2005
France	Mothers receive 16 weeks unpaid leave for the first and second children and 26 weeks for the third. Subsidies are provided for families with 3 or more children.	1.90
Germany	Mothers receive 14 weeks leave, with parental leave up to 36 months. Limited child care centers are available.	1.37
Ireland	Mothers get 26 weeks of leave. Fathers get 14 weeks of leave.	1.99
Italy	A one-off payment of €1,000 is available for the second child.	1.33
Norway	Mothers receive 12 months off work with 80 percent pay or 10 months off work with 100 percent pay. Fathers must take 4 weeks of leave	1.81
Poland	Legislation is in process that would pay women for each new birth (€258, and poor women receive double). The government plans to increase housing stock.	1.78
Russian Federation	Maternity hospitals are free, and pregnant women get free vitamins and iron supplements.	1.30
Sweden	The government pays for 18 months of paid maternity leave. Subsidized day care and flexible and reduced work hours are also available.	1.75
United Kingdom	Mothers receive 6 months of paid leave and optional 6 months' unpaid leave after that. Free early education centers are available.	1.74

France is an interesting case for considering the effect of pronatalist policies, both because of its long history of interventions in this area and because of recent increases in the birth rate. Indeed, France has encouraged couples to have larger families for a long time, partly because some regions were among the earliest in Europe to experience fertility transition. The first paid maternity leave was introduced in 1913, and the Family Code was drafted in the late 1930s. The pronatalist interventions that France has offered include maternity leave, benefits for children, family allowances, a single-parent allowance, an adoption allowance, and larger housing for larger families. Couples enjoy some of the most generous maternity and paternity leaves in Europe: all women workers are entitled to a paid, job-protected maternity leave of 6 weeks before and 10 weeks after birth for the first two children. In addition, after maternity leave expires, parents

*(continued)*

**BOX 0.2****(continued)**

can take leave until the child reaches age three with entitlement to reintegration into the workplace. France has one of the largest networks of public child care facilities, providing full day care beginning at age two or three. A third-child policy pays more than for the first two children. During 1995 to 1998, France spent about 2.3 percent of its gross domestic product on family benefits.

Nonetheless, projections suggest that cohort fertility in France continues on a downward trend and that the 1970 cohort (which still has to complete fertility) will have completed fertility of 1.98 children per woman. This decline in cohort fertility is not unique, by any means, in Europe. Although France does have comparatively higher period and cohort fertility than some other European countries, there is not sufficient evidence of the effect of family policies; even if these policies have had an effect on fertility, they have not been effective enough in raising fertility above the replacement level of about 2.1 children per woman.

The conclusion is consistent with the weight of consensus among demographers that the effect of transfer-based pronatalist policies is negligible. Some authors have commented that, for such policies to be effective, countries will have to adopt a more comprehensive menu with a mix of family and social policies that could be quite costly and complex to implement. This is because the usual monetary transfers or tax breaks are too low to cover the full costs of having and raising children to adulthood and are usually seen as temporary measures by parents and potential parents. For such policies to have a more significant impact on reproductive choices, they need to combine financial options with work and family incentives (McDonald 2000).

in the Czech Republic, Poland, the Slovak Republic, and Slovenia, this rapid growth will be from old-age shares that are already high—above 10 percent in 2000.

The other major difference from the more industrial aging countries is in the unprecedented interaction of the demographic transition with the comprehensive economic and (to an extent) political transitions still under way in most of the region. It is the interaction of the three transitions that makes the region unique.

Most social and economic implications of aging are universal, but Eastern European and former Soviet countries have only just started to come to grips with the political and economic transitions of the past two decades. They now face yet another structural transformation as their demographics change. The dissolution of the Soviet Union in 1991 was punctuated by a political transition from communism to democracy and by an economic transition from centrally planned to market economies. Although almost all the countries have completed

the political transition, if to different extents, much remains to be done in several key dimensions of the economic transition.

Even after several years of economic growth since 2000, countries in the region are still at very low levels of income and institutional development. In Ukraine, which is likely to lose the largest share of its population over the next two decades, incomes are barely above US\$6,000 per capita in terms of purchasing power parity (PPP), on par with countries such as Algeria and the República Bolivariana de Venezuela. Georgia, another country hit hard by the demographic transition, has a PPP per capita income of just over US\$1,000—in the same league as Mozambique or Rwanda. Even the richest economies in Central Europe substantially lag behind neighboring aging industrial neighbors such as Austria and Italy in terms of income and institutional maturity.

Economic growth in the first decade of the transition was generally stronger in countries that made more vigorous economic reforms:

- Following the initial economic collapse that affected the whole region, the Central European and Baltic countries recovered rapidly, pursued deep and pervasive market reforms, and pushed through integration with the European Union. Their challenge now is to further improve the business climate; address corruption and weaknesses in governance; maintain fiscal discipline and balance; and find solutions for their unsustainable health, social security, and pension systems—the lack of which is exacerbated by their aging populations.
- Countries of the western Balkans experienced a disintegration that was significantly more violent and catastrophic than elsewhere in the region, but they are recovering and are beginning to integrate with the rest of Europe. They are still going through normalization, even as they prepare for EU integration.
- Reform in the former Soviet countries has generally been slow. Some—such as Belarus and Turkmenistan—have not implemented meaningful economic reforms and are much further behind. Countries in the Caucasus have not fared well either, though recently there have been positive signs. Russia and Kazakhstan recovered rapidly from the initial disintegration and are looking to consolidate their positions, with mineral-led growth greatly helping their fortunes.
- Turkey, though not a postcommunist state, has been going through its own transition since the 2001 financial crisis, which was preceded by uneven economic development through the

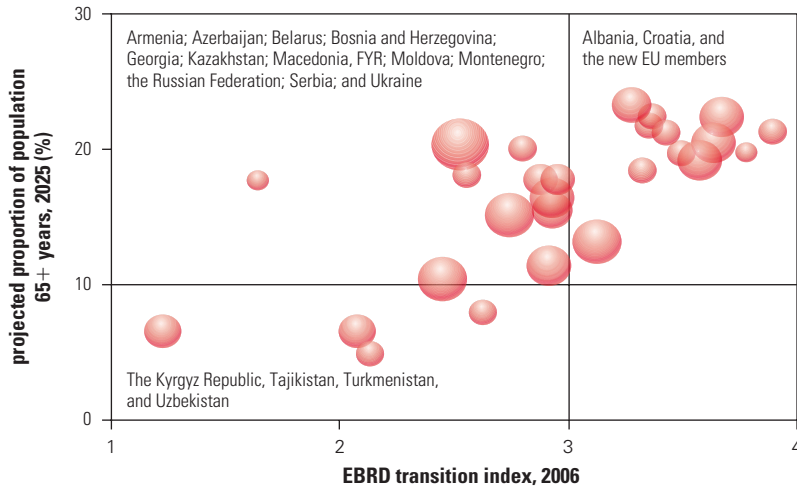
1990s. Privatization, banking and public sector reforms, social security reforms, and tight monetary and fiscal policies are at the core of its bold economic reforms. These changes are accompanied by a host of political and social reforms as the country progresses toward closer integration with the European Union.

Even for the most advanced among the region's countries, there are wide variations in the degree of the structural transformation across their economies, and accordingly, a significant agenda remains for economic reforms. For example, Slovenia, acknowledged to be among the most successful of the transition economies, is still hobbled by a relatively poor business environment, marked by a low-quality investment law and an inefficient transactions law (EBRD 2006). Eight of the region's countries—including the Czech Republic, Kazakhstan, FYR Macedonia, and Russia—maintain some form of control on the inflow of direct investment. And 15 countries limit land tradability.

Broader institutional development is also progressing slowly. The quality of insolvency laws is poor in such aging countries as Georgia, Hungary, Latvia, Lithuania, Slovenia, and Ukraine. Enterprise restructuring is a major item remaining on the agenda—by 2006, only the eight Central European members of the EU (excluding Bulgaria and Romania) had progressed significantly on this front. Large restructuring agendas remain in aging countries such as Bosnia and Herzegovina, Georgia, Moldova, Kazakhstan, Russia, Serbia, and Ukraine.

Most of the countries, except the four Central Asian republics, will have significant old-age shares (over 10 percent) by 2025 (figure O.4). In Belarus, Bulgaria, and Estonia, this ratio will not change greatly in the next two decades: much of the aging has already happened there. In other countries, however, the relative growth in the elderly population will be significant.

The policy challenge is that only a dozen countries—the 10 new EU countries, Croatia, and (marginally) Albania, all with potentially significant old-age shares—have achieved significant progress in economic transition (indicated in figure O.4 by a score 3 or above on a scale of 1 to 4+ on a European Bank for Reconstruction and Development index). At the other extreme are the four Central Asian republics—the Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan. Although they have not made significant progress toward market institutions, they have less demographic pressure because of the relative youthfulness of their populations over the next two decades. The countries facing the greatest challenge are those in the top left quadrant of figure O.4, primarily those from the former Soviet

**FIGURE 0.4****Countries Face Different Mixes of Demographic and Economic Transition**

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

Note: Bubble sizes show the change in the 65 and over population share between 2000 and 2025. The new EU members are Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic, and Slovenia. At the time of publication, separate figures were often not available for Serbia and for Montenegro. In such cases, throughout the publication, the aggregated data are given.

EBRD = European Bank for Reconstruction and Development.

Union and the western Balkans. They have aging populations, a significant demographic overhang, often a growing pool of aged citizens, and incomplete market institutions for weathering the shock.

### Red Light to Green Light: Growing Older Does Not Have to Mean Growing Slower

Will the changing demographics in the region mean a halt to economic growth, because older populations have shrinking labor forces and save less, with negative consequences for investment and capital accumulation? Conventional wisdom argues yes. But this report does not find convincing evidence to support such doomsday predictions, which fail to consider the characteristics of today's transition economies—as demographic changes in these countries work their way to affect economic growth through at least three channels: labor and productivity, consumption and savings, and financial markets.

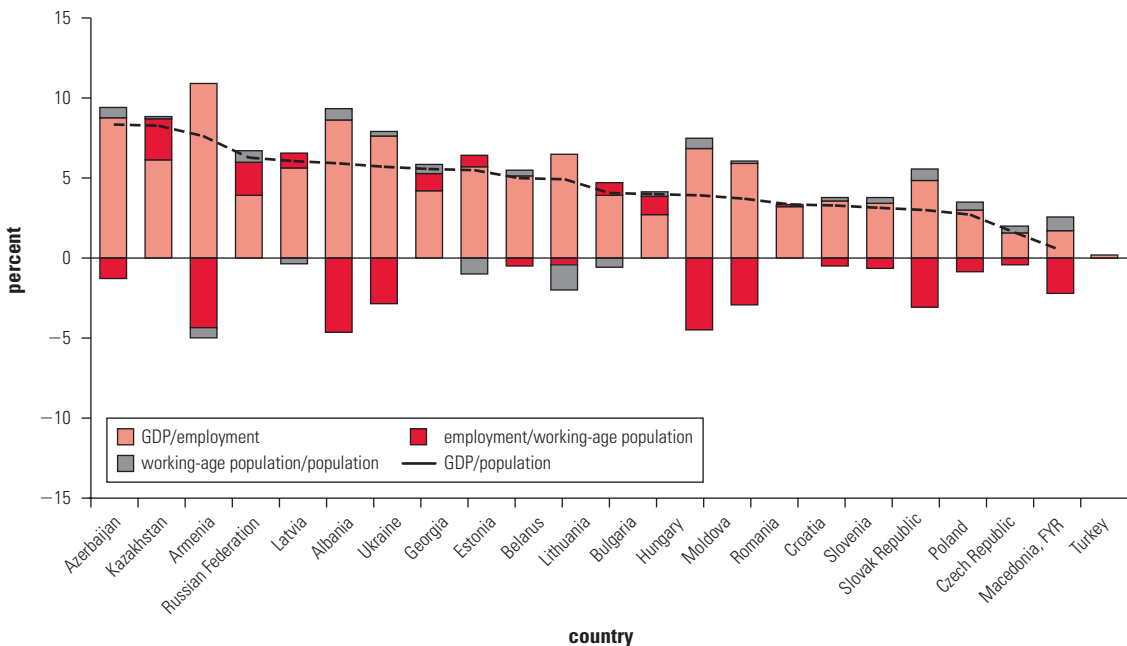
#### The Changing Labor Market and the Role of Productivity

As output growth depends on the supply and productivity of labor, the primary macroeconomic implication of aging is less economic growth, because it will lower the expansion of the pool of available

working-age individuals, other things being equal. For a given capital stock, a decline in the labor supply implies capital deepening that is “undesired” from the perspective of firms, which will respond by investing less. In labor markets, the reality is more complex and less demographically deterministic than conventional wisdom suggests. Although the region’s aggregate labor supply will decline over the next 15 years, the declines will generally be modest. The greatest challenge will be for countries that will have large declines in their working-age populations but already have high participation rates.

But changes in labor markets are not immutably determined by demographic legacies. First, productivity improvements are the core predictor of growth, so measures taken to improve labor productivity would swamp any quantity effects of smaller labor forces. In fact, growth decomposition exercises show that in most of the region’s countries in recent years, the growth in labor productivity has been the single greatest contributor to increases in per capita income (figure O.5). Second, the impact of aging on the labor supply can be at least partially offset by increases in the low labor force participation rates. Third, if political resistance is overcome, intraregional migration from younger countries can augment the labor forces of the aging countries.

**FIGURE O.5**  
**In the Region, Labor productivity Has Had a Stronger Impact on Growth Than Aging (1998–2005)**



Source: World Bank forthcoming a.

Note: GDP = gross domestic product. GDP/employment measures labor productivity, employment/working-age population measures the employment rate, and working-age population/population is a proxy for aging. All data are from 2005, except data for Albania and Kazakhstan, which are for 2004.

Despite good reasons to believe that demographic trends in the region do not inevitably mean problems for the labor market, policy makers need to carefully monitor and manage the situation over the next couple of decades, enacting appropriate policies to counter the effects of aging. Managing the situation will require labor market, pension, and education and training reforms, as well as better management of migration.

According to the 2004 United Nations population projections (medium variant), the region will lose only 458,000 persons age 15 to 64 (the conventional age range of the working-age population) between 2005 and 2020. True, this loss could be a source of concern for those who think that labor supply growth is essential for aggregate economic growth. But these overall numbers mask big differences within the region. The younger countries (the Kyrgyz Republic, Turkey, Turkmenistan, and Uzbekistan, as well as Albania and Azerbaijan, which are “aging” in our classification) will have gains in their working-age populations. Other countries (such as Belarus, Georgia, Russia, and Ukraine) will have losses, ranging from modest to very large. Clearly, this situation will create incentives for migration within the region.

For the whole region, but particularly for those countries with shrinking populations, labor productivity increases will be a major factor in maintaining and improving labor’s contribution to growth. There is good scope for major productivity increases, if proactive and sensible policies are adopted—especially outside the labor market (World Bank forthcoming b). Given the relatively low productivity as economies adjusted during the early years of transition, this increase can come both through a shift in resources from less to more productive industries and from productivity improvements within industries.

Much of the early drop in labor productivity, especially in the former Soviet countries, came from an economywide shift from higher-productivity manufacturing to subsistence farming and low-end services. Romania saw the share of employment in agriculture shoot from about 30 percent in 1990 to almost 43 percent in 2000, while employment in industry plummeted from 40 percent to just over 25 percent. As the economic transition progressed, however, this trend reversed, and average labor productivity in the economy improved. In Romania, agricultural employment fell back to less than 37 percent by 2002, while employment in industry returned to almost 30 percent.

In the new EU member states, labor productivity has generally been increasing more because of improvements within industries—as

in the countries of the Organisation for Economic Co-operation and Development (OECD)—with average annual labor productivity growth ranging from around 4 percent in the Czech Republic and the Slovak Republic between 1999 and 2005 to more than 5 percent in Hungary between 2000 and 2005 (Eurostat database). But shifts from less to more productive industries were not as large as in the OECD countries in previous decades, because enterprise restructuring is still incomplete in many countries. Industries with above-average productivity growth have been exactly the ones that shed relatively more labor during the earlier years of transition—so that productivity growth was initially driven more by defensive restructuring than by strategic restructuring, which allocates factors to their most productive uses. The good news is that the productivity gains expected from strategic restructuring are large. If enterprises are restructured and investment climates improved, large productivity gains can be expected.

Two other factors could add to future productivity increases. First, the region's economies are more integrated with the rest of the world in trade and capital flows—even though there is evidence of two poles of trade integration, with the European Union as one and Russia the other (World Bank 2005b). Both the demand for products for competitive external markets and the inflows of foreign direct investment in manufacturing and high-end services (especially in the European Union and neighboring countries) will drive innovation and technological change in the region, potentially adding to productivity growth. Second, as the region moves slowly to lifelong learning and flexible retraining modes, as is suggested later in this report, individual productivity will also increase.

In addition to productivity improvements, output in aging countries can receive a boost from increases in labor force participation, which can be a major compensating mechanism for a shrinking working-age population. Although patterns vary considerably across the region, many countries in Eastern Europe and the former Soviet Union have fairly low participation rates—particularly in older age groups. Men exit the labor force on average almost four years earlier, and women five years earlier, than in OECD countries. The early exits are driven in part by restructuring, with laid-off workers often withdrawing from the labor force because of scarce prospects for reemployment. Participation rates for older men have been falling while those for older women have been more stable.

Countries such as Hungary, FYR Macedonia, Poland, and Slovenia all face large increases to already high old-age dependency ratios (table O.2). Although this clearly poses challenges for labor supply,

**TABLE 0.2**  
**Labor Force Participation 50–64 and Old-Age Dependency, 2005–20**

Labor force participation of population age 50–64	Change in old-age dependency ratio, 2005–20		
	Moderate	Large	Very large
High	Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyz Republic, Lithuania, <sup>a</sup> Turkmenistan, Uzbekistan	Estonia <sup>a</sup>	Czech Republic <sup>a</sup>
Average	Belarus, Ukraine <sup>a</sup>	Latvia, <sup>a</sup> Romania, <sup>a</sup> Russian Federation	Albania, Bosnia and Herzegovina, <sup>a</sup> Moldova, Slovak Republic
Low	Tajikistan	Bulgaria, <sup>a</sup> Croatia, <sup>a</sup> Serbia and Montenegro, <sup>a</sup> Turkey	Hungary, <sup>a</sup> Macedonia, FYR; Poland; <sup>a</sup> Slovenia <sup>a</sup>

Source: van Ours 2006.

Note: High is greater than or equal to 60 percent, average is less than 60 percent and greater than 50 percent, and low is less than or equal to 50 percent. Moderate is less than 15 percent, large is greater than or equal to 15 percent and less than 30 percent, and very large is greater than 30 percent.

a. Old-age dependency ratio is equal to or greater than 25 percent.

these countries have relatively low participation rates among older workers, so there is room to adjust through raising these rates. In the Czech Republic, however, the demographic profile is similar, but increasing the labor force participation of older individuals will have limited effect because their participation rates are already high. Projections undertaken for this report demonstrate that policies that increase participation across all ages will have a greater influence on mitigating the effects of aging than simply focusing on increasing the participation of older workers.

National shortfalls in labor supply that remain after participation rates increase can also be covered by intraregional migration. Migration in the region is extensive by international standards, even unique in that the region is both a major sender and a major receiver of migrants (World Bank 2006). Migration, which was tightly controlled before the transition, loosened afterward. It has been marked by two sorts of flows, driven primarily by differences in economic opportunities. First, there have been flows from aging countries to other aging ones—most recently, with accession to the European Union, flows from the aging countries of Central and Eastern Europe to other aging countries in Western Europe. Second, in the years of transition, there have been continued flows from the young and poorer countries of the Commonwealth of Independent States (CIS) in the Caucasus and Central Asia to aging and richer CIS countries, particularly Kazakhstan and Russia.<sup>1</sup> Younger countries with growing working-age populations already have negative net migration, while the reverse is true for most aging and old countries, with some exceptions.

## Savings and Financial Markets

The growth of output in any economy also depends on capital accumulation—which requires investment, which, in turn, requires an equivalent amount of matching savings—and on the productivity of investment. Because individuals can invest only what they have saved or borrowed from others who have saved, savings is essentially the same as investment. Saving is thus the key ingredient in creating capital and a key determinant of growth. The concern about saving levels in aging populations is driven by life-cycle hypotheses, which suggest that aggregate saving is likely to decline because people save less as they grow older. However, there are various reasons to believe that this concern may be mitigated in the case of the aging countries of Eastern Europe and the former Soviet Union.

The available data provide some support for the argument that households and firms may currently be saving less than they desire and eventually will want to increase their savings beyond what would otherwise be predicted.

- First, the average saving rate for a number of Eastern European and former Soviet countries declined in the late 1990s and early 2000s, averaging only 15 percent for the region as a whole—down from 18 percent in the period before 1990. Contrast that with the average saving rate during the same period for the Western European countries, which was 24 percent. Looking ahead, one finds that convergence toward Western European levels would imply that future saving in Eastern European and former Soviet countries should be more than what would be expected otherwise.
- Second, saving in Eastern European and former Soviet countries has an unusually low share of both household and corporate savings compared with OECD countries outside the region (table O.3). Although differences exist both within the region's countries and within industrial countries, two additional features of saving in the former are particularly distinctive. First, foreign savings are crucial as a source of funds in most of the region's countries, whereas they are largely unimportant in industrial countries. The oil-producing countries in the region are the exception to the rule. Second, household savings play a much bigger role as a source of funds in most industrial countries than in the region's countries. Moreover, in some of the region's countries—Bulgaria being the starkest example—household savings have been negative for the past couple of years, suggesting that households are consuming by depleting their stock of assets. Most likely, this unusual composition of savings in the region reflects an incomplete economic transition.

**TABLE 0.3**  
**Uses and Sources of Funds: Selected OECD Countries and Eastern European and Former Soviet Countries**

percentages

	France			Germany			Japan		
	1980–1989	1990–1999	2000–2002	1980–1989	1991–1999	2000–2002	1980–1989	1990–1999	2000–2002
<i>Uses</i>									
Investment	100	91	93	—	97	89	92	94	93
Current account surplus	0	7	7	—	3	10	6	5	4
Government deficits	0	2	0	—	0	1	0	0	2
Others	0	0	0	—	0	0	1	1	1
<i>Sources</i>									
Household saving	43	45	48	—	49	50	43	38	33
Nonfinancial saving	34	42	37	—	36	36	38	40	54
Government surplus	7	3	7	—	3	3	16	15	0
Foreign saving	6	1	0	—	0	0	0	0	0
Other	10	9	9	—	11	12	3	7	12

	Czech Republic	Poland	Bulgaria	Estonia	Kazakhstan	
	1995–2001	1995–2001	1999–2002	1995–2002	1990–1999	2000–2002
<i>Uses</i>						
Investment	100	96	59	97	73	86
Current account surplus	0	1	0	0	2	9
Government deficits	0	0	0	0	15	0
Others	0	3	41	3	10	4
<i>Sources</i>						
Household saving	18	40	0	13	3	0
Nonfinancial saving	45	26	60	28	60	57
Government surplus	15	8	18	22	4	23
Foreign saving	11	—	20	24	17	1
Other	12	9	3	—	16	18

Source: United Nations System of National Accounts.

Note: — = not available.

Eventually, households and firms can be expected to stop running down assets and will want to replenish their savings to provide for retirement and to build precautionary cushions.

The roots of this low saving rate lie in history. In socialist times, strictly controlled earnings and access to credit meant that any available savings financed the consumption of durables and the purchase of property, where allowed. Additional savings could be accumulated in bank deposits (or pillowcases). Hyperinflation in the early years of the transition devalued monetized savings, while the early 1990s saw real wages drop in most countries, if only temporarily. Following privatization, corporate restructuring, and the inflow of new technologies, unemployment increased, and workers older than age 40 had difficulty finding new jobs. These developments meant that cohorts older than 40 in the 1990s and now approaching retirement—including the

baby boomers—mostly failed to accumulate significant savings. Even in countries where reforms introduced defined-contribution pension schemes, people older than age 40 were discouraged from joining them.

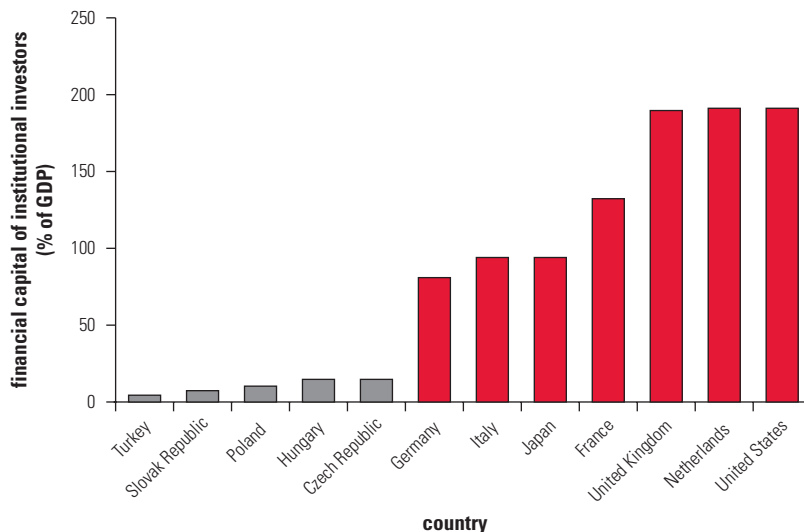
Thus, the forced savings of mandatory private pension schemes did not affect the portfolios of the elderly. The most important—and often only—asset of these cohorts is their owner-occupied real estate. Limited population mobility, shallow real estate markets, and lack of financial instruments (such as reverse mortgages) that would help liquidate such assets mean that aging-determined saving is unlikely to lead to supply shocks in either financial or real estate markets in the coming decade.<sup>2</sup>

Aging, of course, is not the only factor affecting household and private saving. Furthermore, private saving is not the only source of resources available for investment. A decline in low private savings does not necessarily imply a decline in investments. Corporate and foreign savings are other sources of investment, and they should remain largely unaffected by aging. And though total savings and total investment equal each other, the causality between the two is unclear. In other words, it is entirely possible that investment will remain high in the next decades as a result of still higher returns on capital than in Western Europe. The resources to fund such investments could come either from abroad—if outsiders' expectations about future growth potential in Eastern Europe and the former Soviet Union remain favorable—or from domestic savers, attracted by returns that are still high.

The major intermediaries in many of these flows will be the region's financial markets. They channel resources among individuals, institutions, countries, and economic sectors, while financial instruments shift consumption across different stages of the life cycle and match risk-return profiles to the circumstances of time and place. In the region's countries, these financial markets are generally underdeveloped—certainly when compared with those in the richer aging countries in the non-Eastern European OECD. In fact, even the more developed economies in the region are far behind OECD countries (figure O.6).

Financial systems in most of the region are still heavily dominated by banks, in that most financing is still channeled through them, though in some countries the securities market is also quite well developed. Bank deposits, the dominant saving instruments, still amount to only a small percentage of gross domestic product (GDP) in most countries. The exceptions are Croatia, the Czech Republic, and the Slovak Republic, where bank deposits are more than 50 percent but still far less than the over-100 percent rate typical of most industrial countries. This situation is a combined effect of low savings and

**FIGURE 0.6**  
**Financial Markets in Even the More Developed Economies of the Region are Shallower Than Those in Other OECD Countries**



Source: World Bank, Financial Structure Dataset.

little trust in financial intermediaries (and financial products in general). Because economies are small and foreign portfolio investment is limited to a few blue-chip offerings, the underdeveloped financial markets have negligible influence on global capital markets.

What does this imply for savings accumulation for productivity and growth? First, as financial markets deepen and the number and variety of savings instruments increases, there is likely to be greater opportunity for formal savings as individuals and corporations are better able to match their individual time horizons and risk profiles to the available instruments. Second, financial deepening and increased flexibility are also likely to boost overall productivity, as financial markets are able to more efficiently channel capital to the most productive uses. At the margin, therefore, the paradox is that the low level of financial development in Eastern Europe and the former Soviet Union poses an opportunity for more and better uses of savings for growth, and the challenge for the region's countries is how soon they can make this financial deepening happen through a better regulatory environment.

### **Red Ink to Black Ink: Waging Sensible Policies Can Ease Aging's Spending Impact**

There are widespread concerns that aging populations in Eastern European and former Soviet countries will exert new pressures on public spending, especially for pensions and health care. According to

this view, as the number of the elderly increases, both in absolute terms and relative to the working population, higher pension payouts will strain the already stretched social security budgets even further. In addition, aging populations would have significantly higher health needs, simply because the greatest demand for medical care occurs in the later years of life.

Another critical issue is long-term care for the very old, which either becomes costly as informal, family-based care declines or imposes opportunity costs if younger people have to spend time on care that they would otherwise spend working. As a result, medical and health care costs will rise as populations age, though the size of future health and disability expenditures depends crucially on whether the longevity revolution is adding healthy years—or years of illness and dependency—to the life span.

Aging will exert at least two different pressures on education, with potentially opposite budgetary consequences. The shrinking school-age population will make some cost savings possible. However, to maintain productivity and to increase the employability of older workers—which are essential to counteract the falling number of total workers—aging labor forces will require improvements in education and new forms of education throughout workers' active lives. Lifelong learning is almost nonexistent at present in the transition countries.

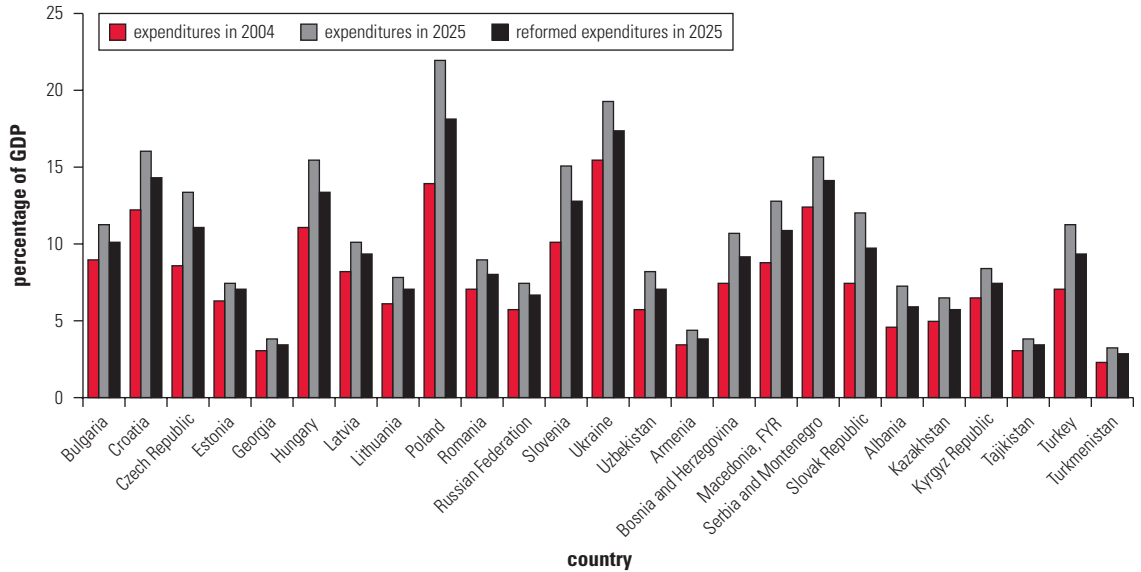
Offsetting these concerns is this report's finding that the blow to public expenditures can be fairly small—if well-understood policy measures are put in place for pensions, if proactive measures are undertaken for financing long-term care, and if savings in public education expenditures are reoriented toward initiatives that boost productivity.

### **Reforming Pension Systems**

With low and declining fertility rates and rising life expectancies in the region's aging countries, pension spending will have to rise to accommodate the larger number of elderly at current levels of benefits. This challenge is especially huge for countries that have unfunded pay-as-you-go (PAYG) social security systems—and already substantial pension spending.

Fortunately, this is only a potential scenario. A recent EU study based on detailed projections from each member country found that, on average, 47 percent of the projected demographic change could be mitigated by changes in policy, primarily changes in retirement ages and benefit rates (European Commission 2006). For this report, the EU results have been extended to other countries in the region

**FIGURE 0.7**  
**Pension Spending Would Rise Significantly Because of the Aging Effect, But Can Be Moderated by Reforms . . .**



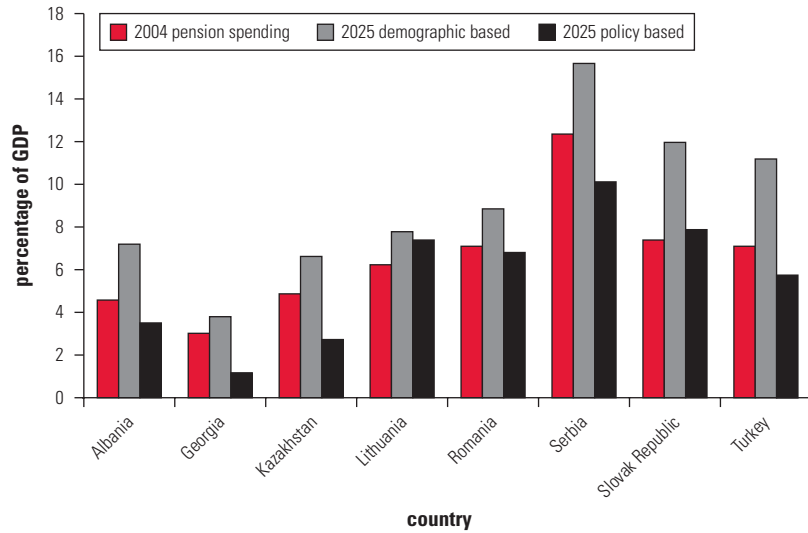
Source: World Bank staff calculations, based on European Commission 2006.

(figure O.7). Indeed, there are at least two untapped opportunities for further reforms in almost all Eastern European and former Soviet countries, although each admittedly is politically difficult to implement: raising and equalizing the retirement age between men and women (which can also increase labor participation) and using consumer price inflation—rather than wage inflation—to index pensions after retirement. In addition, aging countries also need to enact remedial policies in the form of a social pension if their current pension strategies still do not fulfill their original objectives of preventing poverty in old age and allowing consumption smoothing across a lifetime.

Under the simplest assumption that pension spending will go up in proportion to the rise in the percentage of the population older than age 65, pension spending will rise significantly in several countries, and by 2025, it will rise above that of Italy (the highest OECD pension spender) in Croatia, Hungary, Poland, Serbia, Slovenia, and Ukraine. Poland could have pension spending as high as 22 percent of GDP, with Ukraine not far behind at 19 percent (figure O.7). Even countries as varied as Bosnia and Herzegovina, Bulgaria, the Czech Republic, FYR Macedonia, the Slovak Republic, and Turkey could face pension spending levels higher than in many EU countries.

The World Bank’s own projections using the Bank’s PROST model lead to a similar conclusion for a number of the region’s countries.<sup>3</sup>

**FIGURE 0.8**  
**... Indeed, in Some Countries, Pension Reforms Already Undertaken Will Moderate the Impact of Aging**



Source: World Bank staff calculations.

Although the EU projections are based on the average policy reforms undertaken in the EU countries, the PROST projections for Albania, Georgia, Kazakhstan, Lithuania, Romania, Serbia, the Slovak Republic, and Turkey are based on specific policy reforms already made. In almost all cases, the full impact of the projected demographic changes is mitigated by pension policy changes (see figure 0.8). If one assumes no further policy changes, only in Lithuania and the Slovak Republic will projected pension expenditures rise above where they were in 2004, and even in these countries, the reforms already undertaken will mitigate some of the potential demographic impact.<sup>4</sup>

In Albania and Georgia, maximum pensions are linked to inflation, suggesting that, relative to average wage and GDP, pensions will shrink substantially between now and 2025. The same will be true in Serbia, but pensions there start at much higher levels and shrink more slowly. Kazakhstan and the Slovak Republic achieve their gains through a funded pension system that replaces the public system, completely in Kazakhstan and partially in the Slovak Republic.

*High Rates of Pension System Dependency*

The pressures on pension systems caused by aging are exacerbated by some unique features. One is the high rate of pension system dependency, calculated as the ratio of beneficiaries to contributors. On average, the region’s pension system dependency rates are more than

three times its population dependency rates. As the pension system dependency rate rises, pension expenditures rise relative to revenues, causing substantial fiscal problems. Even in Albania, Azerbaijan, and the Kyrgyz Republic, which are all younger than the new EU members, the pension system dependency rates are more than six times the population dependency rates. By contrast, the pension system dependency rate in OECD countries is, on average, less than twice the population dependency rate.<sup>5</sup>

Partly reflecting population aging, these high dependency rates also reflect the labor market transitions that are still under way. Although the vast majority of the elderly are collecting pensions, the majority of working-age people are not contributing to the pension system. This situation results from the high unemployment among some age groups and from the lower retirement ages and early retirement provisions still prevalent—but even more from the informalization of the labor market.

Dependency rates are also affected by the low retirement ages, which are lower in Eastern European and former Soviet countries than in their OECD counterparts outside the region. This is particularly the case for women (figure O.9). Although women traditionally have retired younger than men, given their longer life expectancy there is no logical reason for maintaining the differences other than precedent. Countries also allow many people to retire early, both generally and in specific occupations. Many had pronatalist policies that allow women with more children to retire substantially earlier (see box O.2). Also, most countries used the disability system to allow employers to shed surplus or unnecessary labor in the changing labor market. Many continue to do so.

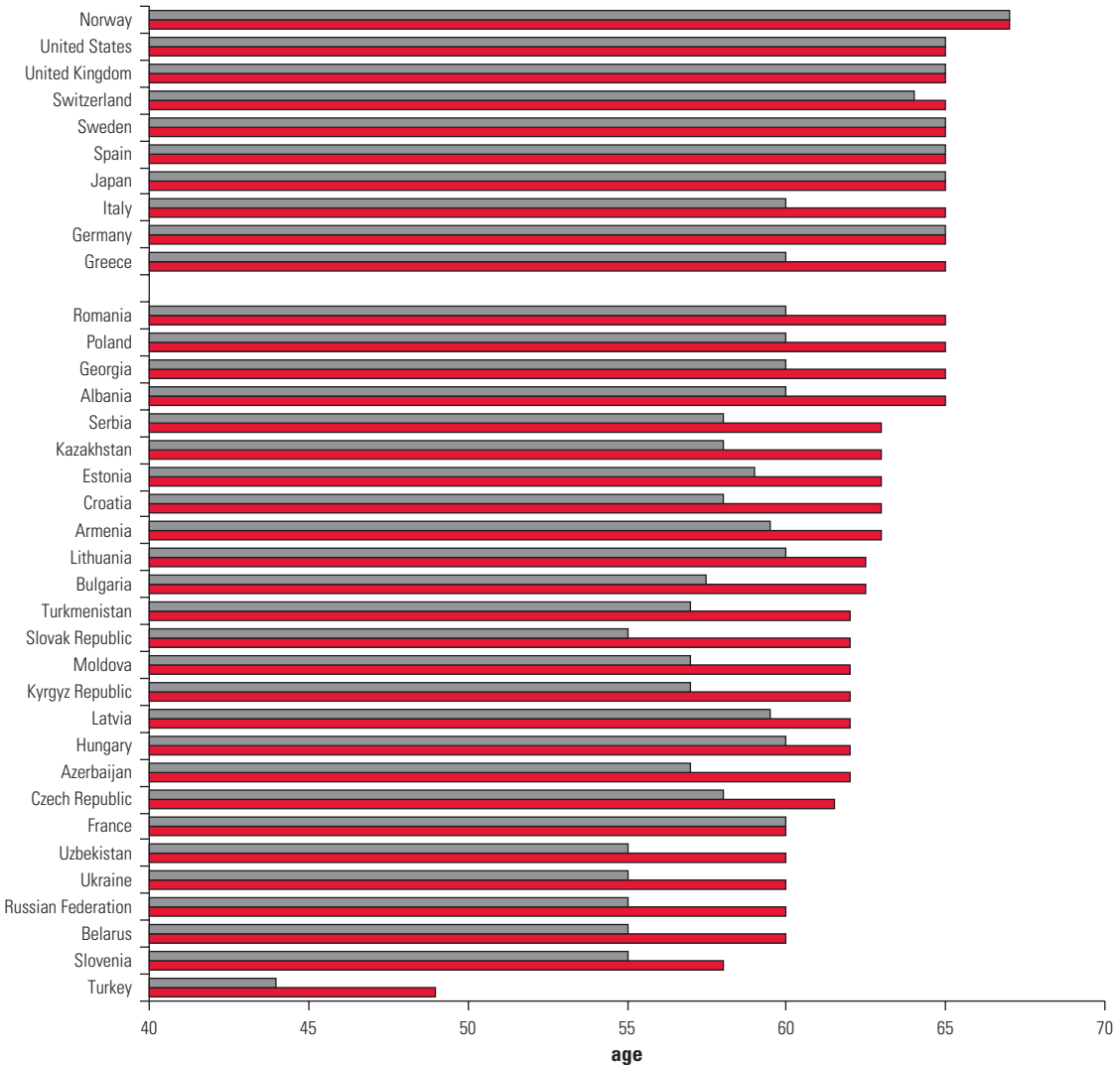
### *Indexing Pensions after Retirement*

The second feature is the indexation of pensions after retirement. OECD countries have typically moved to inflation adjustment of pensions after retirement to minimize fiscal costs and maintain the pension's purchasing power. But many countries in Eastern Europe and Central Asia still adjust pensions to some mix of inflation and wage growth. Moving to inflation indexation would bring them in line with international standards and provide savings to counter the impact of aging.

### *Effects of Raising Retirement Ages and Adjusting Pensions for Inflation*

The impact of raising the retirement age to 65 and adjusting pensions by inflation varies considerably, depending on initial policies.<sup>6</sup> In some countries, such as Lithuania and the Slovak Republic, both

**FIGURE 0.9**  
**Retirement Ages Are Lower in the Region Than in Higher-Income Countries**



Sources: World Bank, Social Protection Database; U.S. Social Security Department 2004.

inflation indexation and increases in retirement age would be effective. In others, such as Albania, Romania, Serbia, and Turkey, the only real impact is through a rise in the retirement age. In general, indexation changes have a bigger effect than retirement age changes in the medium run, because indexation affects the expenditures for all pensioners, whereas retirement age affects only the number of new pensioners added each year. But in countries such as Georgia, there is less scope for further parametric improvements, as it currently has inflation indexation and a retirement age of 65 for both men and women.

### *Prevention of Poverty and Smoothing of Consumption*

In addition to equalizing the retirement age for men and women, raising it to age 65, and indexing pensions after retirement to inflation, countries need to take a closer look at their current pension strategies to determine whether they still fulfill the original objectives of preventing poverty in old age and allowing consumption smoothing across a lifetime. Although not every country may need or be able to adopt every element in a generic pension strategy, the key elements include adjusting the parameters of the contributory PAYG pension systems to ensure fiscal sustainability (as already discussed), providing noncontributory social pensions, and providing the legal and institutional infrastructure for voluntary supplemental pension systems that are reasonably secure.

With aging populations, the benefits paid to a growing elderly population from the contributions of a shrinking labor force—as a PAYG system requires—will fall, no matter how well the system is designed, unless the government makes transfers from the general budget into the pension fund. At some point, contributions saved in financial instruments may provide better returns for workers and a better vehicle for consumption smoothing. A strong financial market infrastructure, including adequate supervision and regulation, would thus be needed for private pensions to replace all or part of the public pension system.

### *Option of Social Pensions in Poorly Performing Systems*

The number of pension contributors has fallen considerably in most of the region, and the recent upturns in some countries' economic growth has not reversed this trend. Today, most elderly people are collecting some form of pension, but in the future, many will not be eligible for benefits—and many countries do not have a poverty-targeted social assistance system to protect the elderly from destitution. This situation will pressure governments to consider some type of flat non-contributory social pension to the elderly in addition to the contributory pension benefits being paid now, a change that will have both fiscal and structural implications.

Indeed, the first objective of an old-age pension system is to prevent poverty among the elderly. But many of the region's elderly could face the inability of their pensions to pay for retirement. The potential insolvency of PAYG systems, which is a concern in some OECD countries, is exacerbated by two features particular to the transition from a socialist structure.

First, the region's pension systems are supporting more elderly, with fewer contributors financing these pensions—so government

transfers to the pension systems, from general government revenue rather than contributions, are necessarily becoming a major source of financing. Although the overall framework for paying in is the contributory PAYG system, there is a disconnect between individual contributions and the general government revenue paid by all.

Second, some countries require long durations of contributions for pension eligibility. Since coverage has fallen markedly, it is certain that in the future, when the contribution histories of the pretransition period are no longer relevant, large numbers of individuals will reach retirement age without being eligible for pensions.

In countries that lack alternative forms of social assistance, it will be politically and socially difficult to deny transfers to those individuals. For many, it could make sense to move away from the quasi-contributory systems of the present, with their higher administrative costs, toward noncontributory social pensions. Such pensions could be provided at an appropriately advanced age to all individuals, financed through government revenue (just as, today, government revenue is already financing a portion of the pensions).

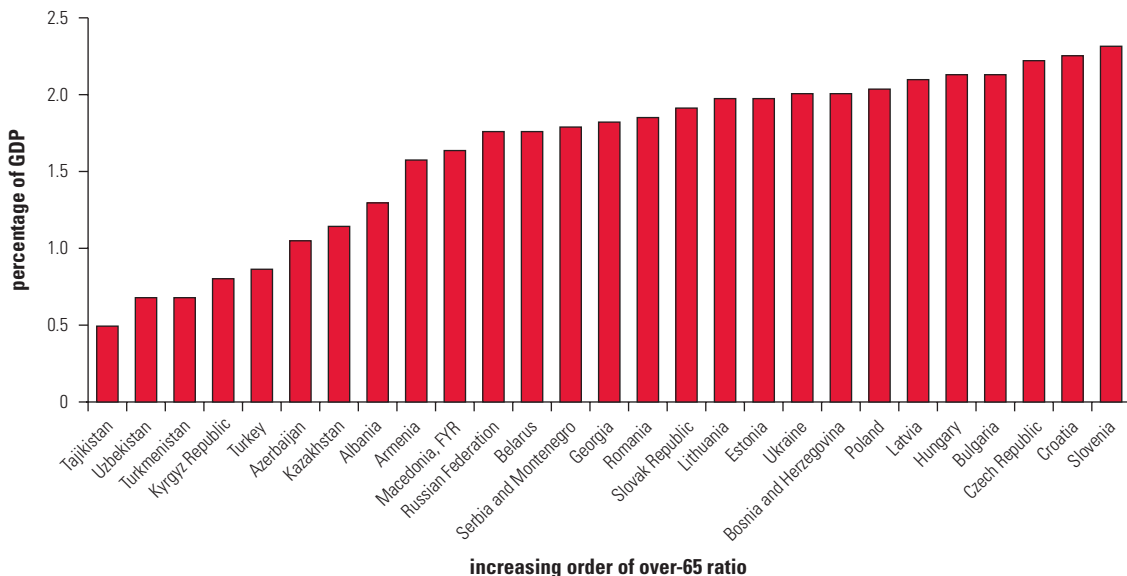
This option could be particularly relevant for many transition economies, because past contributions were made solely by public enterprises, unconstrained by the need to make profits or provide returns to shareholders. The contributions were somewhat arbitrary, coming from a nonmarket economy, so linking benefits to wages makes less sense than in an economy with market-based wages. Furthermore, wage records in many countries are either nonexistent or incomplete.

Social pensions also have an important political difference. They would no longer constitute acquired rights. This change would give the government more freedom to adjust the level of benefits and the age of provision—and the administrative costs of maintaining a collection and recordkeeping institution could be eliminated. The benefits could also be financed by the least costly, most efficient tax mechanism available.

These pensions would be most appropriate in the less reformed countries with low coverage, limited revenue collections, and weak links between contributions and benefits. But even in the more advanced transition economies, some social pension may be needed, given the decline in coverage. Most of these countries have such provisions in place, but the cost will rise as more people without contribution histories use them.

What would be the cost of a social pension? If all individuals in Eastern European and former Soviet countries age 65 and older

**FIGURE O.10**  
**Modest Social Pensions Would Generally be Affordable**



Source: World Bank staff calculations.

were given a pension equal to 10 percent of per capita GDP in 2005 and 2025, a social pension would clearly be affordable for most countries—particularly as a replacement for current pension expenditures (figure O.10).

Although it may be argued that 10 percent of per capita GDP is not a sufficient benefit level, experience in Asia shows that even small social pensions make a difference in the living standards of recipients. The costs of a social pension can be managed so that countries choosing to make it the only public pension expenditure could afford to be more generous. For countries where a public pension complements other pension expenditures, costs can be contained in three ways. First, the age at which the pension is received can be raised to limit the numbers who qualify. Second, the qualifying conditions can include explicit means and asset testing or proxy means testing to limit the number of participants. Third, the size of the pension can be adjusted to accommodate fiscal constraints.

Although the social pension has advantages, it needs to be instituted with an overall examination of the pension system (including when and how to introduce a system for voluntary savings for retirement). It also must be closely coordinated with the social assistance system—a challenge that many of the region’s countries, especially those that would benefit most from such a system, have yet to meet.

## **Affordable Health Care and Long-Term Care in Aging Societies**

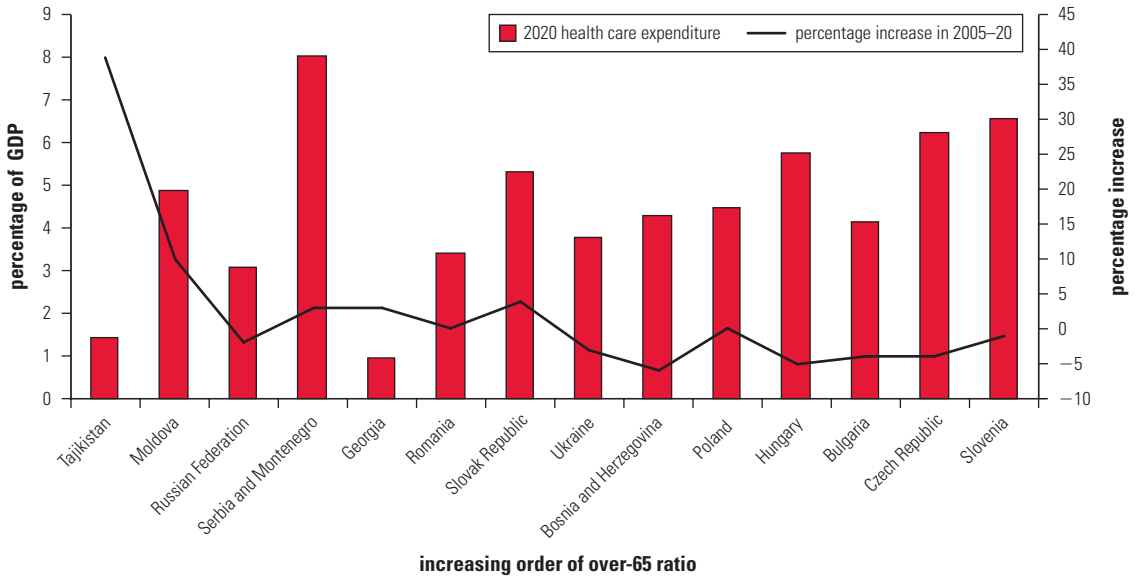
A rapidly aging population is expected to have significantly higher health care requirements, simply because the elderly have a high demand for ambulatory, inpatient, and chronic care in their later years. Another critical issue is long-term care for the very old (discussed in detail on page 32). Such care becomes costly as informal, family-based care declines, and it can have large opportunity costs if younger people must spend time caring for the elderly that they would otherwise spend in the labor force. There is thus real concern for rising medical and health costs as populations age, especially where health spending is already higher than available resources. The magnitude of cost increases will depend on whether longer life spans add healthy years or years of illness and dependency. Aging will also aggravate the magnitude of mental health problems, because of the increasing life expectancy of those with mental disorders and an ever-growing number of people reaching the age when the risk of such disorders is high.

This report finds that the use of health services will increase as populations age but that the increase in health spending will, in most countries, be largely due to factors unrelated to aging. Of particular concern is the conclusion that aging populations will indeed put substantial new pressures on long-term care for the elderly. This is a major cause for concern, because most Eastern European and former Soviet countries are unprepared to absorb the expenditure shock of long-term care—as distinct from clinical health care. Demand for effective long-term care is inevitable as people live longer and have less ability to carry out daily activities. Unless well-designed programs are in place to help these elderly receive care, the risk of adverse consequences is high. There could be a public expenditure shock from using expensive hospital services for care that could be provided more cheaply, or there could be an output shock from family members having to sacrifice too much work time to care for elderly relatives.

### *Effects of Aging on Public Health Spending*

Health spending patterns suggest that broader economic trends have more influence on health care expenditures than does the aging of the population; in fact, public health expenditures are largely explained by a nation's GDP per capita, changes in the level of service, technological innovation, quality of services, and productivity.<sup>7</sup> At current benefit levels, public spending on health will increase significantly by 2020 (compared with 2005) only in Tajikistan and Uzbekistan, both young countries. The increases will be more modest, on the order of 2 percent of GDP, in countries such as Belarus, Bulgaria, Estonia,

**FIGURE O.11**  
**Public Health Care Costs Are Likely to Rise Only Slightly in Most Aging Countries in the Region by 2020**



Source: World Bank staff calculations.

Note: This set of projections uses the constant morbidity scenario, which assumes that morbidity levels in additional years of life will be the same as at present and that all additional years of life are lived healthily. This assumption is modeled by shifting outward the age-related expenditure profile of the base year in direct proportion to the projected gains in life expectancy.

Poland, Romania, and Russia (figure O.11). Spending will actually fall in Armenia, Bosnia and Herzegovina, Croatia, and Turkmenistan.

This result is not surprising. Because health expenditure projections depend on assumptions about demographic factors (such as population size and age structure) and nondemographic factors (such as GDP growth rates), a rise or fall as a percentage of GDP is entirely possible even in young countries that are projected to have high rates of GDP growth (for example, in Albania, where it is projected to be 6 percent throughout the 2010-to-2050 period). Overall, the projection results—using a range of assumptions about how morbidity levels change as people age—support the view that increases in public spending on health care as a share of GDP will not be strongly influenced by demographic developments. Moreover, the projections indicate that the greatest aging-related factor for health expenditures will come from changes in the health status of the elderly, with a considerable slowdown in the increase of expenditures as health status improves.

In some former Soviet countries, however—especially Kazakhstan, Russia, and Ukraine—today’s young adults have very high mortality and morbidity rates. So there is a real concern that those in this group who survive the next two decades—and who will form the large

majority of the elderly in 2025—will be more vulnerable to illnesses at an old age. If the elderly cohorts in these countries indeed suffer increasing disability with age, the health systems will face inordinately high fiscal and capacity pressures—though not directly because of aging. The biggest and most immediate challenge for these countries is thus to improve the health of the adult population, targeting the causes of morbidity and mortality among those age 25 to 45. This approach implies that a significant proportion of public expenditures on health today needs to be directed toward prevention and promotion of lifestyle changes that ensure better health.

Health care costs are likely to rise—and rise rapidly—because of cost drivers unrelated to aging. Most of the region’s countries have not completed the reforms to address deep-rooted structural faults in the design of their healthcare systems. However, these faults, if allowed to persist, could drastically increase overall healthcare costs.

Countries need to shift from expensive inpatient care to less expensive outpatient care. A particularly thorny problem is the scope of services to be covered by the public system, laid down in the constitutions of most countries and generally interpreted to imply universal access to free health care services through compulsory health insurance. Given the rising costs of medical technology and pharmaceutical medications, these guarantees, if unchecked, can impose a significant fiscal burden on health systems. Most Eastern European and former Soviet countries have not completed reforms to address the deep-rooted structural faults in health systems, especially in managing health expenditures, and this, rather than aging, poses the greatest public expenditure risk.

### *Preparing for the Shock of Long-Term Care*

Aging populations will put new pressures on the provision and use of long-term care services. Long-term care incorporates a broad mix of medical, social, and residential (housing) dimensions. Three general types of service groups are home care, sheltered housing and old-age houses, and nursing homes. In addition, there is a wide variety of day programs outside the home but in support of home care—elder day care centers, respite care centers, and education and support for informal caregivers.

Most long-term care in the region is provided in hospitals or informally by families of dependents. The availability and use of institutional long-term care services are very limited in most countries. Where such services exist, the responsibility for delivering long-term care is vested in different agencies, including the local governments generally responsible for community care. The long-term mentally ill are typically cared for in regional psychiatric hospitals. Voluntary and

nongovernmental organizations are doing more as providers of nursing homes, hospices, and rehabilitation services and as providers of long-term residential care and care in the community. In some countries, such as Poland, voluntary organizations and domiciliary nursing agencies have begun to develop community services, such as home nursing and home help.

Even in Western Europe and Central Europe, the use of long-term services is not very high, ranging from about 12 percent in Northern Europe to about 3 percent in Italy and 1 percent in Greece. The corresponding figure in Poland is about 2 percent. In many countries, the largest proportion of the elderly receiving services use informal home care, as in Austria and Spain (about 80 percent) (OECD 2005). Nursing homes, residential homes, and community arrangements are very limited, even though some new EU member states have made good progress in recent years.

How many elderly will need long-term care? A conservative assumption is that only 5 percent of the elderly dependent population with disabilities will receive formal institutionalized care, and 5 percent will receive informal care (10 percent for new EU member states). In this scenario, expenditures on long-term care (under the increasing disability scenario) will double in almost all Eastern European and former Soviet countries, to account for between 0.5 percent and 1 percent of GDP. If, however, institutionalized care extends to 20 percent of the elderly with disabilities, expenditures on long-term care alone will consume between 2 percent and 4 percent of GDP. Because public expenditures on formal and informal long-term care depend on eligibility and benefits and on the way care is provided, countries in the region must make very deliberate and careful policy choices on entitlement, provision, and financing.

How, then, should policy makers respond? Many policy implications of the analysis here apply across the region, irrespective of health system organization. First, promoting healthier elderly populations will perhaps be the most effective way to ensure better health and lower expenditures. This is also the longest-term strategy—adopting preventive medical and social approaches at earlier ages to forestall the needs of the elderly for clinical or long-term care. These measures include changes in lifestyle, especially promotion of regular exercise and control of diet and weight.

Second, making sensible policy decisions on financing and delivering long-term care is fundamental to containing expenditures. The key to containing expenditures is to design delivery arrangements and to configure services and their accessibility for elderly clients in ways that are substantially less expensive for public sector budgets. Examples are the neighborhood and community-based arrangements

that are called “care-friendly districts” in the Netherlands and “open care centers” in Greece. These arrangements introduce a category of care—part medical and part social, between home care and primary care—that meets elderly needs and is more readily accessible than normal primary care services.

Third, informal caregivers, who are the core of a cost-efficient long-term care system, need to be recognized and supported. This proposal reflects two major policy concerns. The first is that the predominant source of supply for informal caregivers—women who do not hold full-time regular employment—either has shrunk or is projected to shrink. The second is the capacity and willingness of informal caregivers to continue providing care. There is a real danger of unpaid informal caregivers becoming overloaded and feeling compelled to move their elderly family members to an institution.

Fourth, as a means of maintaining an adequate supply of caregivers, cash and service benefits could be incorporated in the care of elderly clients, making it possible to provide some financial return to informal caregivers. In countries with social health insurance (Austria and Germany) and in several Nordic tax-based systems, informal caregivers receive pension credits. In the Netherlands, since 2003, both paid care and informal care can be combined for certain patients through an individual budget, which allows informal caregivers to obtain professional assistance with more difficult tasks.

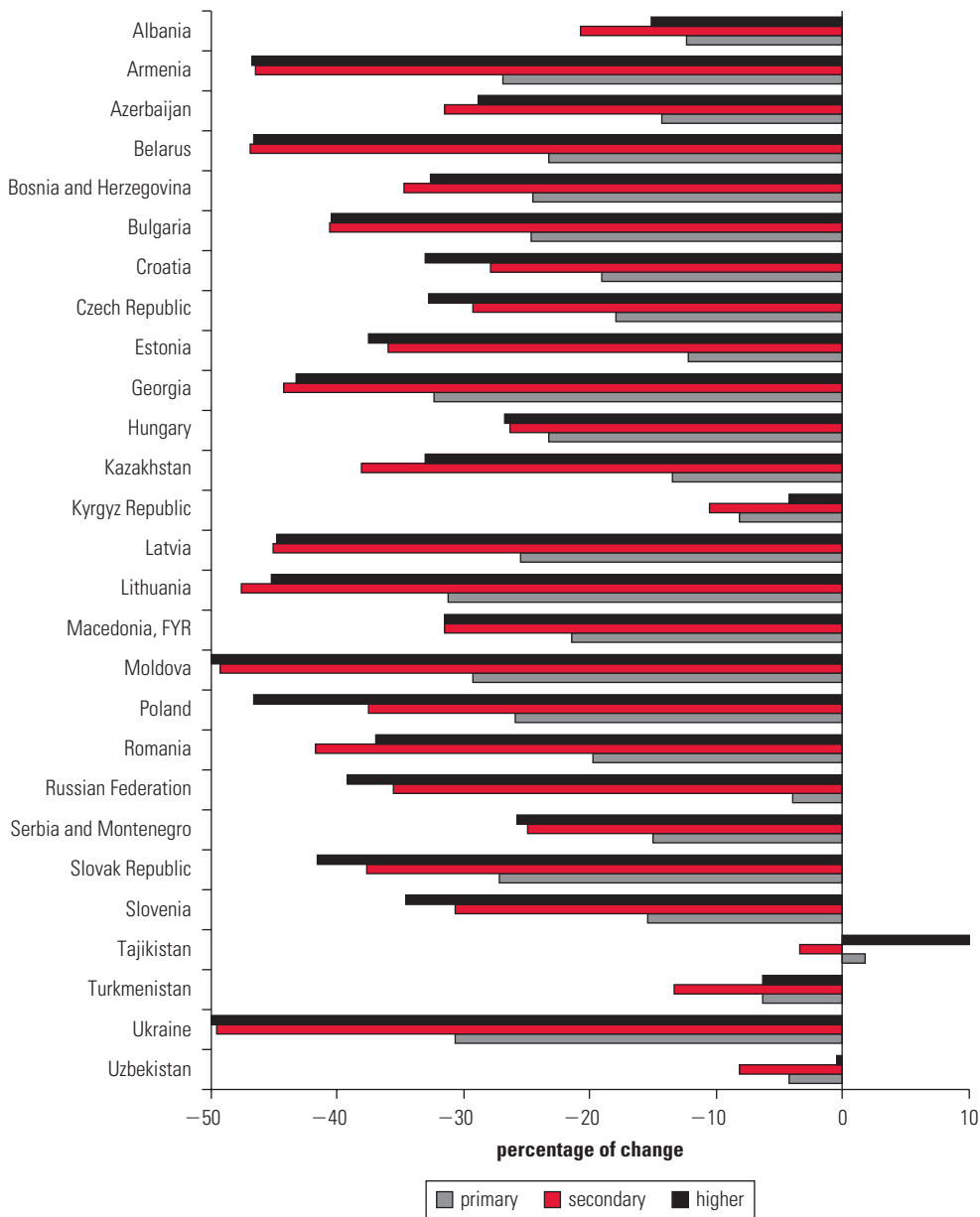
Countries in the region must formulate long-term care strategies to rely primarily on home care and informal caregivers rather than institutionalized provision. This is mostly driven by the needs that will emerge as the aging population increases its disabilities, but it will also be partially spurred by peer pressure from the older EU member states to provide for the long-term needs of the elderly.

### **Shifting Education Expenditures and Providing for Lifelong Learning**

Potential exists for public expenditures on education to fall in aging countries because of rapidly shrinking school-age populations. This report, however, shows that the expected decline in expenditures could be counteracted by two factors that policy makers will need to address to capture the potential fiscal benefits of aging. First is the need to restore and improve enrollment rates, which have dropped significantly in much of the region. Second is the imperative to invest in lifelong learning practices to better meet the needs of dynamic and flexible economies in the years ahead.

If current trends continue, all the region’s transition countries except Tajikistan will have smaller school-age cohorts by 2025

**FIGURE 0.12**  
**School-Age Populations Will Shrink in All Countries Except Tajikistan . . .**



Sources: World Bank staff calculations, based on data from UNICEF Innocenti Center, TRANSMONEE Database. Population data from United Nations 2005.

(figure O.12). In most countries, the decline will be considerably larger than the substantial decline in the 0- to 17-year-old population that occurred between 1998 and 2004. School-age cohorts are expected to fall in the range of 30 to 50 percent for all levels of education for most of the aging countries. Even countries with young populations are expected to have much smaller school-age cohorts.

These population dynamics will generally imply downsizing staff and facilities in many primary and secondary schools, with associated savings in public expenditures. A closer look, though, reveals that the savings may not be as large or universal as anticipated, because current coverage in education leaves significant room for improvement. For example, the large declines in primary school coverage in Armenia, Bosnia and Herzegovina, and Turkmenistan during the transition have pulled gross enrollment rates in primary education well below 90 percent. Russia had a smaller decline, but its starting point was also low, again leaving coverage below 90 percent.

The larger declines in secondary coverage leave rates below 50 percent in Armenia, Azerbaijan, Bosnia and Herzegovina, Georgia, the Kyrgyz Republic, Moldova, Tajikistan, and Turkmenistan. Secondary coverage is below 80 percent in all countries except Bulgaria, Croatia, the Czech Republic, Hungary, Poland, and Slovenia. Despite large increases in higher education coverage in all transition countries except Turkmenistan and Uzbekistan, coverage remains low, particularly in the poorest transition countries (which also have the youngest populations).

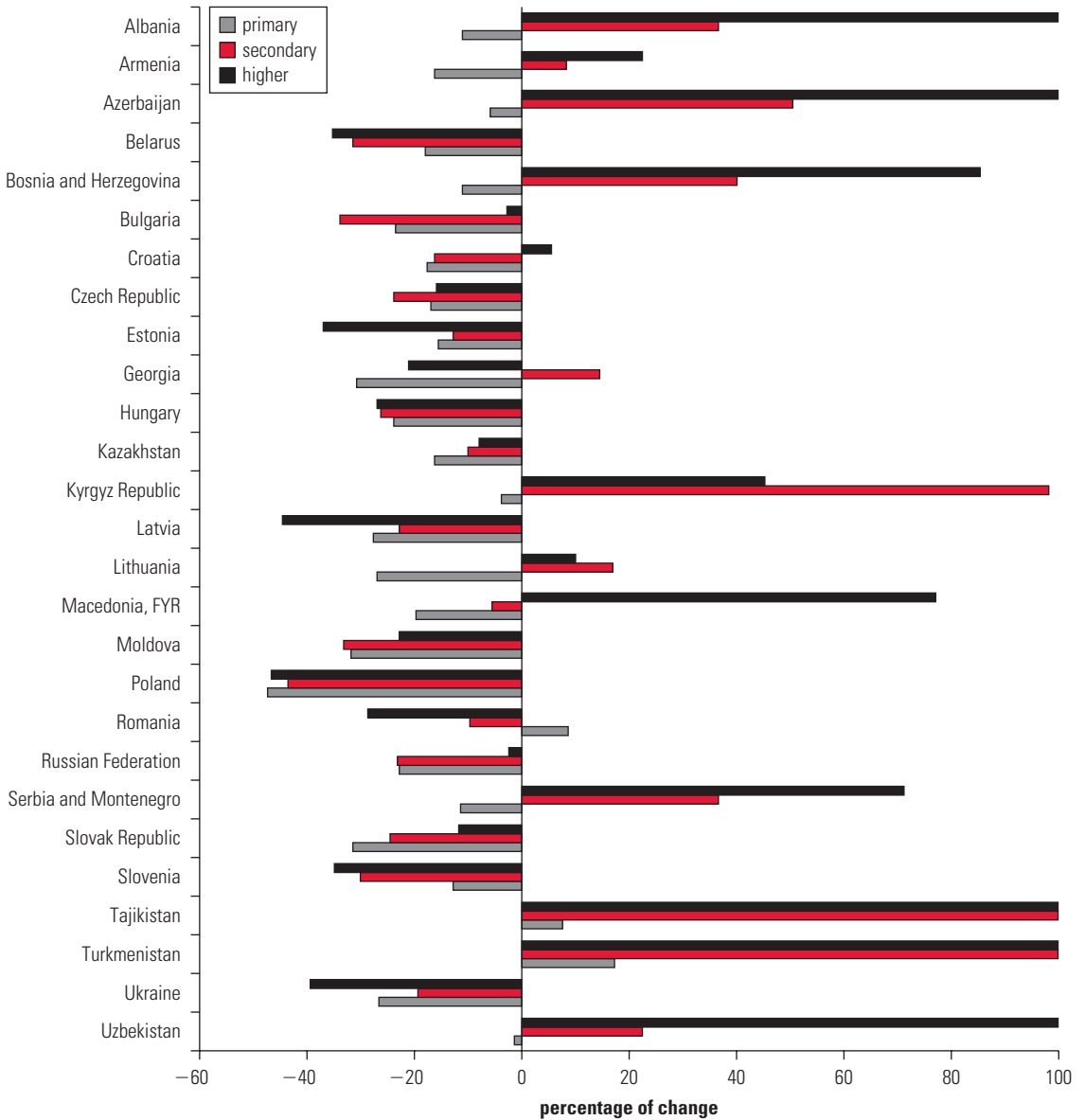
If enrollment converges to full coverage in primary and secondary education by 2025 and to the current OECD mean for higher education (55 percent),<sup>8</sup> the picture changes (figure O.13). So, although school-age cohorts in most transition countries are shrinking, improving coverage will lead to very fast growth in secondary and higher education enrollments in the countries with young populations, as well as in Bosnia and Herzegovina, Montenegro, Serbia, and (for higher education) FYR Macedonia. Georgia and Lithuania are projected to have modest growth in secondary enrollments. All other countries are expected to have shrinking enrollments, even in higher education, where shrinking cohorts probably will more than offset improved coverage.

One implication of these changes is the need to increase the capacity of education programs—especially the capacity of infrastructure and staff—to respond to the sizable changes in enrollments over the next two decades. For most countries, this means progressively shedding teachers and consolidating school infrastructure, but for others, it means being flexible: expanding and contracting programs to respond to oscillations in enrollments at particular levels.

A second implication is the need to reform education finance and management to provide the means and the incentives to carry out changes in education staffing and infrastructure. The continuing use of input-based financing formulas for primary and secondary education is the main reason that the contraction of school-age cohorts has

**FIGURE 0.13**

**... But Improved Coverage Will Lead to Fast Growth in Secondary and Higher Enrollments in Many Countries**



Sources: World Bank staff calculations, based on data from UNICEF Innocenti Center, TRANSMONEE Database. Population data from United Nations 2005.

not been accompanied by a proportional decline in teachers and facilities. A preferable method for financing education is based on capitation. The amount of a local government’s education subsidy is based on the number of students it educates—differentiated to reflect the costs of different programs of education and possibly other sources of cost variation. This approach, used in the Czech

Republic and Lithuania, is preferable for two reasons. First, the basis of financing—enrolled students—is much closer to the educational objective than are school inputs such as numbers of classrooms and teachers. Second, there is an incentive for providers to rearrange inputs to provide education more efficiently.

The third implication of the enrollment projections (and the analysis of enrollment constraints over the past 15 years) is that effective strategies to achieve full coverage of primary and secondary education will need to address the constraints that are responsible for incomplete enrollment coverage. Improved quality and relevance of education programs should help inspire higher attendance. However, raising enrollment rates among the groups at greatest risk is likely to require additional efforts—including both targeted initiatives, such as counseling and tutoring for students with learning difficulties, and economic initiatives, such as subsidies aimed at poor students to defray the cost of transportation, textbooks, and supplies.

As discussed earlier, a key to addressing the possible growth constraints caused by aging is higher productivity. Human capital growth and technology change are the main sources of higher productivity, and education—broadly construed to include vocational training and lifelong learning—is key to both. A lesson is that educational attainment must increase to the levels of the high-performing countries and that education must be matched to skill needs in the labor market. This message is particularly relevant for the transition countries for two reasons. First, the transition led to a serious disconnect between the skills provided by education systems and the skills needed by the market economy. Second, education systems have only begun to respond to the new skill needs.

For education content and structure, the challenge is more complex. Results of the Programme for International Student Assessment (PISA) test—which assesses mastery of such higher-order skills as synthesizing knowledge across disciplinary boundaries, integrating uncertainty into analysis, and monitoring one's own learning progress—suggest that the transition countries generally perform poorly compared with OECD countries. Because these skills are precisely the ones needed for most of the fastest-growing jobs in the global economy, the PISA results indicate how well education systems are doing in teaching skills that are relevant in the global economy. These findings from the PISA assessment show that Eastern European and former Soviet countries have a long way to go before they teach the skills most needed for improved economic performance.

Raising learning achievement (as measured by the PISA approach) to the average in the OECD countries would require a deliberate and

sustained effort. Matching the performance of the high-growth Asian countries would require a far greater effort. Moreover, these findings relate to the performance of students at the compulsory education level, where the transition countries have essentially the same coverage as the OECD countries. The needs for secondary and higher education are likely to be even greater, because coverage is much lower than in the OECD countries and because quality and relevance are likely to be lower as well.

Lifelong learning is almost nonexistent in the region, despite the considerable progress in market reforms. In principle, enterprise privatization and other economic liberalization policies strengthen the incentives for employers to provide training for their employees, whereas productivity-related earnings dispersions strengthen incentives for individuals to seek training. However, legal proscriptions and onerous certification requirements—as well as the absence of positive inducements such as tax benefits for employer-provided training—inhibit the development of lifelong learning programs by private providers. EU member states and other OECD countries have developed more effective strategies for encouraging lifelong learning, and these need to be carefully considered by the region's countries.

### **Completing and Building on the Transitions: The Different Paths Ahead**

The aging countries of Eastern Europe and the former Soviet Union have very different needs for reform on the issues described in this report—labor and capital markets, health and education, and pensions. These differences are partly a function of their particular aging profile and their economic transition, and they very much depend on the reform paths and timing that they choose in the decades ahead. In all the countries, however, the primary message of this report holds: the reforms they need to undertake are reasonably well understood (although less for long-term care and social pensions). The challenge is to be proactive in undertaking the particular reforms that are essential for meeting the shocks caused by aging populations.

Across the region, the urgency and degree of reforms needed broadly correspond to the country groups outlined in figure O.1. The *young, late reformers* of Central Asia have the easiest paths in dealing with aging: although they will need to face adjustments in education and, to some extent, in pensions because of population aging, their large pool of young residents will ease the pressure. Their major task

is to complete the economic transition and further develop their institutions. (Their case is not discussed in detail here.) The *aging, early reformers* of the European Union and Albania and Croatia will, for many of the issues, find that their reforms and better-developed institutional capacity will help them deal proactively with the pressures of aging populations. But much will still depend on whether they have the political will to undertake difficult reforms in pensions and long-term care. The greatest test is for the *aging, late reformers* of the former Soviet Union and the western Balkans. They face the twin problems of significantly aging populations and relatively underdeveloped institutions, with action needed on both.

The reform agenda to deal with aging necessarily covers a number of sectors of the economy. The report puts forward policy priorities for financial markets, labor markets, education, pensions, and health. However, while sector-specific reforms are needed to address the challenges posed by demography, their effects will cut across sectors because of the strong links between these aging-related challenges. The reinforcing nature of the needed reforms in different sectors—and their country-specific variations—can be illustrated by looking at how the region will address one of the key challenges of population aging—addressing the decreasing working-age population. If this challenge is not handled effectively, economic growth will be constrained, and adequate resources will not be available to finance pensions, health, and education systems.

Countries that are projected to experience declines in the working-age population can compensate for this situation by implementing reforms that support two crucial objectives—increasing the quantity of labor supply and enhancing productivity. Although these are the universal objectives, the specific formula will differ for the *aging, early reformers* and *aging, late reformers*. And in some areas, such as health, reforms could improve both labor supply and productivity.

### **Increasing the Quantity of Labor Supply**

Increasing the quantity of labor supply in the context of shrinking working-age populations will require reforms in pension parameters, labor regulations, health and disability, and possibly migration:

- **Increasing the retirement age.** The *aging, early reformers of Central Europe*, with the notable exception of Slovenia, have mostly increased their retirement ages to close to OECD levels (above 60 years, at least for men). However, there is clear scope for increasing the retirement ages of women, which would give them more of an incentive to participate in the market. The *aging, late*

*reformers*, most notably Belarus, Russia, and Ukraine, have more room to increase their retirement ages.

- **Improving the ability to do more flexible, part-time work.** The *aging, early reformers* have generally reduced restrictions on temporary employment. But there are exceptions, such as Croatia, Latvia, and Romania. Restrictions on flexible work arrangements do not allow easy participation in formal sector activity (World Bank 2005a). This particularly affects workers who are interested in participating in the labor force on a flexible basis—most notably, older workers as well as groups such as youth and women. Among the *aging, late reformers*, there is also wide variation, with Russia and Serbia having more liberal temporary employment policies and Azerbaijan, Bosnia and Herzegovina, and Ukraine having more restrictive policies.
- **Improving the health status of older workers.** In the *aging, early reformers*, improving (albeit expensive) health care and improving lifestyles have meant that today's younger people are likely to suffer fewer health issues as they age. In the *aging, late reformers* of the former Soviet Union, however, the high mortality and morbidity among young adults means that the relatively healthier surviving cohorts who will constitute the large majority of the elderly in 2025 will be more vulnerable to illnesses in old age. For these countries, improving health outcomes and the performance of the health system will increase labor supply as well as the productivity of workers.
- **Attracting workers from other countries.** Attracting immigrants to fill the jobs needed for growth as the country's labor force shifts is a deeply political issue (World Bank 2006). For the *aging, early reformers*, legal immigration is going to be difficult, partly because their neighboring countries in Southeastern Europe and the Commonwealth of Independent States are also aging—and partly because, at least in the next few years, they will lose migrants to the older EU states. But for the *aging, late reformers*, if economic growth accelerates and political barriers to immigration decrease, managed immigration is possible from the younger countries of Central Asia.

## Increasing Productivity

Increasing productivity to compensate for shrinking working-age populations will require reforms in health and disability (already

discussed), and education and lifelong learning, as well as continued progress on the economic restructuring agenda:

- **Investing in education and lifelong learning.** The ability to learn and retrain in new skills as the economy evolves is likely to become more important as the world becomes more economically complex and dynamic in the decades ahead. High-quality basic education is the foundation for workers to build this new learning. Here countries across the region have a challenge—education quality is not high. As measured by the OECD’s PISA assessment, only some of the *aging, early reformers*—the Czech Republic, Hungary, Latvia, and the Slovak Republic—have somewhat decent rankings, whereas the *aging, late reformers* (Russia and Serbia have participated) do less well. And lifelong learning is almost nonexistent, despite considerable progress in market reforms. In principle, enterprise privatization and other economic liberalization policies strengthen the incentives for employers to train their employees, while growing productivity-related earnings dispersions strengthen the incentive for individuals to seek training. But legal proscriptions and onerous certification requirements, as well as the absence of positive inducements such as tax benefits for employer-provided training, inhibit the development of lifelong learning programs by private providers.
- **Completing the restructuring agenda.** Here, too, actions will be needed across different spheres, and the degree of economic reforms captured in the country typology plays a strong role. *Aging, early reformers* such as Estonia, Hungary, Poland, and the Slovak Republic, which have taken measures in enterprise restructuring, will find it easier to move to “strategic restructuring” of their firms and to foster innovation, helped by trade integration with the European Union and associated flows of foreign direct investment and technology. But Romania, where restructuring is less advanced, will find it more difficult to take full advantage of trade and capital integration with the European Union. Among the *aging, late reformers*, the biggest productivity challenges will be for Bosnia and Herzegovina, Georgia, Montenegro, and Ukraine, which will face significant aging but have yet to significantly restructure their enterprises to provide incentives for productivity-improving measures.

This consideration of the factors that may compensate for any negative consequences of a shrinking working-age population highlights the interlinkages of different aspects of the reform agenda, as well as

how reform priorities differ depending on the country's current situation. Again, more details on how policy needs to respond to the other challenges associated with the third transition are detailed in subsequent chapters.

\* \* \*

This report is not alarmist about the consequences of aging in the region, but this absence of alarm is founded on a call for policy makers to shed their complacency and to act—now. Consider personal decisions about aging. Each of us knows that old age is likely to bring feebler bodies, lower incomes, and higher medical costs, but only some of us take this realization to its natural end—that, to ease aging's travails, we need to exercise our bodies and minds, save for retirement, and insure against catastrophic risk. Those who do these things have a good chance of enjoying a happy and productive old age.

The same holds for the region. The future is uncertain, but most of the policies that need to be put in place today to ensure that the worst does not happen are certain. All the countries have embarked on a long and arduous transition. This report urges countries most affected by aging to set priorities for the most important reforms—and to do so today.

## Notes

1. The early-stage emigration from the Baltic states has been mainly ethnic based. The large-scale emigration in Southeastern Europe (Albania and Bulgaria) was initially ethnic based and later market driven. Turkey has experienced a high inflow of Muslim migrants and market-driven temporary immigration from Bulgaria, Romania, and Ukraine, as well as a return of earlier migrants from Western Europe.
2. The experience of Japan, the United States, and the countries of Western Europe also suggests that, though aging will indeed affect aggregate savings and the age-specific propensity to save, its effect on the demand for and supply of financial investment instruments is not likely to be significant. Other processes—business cycles, regulatory changes, trade imbalances—appear to dominate aging in their influence on the aggregate and class-specific demand for assets.
3. PROST (the Pension Reform Options Simulation Toolkit) is a World Bank-produced pension model in use in more than 80 client countries.
4. This finding does not suggest, however, that all the policy changes undertaken are positive.
5. There is always a gap between population and pension system dependency rates, because the working-age population is calculated as the

population from age 15 to age 64. Typically, in high-income OECD countries, 15 year olds are neither working nor contributing to the pension system. The pension system dependency rates rise even more because of the lower labor force participation of women, even in prime working ages, in some countries. These women, who did not participate in the workforce, will nevertheless be eligible to collect widows' pensions when they become widows, hence raising the number of beneficiaries in the beneficiary age group relative to the number of contributors in the contributor age group.

6. The PROST sample is not a fair sample of the Eastern European and former Soviet countries region in that it consists largely of countries that the World Bank engages in pension dialogue with and that have already undertaken reforms. The results are also not comparable or readily adaptable from one country to another because the initial conditions differ—but the macroeconomic growth assumed in each case also differs, because it is appropriate to each country.
7. Castles (2000) reports that OECD population and expenditure data for 1965 to 1995 rarely demonstrate any statistically significant relationship between aging and aggregate health care expenditure. On the basis of his analysis of this OECD datafile, Castles concludes that there is an almost complete lack of correspondence between cross-national variance in population aging and levels of and changes in health care costs.
8. In the few countries where gross enrollment ratios in higher education are already at or above the OECD mean, we assume a continuation of current gross enrollment ratios.