Gender Issues in Human Capital

Introduction

A nation’s stock of human capital influences economic growth, productivity, and, ultimately, poverty reduction. Investing in the building blocks of human capital—education and health—has both direct and indirect effects on economic growth, but also on poverty reduction. The socialist legacy of investment in education and health for both men and women in Europe and Central Asia has provided an important foundation for the majority of the countries as they have embarked on a significant transformation and liberalization of their economies and on global integration. This stock of human capital is all the more valuable now because of the demographic transition occurring in the region and the decline in population in 21 of the 30 countries. The shrinking population underscores the importance of using available human resources more effectively in terms of the share of the population that is economically active, as well as the productivity of the population.

Recent analytical work has laid the foundation of knowledge on the broad education and demographic issues facing the region. The report “From Red to Gray: The Third Transition of Aging Populations in Eastern Europe and the Former Soviet Union” (Chawla, Betcherman, and Banerji 2007) analyzes the implications of the aging populations and relatively weak institutions in low- and middle-income countries. The study “Skills, Not Just Diplomas: Managing for Results in Education Systems in Eastern Europe and Central Asia” (Sondergaard and Murthi 2012) discusses the lagging performance of the education sector, primarily in terms of the quality and flexibility of curricula to facilitate lifelong learning, an important characteristic of education systems in rapidly changing economic environments. The analysis in this chapter adds a gender
emphasis to some of the conclusions reached in these reports.

The chapter contains three main messages, as follows:

◆ The countries of Europe and Central Asia have achieved gender parity in primary education and, to a lesser degree, in secondary education. However, there are gender gaps in tertiary education that are large and show the potential to widen.

◆ The demographic transitions in the region are dramatic. The aging of the population will lead to large numbers of elderly women. In countries with growing populations, there will be proportionately more women of working age, which should provide an opportunity to these countries to expand the pool of educated labor.

◆ Several health indicators in the countries of the region are better than the corresponding indicators in many developing countries at similar levels of income, especially the indicator on maternal mortality. Yet, other indicators show a lag, such as male life expectancy, which is exceptionally low in selected countries considering the income levels. Moreover, a gender imbalance has begun to emerge in some countries among young children, and this is cause for concern.

The rest of the chapter is structured as follows. The next section provides an overview of primary, secondary, and tertiary outcomes in education. The third section discusses demographic transitions. The fourth section reviews key health indicators, such as life expectancy, mortality rates, fertility, and missing women. The health and education indicators cover the current situation, but also trends over time so as to capture changes in the gender gap. Where possible, a comparison is made between Europe and Central Asia and other regions of the world, including the high-income countries of the Organisation for Economic Co-operation and Development (OECD). The final section offers an analysis of the implications for a policy response.

Gender Differences in Education

Education plays an important role in raising the quality of human capital and helping people become more productive in their personal and professional lives. The countries of Europe and Central Asia invest heavily in the education of their citizens at all levels of schooling. The governments and the citizenry in these countries have an established tradition of educating both girls and boys. In the past, this set the region apart from the rest of the world through narrow gender gaps in literacy rates, but the situation is now changing, and the gender gaps in education are narrowing in all regions.

This section provides a description of the successes and challenges in gender equality in the educational systems in the region. There have been significant and broadly based successes, but subtle challenges are also emerging. In the discussion, we review the status of male and female outcomes at the primary, secondary, and tertiary levels. In addition, several of the countries in the region participate in an international assessment of students that allows us to examine the presence of a gender gap in capabilities. Finally, we focus especially on developments in tertiary education, including entrenched and emerging trends.

Primary Education

The region continues to perform well in providing primary education to both girls and boys. Though there are concerns about selected countries (for example, Azerbaijan and the Kyrgyz Republic) in which almost a fifth of the relevant population is not enrolled in primary school and other countries in which completion rates are not universal (for example, Albania), these problems do not appear to reflect a gender bias. Despite the importance placed on education in the region and the significant economic growth experienced for much of the last

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4 Literacy rates among men and women in Europe and Central Asia are 97 and 99 percent, respectively, compared with the corresponding world averages of 79 and 83 percent.
In countries where many children enter school late or repeat grades, gross enrollment rates are high (and can exceed 100 percent). In Europe and Central Asia, net enrollment rates are high, but gross enrollment rates do not indicate whether most children in school are at the age-relevant grade levels. Net enrollment rates are reported less often.

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where the gender gap of 3 percentage points is caused by lower male enrollment rates.

The average gender gap in primary completion rates in the region is small, though, in a handful of countries, there does appear to be some disparity between boys and girls. The average primary completion rates for girls and boys were 95 and 96 percent, respectively, in the region in 2009. This gap is comparable with the gap in Latin America and the Caribbean. Though the average difference between the completion rates among girls and boys is small, Georgia and Latvia stand out in terms of the gender gap, which is about 6 percentage points. In Lithuania, Tajikistan, and Turkey, boys lead girls by about 4 percentage points in primary school completion rates, while, in Armenia, the opposite is true (figure 1.2). Though the gap in any year is small, this inequity will lead to illiteracy among a limited, but significant share of the adult female population.

The region shows little variation in school enrollment rates among young children across income groups. The difference in enrollment rates between the bottom and top deciles among boys and girls (ages 7–12 years) is small, at 1 and 2 percentage points, respectively, for the region as a whole (figure 1.1). This equitable trend across genders and income groups occurs in most countries; the exceptions are Albania, Bulgaria, and FYR Macedonia. For example, Bulgaria exhibits both income disparities and gender disparities. Almost 20 percent more 7- to 14-year-old girls in the highest income quintile attend school relative to the lowest quintile. Albania exhibits the opposite trend, with 13 percent more girls in the lowest quintile attending school relative to the top quintile. To understand the causes of these variations, one must see whether these children who were out of school were economically active, and one must also examine the attitudes of the parents of these children toward schooling.

Young boys are more likely than young girls to be economically active. The data on child employment are limited, and only a few countries report these statistics. The largest gender gaps are found in Albania and FYR Macedonia (figure 1.2). The countries in the region with the highest proportion of economically active chil-

6 However, this should be seen against the backdrop of strong improvements over the last decade among both boys and girls: the rates have grown by 16 and 12 percentage points in Georgia, respectively.
Children (ages 7–14 years) are Georgia and Ukraine, where 32 and 17 percent of children are working, respectively. Over 90 percent of children who are economically active are also studying, except in Turkey, where only 60 percent of these children also attend school. In most countries for which data are available, boys are more likely to work than girls; the exception is Tajikistan. Yet, this may be an incomplete picture since girls may be engaged in household chores and other unpaid family work elsewhere as well.

Secondary Education
Secondary education enhances a population’s social and economic opportunities. It provides students with marketable skills and increases their productivity in the workplace. Economies that are more sophisticated in terms of the production or the complexity of institutions require higher levels of human capital input. Secondary education also prepares students to continue on to college and university. Thus, a gender gap at the secondary school level has large implications for the long-term career opportunities of students and, consequently, for the income and household welfare of these young people.

Girls are falling behind in secondary enrollment in Europe and Central Asia relative to the high-income OECD countries. The decades of the 1990s and 2000s saw an increase in secondary enrollment rates among girls, though this was outpaced by the growth in enrollment rates among boys. The gender gap was relatively small as measured by the ratio between the respective gross secondary enrollment rates among girls and boys, which was 0.96, meaning that, for every 100 boys in school, there were 96 girls. This compares unfavorably with the high-income OECD countries, in which gross enrollment rates are 101 and 102 for girls and boys, respectively (figure 1.3). Though the gender gap in the region is not large and the changes over a decade appear small, they have accumulated over time rather than reversed. A broader concern is the fact that school enrollments

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**FIGURE 1.3** Secondary School Enrollment and Academic Performance, 2009

<table>
<thead>
<tr>
<th>Country</th>
<th>Reading</th>
<th>Math</th>
<th>Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECA</td>
<td>320</td>
<td>330</td>
<td>340</td>
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<tr>
<td>OECD</td>
<td>320</td>
<td>330</td>
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<tr>
<td>EAP</td>
<td>320</td>
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<tr>
<td>LAC</td>
<td>320</td>
<td>330</td>
<td>340</td>
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<tr>
<td>WLD</td>
<td>320</td>
<td>330</td>
<td>340</td>
</tr>
</tbody>
</table>


Note: EAP = East Asia and the Pacific. ECA = Europe and Central Asia. LAC = Latin America and the Caribbean. OECD = high-income OECD countries. WLD = World. For a description of PISA, see the text. Panel b: PISA scores are for the EU10 (the 10 European Union countries of Central and Eastern Europe, that is, Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic, and Slovenia), Albania, Azerbaijan, Croatia, Kazakhstan, the Kyrgyz Republic, Montenegro, Russia, Serbia, and Turkey.

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7 This assertion is based on 2005 data, which are the latest available data.
8 In recent years, this gap has likely widened because of migration and poverty in rural areas.
in general are not rising to converge with the high-income OECD countries among boys or girls.

Secondary enrollment rates among girls and boys are high in the countries of the region relative to other low- and middle-income countries, and the gender gap in secondary schools is relatively small, which is similar to other regions of the world. The gross secondary enrollment rates in the region are 87 and 91 percent for girls and boys, respectively. Though these rates are below the gross enrollment rates among girls in Latin America and the Caribbean, this is somewhat misleading. When we compare net secondary school enrollment rates in Europe and Central Asia and in Latin America and the Caribbean, we find that not only does Europe and Central Asia perform comparatively better, but that the gender gap narrows additionally.9 The net enrollment rates among girls and boys in Europe and Central Asia are 80 and 82, respectively, compared with 76 and 71 percent, respectively, in Latin America and the Caribbean.

The low-income countries in Central Asia show higher secondary enrollment rates among girls relative to other low-income countries. In the Kyrgyz Republic and Tajikistan, enrollment rates among girls were 85 and 78 percent, respectively, in 2009. These are significantly higher than the average female secondary gross enrollment rate in low-income countries, which was 34 percent in 2009. Furthermore, the average ratio of male to female enrollment rates in low-income countries was 1.36, whereas, for the Kyrgyz Republic and Tajikistan, the ratios were 0.99 and 1.15, respectively, indicating a greater degree of gender equality in these countries.

Tajikistan and Turkey are the two outliers in terms of the gender gap in secondary enrollment rates. In almost all the countries in the region, there is a strong correlation between male and female secondary school enrollment rates, with the exception of Tajikistan and Turkey. The gender gap in both of these countries is between 7 and 10 percentage points in favor of boys. In Tajikistan, net secondary school enrollment rates among girls and boys are 77 and 88 percent, respectively, while, in Turkey, the respective rates are 70 and 77 percent. In Tajikistan, the lower enrollment rates among girls may be caused by the lack of an adult male presence (arising from out-migration), large families, and above average adolescent fertility rates; however, more research needs to be conducted to determine the main correlates.

Among 15- to 17-year-olds, though poor children have lower enrollment rates than richer children, the average gender gap by income quintile is low in the region. The gender gaps in each income quintile are negligible in the region, indicating that the disadvantage of poor children is the same irrespective of whether they are girls or boys (see the case of Albania in figure 1.4). This is, indeed, largely true across the region, though there are exceptions. In three countries, there is at least a 10 percentage point difference between the enrollment rates of girls and boys in the first quintile: Bulgaria, FYR Macedonia, and Tajikistan. The gender gap in Bulgaria and Tajikistan—where poor girls are less likely than boys to attend secondary school—is the opposite of the gender gap in FYR Macedonia. However, the gender gap is not at the same magnitude, if it exists at all, in the top quintile in these same countries.

In the region, girls perform better than boys in learning outcomes in reading, but have similar scores in mathematics and science. The OECD Programme for International Student Assessment (PISA) surveys test 15-year-olds in three subject areas. In the 2009 round, 65 countries were surveyed, including 18 countries in Europe and Central Asia. These were a diverse group of low- and middle-income countries.10 The average score of girls on reading was 11 percent higher than the corresponding average for boys, a significant difference. The average scores for boys and girls on mathematics and science were similar.11 This differential pattern in gender scores is not unique to the region.

9 Net enrollment rates are available only for Europe and Central Asia, Latin America and the Caribbean, and the Middle East and North Africa.
10 The countries in the region participating in the 2009 PISA were Albania, Azerbaijan, Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Kazakhstan, the Kyrgyz Republic, Latvia, Lithuania, Montenegro, Poland, Romania, Serbia, the Slovak Republic, Slovenia, and Turkey.
11 The ratios for boys to girls in mathematics and science were 0.99 and 1.02, respectively. The difference is not statistically significant.
Tertiary Education

Tertiary education extends the period of education and learning among students. It allows young adults to acquire more specialized knowledge, while continuing to develop their cognitive and intellectual skills, all of which combines to improve their productivity in the work force. Yet, one generally does not strive to make tertiary education, unlike the primary and secondary levels, universally available to the population, nor is the content of curricula uniform.

Tertiary enrollments are growing at a rapid pace, raising the question of the impact on quality and on the returns to education, especially among women. During the decade of 1998–2009, there was a rapid increase in tertiary enrollment rates in general in the region. Gross tertiary enrollment rates grew, on average, by 25 and 15 percentage points among women and men, respectively. Though it appears that women are investing more in education over time (in both absolute and relative terms), it is not clear whether the resources and the quality of tertiary education can keep pace with the rapid increase in enrollments.

In the vast majority of countries in the region, female tertiary enrollment rates outstrip male tertiary enrollment rates. The three countries that are the exception are Tajikistan, Turkey, and Uzbekistan, in which the ratio of female to male rates ranges from 41 to 70. On average in the region, tertiary gross enrollment rates among women and men are 60 and 44 percent, respectively, and the average ratio is 129 women for every 100 men attending colleges and universities. This pattern of disproportionately higher female enrollment in tertiary education is global, including in the high-income OECD countries. However, women are less likely than men to pursue postgraduate work.

The richer the country, the more likely women will be disproportionately more well represented than men in tertiary education. In the region, the tertiary enrollment rates grow as gross domestic product (GDP) per capita increases (figure 1.5). However, relative to the male enrollment rate, the female enrollment rate is more strongly correlated with a country’s GDP per capita. As figure 1.5 reveals, there is significant variation among countries, and some clustering at the upper end of the distribution. This pattern also occurs at the global level. In low-income countries, tertiary enrollment rates are low, and female enrollment rates are much lower than male enrollment rates. In lower-middle-income countries, the gender gap in enrollment rates is negligible, while it grows dramatically among upper-middle-income countries.

Note: The gender gap is the difference between the enrollment rates of boys and girls. ECA = Europe and Central Asia. The data are the latest available data between 2007 and 2009. Panel a: ECA average includes Albania, Azerbaijan, Bulgaria, Hungary, Kazakhstan, Latvia, Lithuania, Moldova, FYR Macedonia, Poland, Russia, Tajikistan, and Ukraine.
The gender gap in tertiary education has been widening steadily over the last decade. The differential in gross enrollment rates by gender in the early years of the transition appeared to be relatively narrow, though this cannot be verified because of the sparseness of the data. However, since 1998, time series statistics on tertiary enrollment rates disaggregated by gender have been available for 23 countries in the region. Over the period 1998–2008, the gender ratio (in favor of girls) grew from 1.13 to 1.28 in the region. This was the result of the higher pace of tertiary enrollments among women relative to men (7 versus 5 percent per annum). This feminization of tertiary education is occurring at a more rapid pace in Europe and Central Asia than in high-income OECD countries, where the ratio increased from 1.16 to 1.29 over this same period. In only three countries—Azerbaijan, Tajikistan, and Uzbekistan—did male tertiary enrollments outpace female tertiary enrollments.

At the tertiary level, women constitute almost half the science and engineering students in Europe and Central Asia. This regional average is comparable with women’s participation in these fields in the United Kingdom and the United States, where 50 and 43 percent, respectively, of all science and engineering students are women. In Europe and Central Asia, the average is 46 percent; the highest participation rates are in Albania, Estonia, and Latvia. Almost half the women in the region pursue degrees in the social sciences, business, and law; health care, education, and welfare-related subjects are the second largest category.

The gender differential in fields of study related to education has an effect on occupational segregation and the gender wage gap. A recent study by Flabbi (2011), which was prepared as a background paper for World Development Report 2012 (World Bank 2011a), examines the impact of the choice of the field of study on future labor market outcomes in 13 European countries, including the Czech Republic and Estonia. Three of the main conclusions of the study are relevant to Europe and Central Asia. First, women tend to choose education, the humanities, and health care as their field of study, while men choose the sciences, mathematics, agriculture, and veterinary medicine. In the social sciences, business, and law, the gender differential varies by country: for the two countries in the Europe and Central Asia region that are included in the study, there is no gender differential. Second, the gender differential in the field of study
is not explained by (observable) individual characteristics. The only difference between men and women is the effect of ability on the probability of choosing the sciences or mathematics. Persons of high ability (measured by top grades in secondary school) are more likely to pursue study in these fields, and the effect of ability is larger among men than among women. Third, the field of study is important in future labor market outcomes, particularly in the choice of occupation and in the gender gap in earnings.

Demography

Though the pace of changes in population profiles may appear relatively slow, the changes have large implications for the societies in which they occur. Demographic shifts can easily be overlooked because the age and gender profile of a population remains relatively stable over the period in which most policies are designed and implemented. However, this prevents policy makers from reorienting public expenditures gradually, but systematically to meet the transformation in the needs of citizens. An understanding of demographic shifts can help governments shape public expenditures across a wide range of areas, most obviously in the social sectors of health and education, but also in physical infrastructure.

The dramatic demographic changes in the majority of countries in Europe and Central Asia have brought this issue to the forefront. Many policy makers are aware of these changes, but much remains to be done at the national level to incorporate the implications of the demographic transition for public expenditures and policies. Medium- and long-term national economic development plans and strategies should reflect this information, though it is not clear that this is being done consistently in any country in the region. This section discusses some of the key changes pertaining to women and men as separate groups. Demographic changes can have different implications for men and women given their frequently different roles in the private and public spheres.

The demographic transition represents the shift from high fertility rates and high death rates to low fertility rates and low death rates over a period of decades or centuries (see table 1.1). The countries in Europe and Central Asia are experiencing different stages of the demographic transition, though at a far more rapid rate than Western Europe and North America. The demographic changes in the region have different implications for men and women, which are magnified because

<table>
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<tr>
<th>TABLE 1.1</th>
<th>Demographic Profiles and Fertility</th>
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<tbody>
<tr>
<td>Profile</td>
<td>High fertility and window of opportunity</td>
</tr>
<tr>
<td>Young population; population pyramid with large base and skinny top</td>
<td>Kyrgyz Republic, Tajikistan, Turkmenistan, Uzbekistan</td>
</tr>
<tr>
<td>Aging population; population pyramid with balanced age structure</td>
<td>Armenia; Bosnia and Herzegovina; Kazakhstan; Macedonia, FYR; Moldova</td>
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</table>

Source: Chawla, Betcherman, and Banerji (2007).

Note: Window of opportunity refers to an increase in the number of the potentially economically active population (between the ages of 20 and 59).
many of these societies—even the wealthier societies—have incomes per capita that are relatively modest. Each stage of the demographic transition poses challenges that need to be addressed in the near future to benefit from the window of opportunity or to manage more effectively the consequences of large structural changes.12

Yet, the various demographic transitions will lead, in the next two decades, to a higher proportion of elderly persons, particularly elderly women. During the next several decades, though the total population of the region is not expected to change (a −0.1 percentage decrease), there will be a dramatic change in the age structure of the population. The share of the population above 60 years of age will rise sharply, from 15 percent in 2009 to 25 percent in 2025 and 35 percent in 2050. Moreover, this change in the age structure will not be gender neutral (figure 1.6).

The demographic transition in most of Central Asia is characterized by growth in the share of the population of prime age, providing an opportunity for greater economic growth. The four countries that fall into this category are the Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan. These countries are moving rapidly from the population explosion phase, with a proportionately large share of children, to the window of opportunity phase, with more working-age persons. The proportion of the population between 20 and 40 years of age will rise from 30 to 33 percent between 2000 and 2025. Consequently, the demands on key public services such as maternal and child health, as well as the continued demand for education services at all levels will continue. The working population between 40 and 60 years of age will more than double among men (110 percent) and women (114 percent) during 2000–25.

Yet, for Central Asia to benefit from the demographic window of opportunity, women of prime age need government support to facilitate their entry into the labor market, and especially into productive jobs. Several of the Central Asian countries have seen large out-migrations of working-age men and the resulting feminization of the population. However, because of the lack of incentives and economic opportunities, many women remain either economically inactive or in low-productivity jobs, such as subsistence farming. One key area of support in this high-fertility subregion would be the provision of some type of childcare services, combined with social assistance for low-income single-parent households.

In a diverse group of countries in Europe and Central Asia, there will be more working-age women and fewer children in absolute terms. The countries in the demographic window of opportunity are Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Kazakhstan, FYR Macedonia, and Moldova. For this group of countries, the number of children will fall by 1.9 million during 2000–25, while the number of women between 20 and 59 years of age will increase by 0.98 million during the same period. Though these societies will experience declining fertility, the needs of the growing share of working women for family-friendly policies and services (for example, childcare) will remain equally relevant compared with Central Asia and, possibly, even more relevant depending on the strength of informal family safety nets.

The decline in fertility in some of the countries showing the demographic window of opportunity has been accompanied by a substantial sex imbalance at birth. Three of the countries characterized by a shift toward the demographic window of opportunity show unbalanced sex ratios at birth. In Armenia, Azerbaijan, and FYR Macedonia, the number of missing girls is extremely high and comparable with the levels in China, India, and the Republic of Korea. Missing girls at birth reflect covert discrimi-

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12 Demographers classify population pyramids according to four types, as follows: (a) demographic explosion in young populations, (b) demographic window of opportunity, (c) demographic implosion, and (d) demographic hourglass. The demographic explosion is the pyramid with a large base and skinny top, while the demographic implosion is the opposite, a pyramid with a small base and a wide top. The demographic window is characterized by a high proportion of the working-age population while the demographic hourglass has parts of the working-age population missing and a large elderly population. Countries described by the demographic hourglass show a rising dependency ratio, which reduces the potential of economic growth and increases the vulnerability of households to poverty.
nation in the household, resulting from a combination of strong preferences for sons, declining fertility, and prenatal sex determination. This problem has not been sufficiently studied in the region and calls for greater attention.

In the countries in the window of opportunity phase of the demographic transition, the aging of the population has begun, and this has important consequences for elderly women. In 2009, the proportion of the population above the age of 60 years was 11

(Continues to next page)
percent in the region, of which almost two-thirds (59 percent) were women. Because of the accelerated aging, the proportion of the elderly will rise to 22 percent, of which 57 percent will be women by 2025. The higher proportion of elderly women has potential fiscal ramifications through the pension and social protection systems.

The majority of countries in Europe and Central Asia are aging rapidly, and the number of employable persons is falling. A total of 17 countries in the region are experiencing a demographic implosion. The number of persons between the ages of 20 and 60 years will fall from 182 million to 162 million between 2000 and 2025, equal to an 11 percent decrease. To prevent a sharp decline in economic activity, one might try to maintain the size of the labor force by attracting temporarily or permanently inactive women and retaining working women in the labor force for a longer period of time by delaying retirement (so that it is equal to men’s retirement age). Yet, to achieve higher female labor force participation, the supporting institutional infrastructure (for example, child-care and appropriate parental leave) needs to be in place, and there need to be changes in retirement laws.

Health

Along most health indicators, the region is converging toward the high-income OECD countries. In most of the indicators on demography and health, the region performs well compared with Latin America or East Asia. Though the region lagged behind the OECD at the beginning of the transition, most indicators have converged during the past decade. However, there is significant diversity in the region: selected countries show health indicators similar to those in other, less-developed regions.

Source: World Bank staff calculations based on UN (2009a).

Note: Young countries include the Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan. The aging countries are Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Kazakhstan, FYR Macedonia, and Moldova. Aged countries are Belarus, Bulgaria, Croatia, the Czech Republic, Estonia, Georgia, Hungary, Latvia, Lithuania, Montenegro, Poland, Romania, Russia, Serbia, the Slovak Republic, Slovenia, and Ukraine. Each bar represents a five-year age-group. Women are indicated in blue; men are indicated in red.

13 The countries are Belarus, Bulgaria, Croatia, the Czech Republic, Estonia, Georgia, Hungary, Latvia, Lithuania, Montenegro, Poland, Romania, the Russian Federation, Serbia, the Slovak Republic, Slovenia, and Ukraine.
Life Expectancy and Mortality

Two drivers are determining the forecasted demographic transition: changes in mortality rates and changes in fertility rates. Mortality rates and health outcomes have dramatically improved in the region; in particular, during the last decade, the mortality rate has somewhat improved among men, leading to a contraction of about a year in the gender gap in life expectancy. However, the high male mortality rate relative to the female mortality rate is persisting in many countries. This is associated with a variety of factors, including alcohol abuse.

The gender gap in life expectancy in the countries of the region needs to be narrowed. The average change in the gap in life expectancy in the region has closed by one year; however, the variability in the change in the gap in life expectancy is large (measured by statistical variance) (figure 1.8). In Bosnia and Herzegovina, the gap has closed by 12 years, mostly because of a recovery in male life expectancy. At the opposite extreme, the gender gap in life expectancy in Belarus has increased in the past five years: while male life expectancy has increased (by 0.3 years), female life expectancy has increased even more (1.8 years).

During the last decade, the negative trend in male life expectancy that has been common in certain countries of the region has reversed. Although the average trend in life expectancy in the region has been positive for men and women since the beginning

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14 Figure 1.8 shows changes in the gender gap in life expectancy; annex A, table A.1 shows the values.
of the transition, Belarus, Kazakhstan, Montenegro, Russia, and Ukraine experienced a negative trend in life expectancy during the 1990s. Average male life expectancy fell from 64 to 62 years during the 1990s in this set of countries. This negative trend seems to have been associated with alcohol abuse, as discussed below. During the past decade, all these countries have seen an increase in male life expectancy, despite the continuing high adult mortality rates in Belarus, Russia, and Ukraine (figures 1.9 and 1.10).

The male mortality rate among adults between 20 and 59, although still higher than the corresponding female rates, has fallen from the high values observed in the 1990s. In the region, the average male mortality rate for adults 20 to 59 years of age fell from 223 in 2000 to 205 in 2006. The female adult mortality rate in the region is considerably lower and has been more stable since the transition at the beginning of the 1990s. However, the male adult mortality rate decreased noticeably in the last decade. This decline occurred everywhere except the Kyrgyz Republic and Ukraine, which has shown an increase in the mortality rate equivalent to the one observed in the 1990s. The high male mortality rate countries—Belarus, Lithuania, and Russia—showed some improvement, but remain among the countries with the highest rates compared with the rest of the region (figure 1.10).

Possible determinants of the high mortality rate are associated with alcohol abuse. The high male mortality rate in many of the countries in the region is associated with alcohol abuse and other, related risks. A recent World Bank report concluded that
Russians, especially men, suffer disproportionately from (1) injury and violence, including traffic accidents, domestic and other violence, and suicide; (2) cardiovascular disease; and (3) cancer (see box 1.1). All these causes are affected by excessive alcohol, tobacco, and other drug use. The relationship with changes in economic growth suggests that the lack of economic opportunities and the ensuing mental stress continue to play a crucial role.

The high male mortality rate is not a new phenomenon in Russia. The average mortality rate among adult Russian males is now on a par with the rates in Ethiopia, Haiti, and Sierra Leone. The Russian male adult mortality rate has shown several spikes over the years, usually associated with the economic and political situation (Nolte, McKee, and Gilmore 2004). The slight increase in male mortality during the 1960s, 1970s, and 1980s reversed in the mid-1980s concurrently with political changes. The male adult mortality rate then fell between the mid-1990s until the Russian economic crisis in 1998. Since then, however, the male mortality rates for ages 25–59 have been rising again, despite high economic growth. Finally, 2007 may turn out to be the beginning of a new decreasing trend.

**Box 1.1: Russia’s Growing Health Crisis**

Every day, 100 people die in traffic accidents in Russia, and over 100 people die of acute alcohol poisoning. The excessively high levels of mortality, ill health, and disability among the working-age population have far-reaching demographic, financial, and social consequences. (The evolution in mortality rates in the 20–59 age-group is shown in figure 1.10, for example.) A recent report of the World Bank’s Europe and Central Asia Region concluded as follows:

- Economic stress, coupled with a tradition of unhealthy lifestyles and unhealthy environments, has led to a reversal in life expectancy, especially among adult men. This is worsening the demographic trends in a rapidly aging population.
- Noncommunicable diseases, notably cardiovascular diseases and cancer, as well as injuries, are the main causes of death in Russia. The mortality rates associated with these diseases and with injuries are three and five times higher, respectively, than the corresponding rates in the European Union. Traffic injuries, suicide, alcohol poisoning, and violence account for the main share of lethal injuries.
- Alcohol and other drug abuse, as well as heightened tobacco consumption, increases the probability of these diseases, as do poor diets and stress caused by worsening socioeconomic conditions.
- The ill health and high mortality rates result in fewer productive workers.
- Regional disparities and even national security risks are growing. Health care costs and the costs associated with the loss of production because of absenteeism or low productivity are high.

Reproductive Health and Maternal Mortality

At the beginning of the transition, women across the region enjoyed relatively good health and access to basic health services. The only major area of concern was the lack of access to modern forms of contraception and the heavy reliance on abortion. The change in the trend that began in the 1990s persisted, and a convergence toward OECD country levels is observable today.

The maternal mortality rate in the region has converged to the level of the rates in the OECD countries. At the beginning of the 1990s, maternal mortality rates in Europe and Central Asia, though relatively low compared with Latin America and East Asia, were high compared with developed countries. In 1990, the maternal mortality rate in the region was almost two-thirds higher than the rate observed in OECD countries: 49 versus 30 deaths per 100,000 live births, respectively, in Europe and Central Asia and in the OECD. However, during the last two decades, the maternal mortality rate has converged toward the levels of the rate in the OECD (figure 1.10). In 2008, the average maternal mortality rate in the region was 27 per 100,000 live births.

However, there is enormous variation in maternal mortality rates across the region. The difference in the maternal mortality rates of the countries with the highest and the lowest rates is 75 per 100,000 live births, which is three times the value of the maternal mortality rate in the OECD in 2008. The Kyrgyz Republic, Tajikistan, and Turkmenistan are the three countries with the highest rates, while Poland, Serbia, and the Slovak Republic are the three countries with the lowest rates (figure 1.11).

Improvement in the maternal mortality rate has been achieved in selected countries in the region. Despite the convergence in the 1990s, two countries in Europe and Central Asia still showed higher maternal mortality rates in 2000 than the average in Latin America or East Asia. In 2000, the maternal mortality rate was 91 in Turkmenistan and 120 in Tajikistan (figure 1.12). However, significant improvement was observed in other countries of Europe and Central Asia, including Azerbaijan, Kazakhstan, Latvia, Romania, Russia, Turkey, and Ukraine. The improvements in these countries were mainly responsible for the convergence of the rates in the region toward the rates in the countries of the OECD.

However, it is not clear why improvements in the maternal mortality rate were not achieved in all countries. In a region in which almost all births are attended by health personnel, why is there such a high level of maternal mortality in some countries? The reasons may range from poverty at the household level (given that the poorest countries in the region experience the highest mortality rates) to the specific characteristics of the health system in each country (given the high share of births attended by skilled health personnel). In the region, Tajikistan has the lowest share of births attended by skilled health personnel; yet, only 12 percent of births occur unattended.

Infant and Under-5 Mortality

Infant and under-5 mortality rates in Europe and Central Asia compare well with rates in East Asia, Latin America, and the OECD. However, the variation across countries within the region is high. The Central Asian countries, in particular, show mortal-
ity rates that are above the average rates in East Asia and Latin America. Nonetheless, in recent decades, the improvements in these countries has been significant, although generally below the regional average.

*The average infant mortality rate in Europe and Central Asia is higher than the average rate in the high-income OECD countries, but converging.* During the 1990s, the average infant mortality rate in Europe and Central Asia converged toward the high-income OECD average. The rate fell from 33 per 1,000 live births in 1990 to 23 in 2000. During the last decade, the rates in the region have continued to improve. In 2009, the average infant and under-5 mortality rates in the region were only 16 and 19 per 1,000 live births, respectively (figure 1.13).

*Although at a slower pace, the average under-5 mortality rate in the region has also been converging toward the rate in the OECD.* The average under-5 mortality rate in the region fell from 40 per 1,000 live births in 1990 to 28 in 2000 and 17 in 2009. Despite the important progress observed in the region, the average under-5 mortality rate was above the average in the OECD, which was 9 per 1,000 live births in 2009 (figure 1.13).

*In the region, there is large variation across countries in infant and under-5 mortality rates* (figures 1.14 and 1.15). Infant and under-5 mortality rates are closely correlated, which is perhaps indicative of the underlying quality of the health care services available for children. While the infant and under-5 mortality rates in the Czech Republic and Slovenia are considerably below the averages in the OECD, the rates in the countries of Central Asia and the south Caucasus are significantly higher than the regional average. The under-5 mortality rate was 65 per 1,000 live births in Tajikistan, but only 3 in Slovenia. Similarly, the respective infant mortality rates in these two countries were 54 and below 3 per 1,000 live births. The significant variation in the infant and under-5 mortality rates is closely correlated with gross national income per capita, with the exception of Azerbaijan, Kazakhstan, and Turkmenistan, where mortality rates are well above what one might predict based on income. Turkey is another example. There, income per capita would suggest the infant mortality rates would be somewhat lower. It may be, in this case, that changes in health care outcomes are not keeping up with the high rates of economic growth.

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16 The average infant mortality rate in high-income OECD countries in 2000 was 6 per 1,000 live births.
Belarus, Estonia, and Turkey have experienced the biggest drops in infant and under-5 mortality rates over the last decade, but many other countries in the region have seen big improvements as well. Infant and under-5 mortality rates dropped, on average, by one-third in the region during 2000 and 2009, while, in Belarus, Estonia, and Turkey, rates fell by over 50 percent. The decline in the infant and under-5 mortality rates in the countries with the highest rates in the region has been mostly below the regional average, indicating a lack of convergence between the south Caucasus, Central Asia, and the rest of the region. In Azerbaijan, the infant mortality rate fell from 78 per 1,000 live births in 1990 to 56 in 2000 and 41 in 2009. In Tajikistan, the country with the poorest performance, the infant mortality rate fell from 100 per 1,000 live births in 1990 to 80 in 2000 and 60 in 2009.
mortality rate fell from 117 per 1,000 live births in 1990 to 93 in 2000 and 65 in 2009.

Fertility Rates
The substantial variation in the fertility rate across the region is consistent with the diversity observed in the demographic transition. The total fertility rate in 19 countries in the region is around 1.8 births per woman (figure 1.16). The Central Asian countries, which have younger populations, have high fertility rates, while countries with populations classified as aging or aged have fertility rates below the replacement level and below the average in the OECD. Among the Central Asian countries, Tajikistan had the highest fertility rate (3.4) in 2009, and Turkmenistan had the lowest (2.4).

In the region over the last two decades, total fertility rates have been diverse across countries and over time. During the 1990s, the total fertility rate fell in all countries in the region except Croatia. In some countries, such as Turkmenistan, the decline was considerable (from 4.5 in 1990 to 2.8 in 2000), while, in other countries, such as Montenegro, it was insignificant (from 1.87 in 1990 to 1.82 in 2000). However, during the last decade, the picture

Note: EAP = East Asia and the Pacific. LAC = Latin America and the Caribbean.
was completely different. In half the countries in the region, there was an increase in the total fertility rate, while, in the other half, there was a decline. The magnitude of the decline in the total fertility rate during the 1990s does not seem to have been correlated with the changes in fertility in the 2000s, indicating that many factors, including the economic situation and societal changes, are likely to be in play. For example, in Azerbaijan and Kazakhstan, the total fertility rate decreased by 0.67 and 0.72, respectively, during the 1990s, but has increased by 0.3 and 0.8, respectively, since then. Meanwhile, the total fertility rate fell by 0.8 and 0.9 in Tajikistan during each decade, respectively (figure 1.17).

Thus, the declining trend in the average total fertility rate in the region during the 1990s has changed to a steady trend in the new millennium. During the 1990s, there was a drastic decline in the average total fertility rate in Europe and Central Asia, which resulted in a convergence toward the rates in the OECD. The average total fertility rate in Europe and Central Asia fell from 2.4 in 1990 to 1.8 in 2000, the average in the OECD. In 2009, the average rate in Europe and Central Asia was still the same (figures 1.16 and 1.18).

Selected countries in the region are key sources of the children involved in intercountry adoptions. Russia and Ukraine are among the top five countries in the world in terms of the number of children put up for intercountry adoption. Many of the children are the result of unwanted pregnancies, thus suggesting that contraceptive methods are not sufficiently widespread and that there may be a social stigma on single motherhood, since most of the mothers giving their children up for adoption are young and unmarried. (The abortion rates in Russia and Ukraine are among the highest in the region; see below.)

Income per capita does not seem to be related to changes in the total fertility rate. There are many factors that explain the total fertility rate. One of them is income per capita. Thus, in many countries, an economic boom translates into a boom in fertility,

17 Albania, Bosnia and Herzegovina, Georgia, FYR Macedonia, Moldova, Montenegro, Poland, Slovak Republic, Tajikistan, Turkey, Turkmenistan, and Uzbekistan showed a decrease in the total fertility rate in both decades, while Azerbaijan, Belarus, Bulgaria, the Czech Republic, Estonia, Hungary, Kazakhstan, the Kyrgyz Republic, Latvia, Lithuania, Romania, Russia, Slovenia, and Ukraine showed a decline in the total fertility rate during the 1990s and a rise during the next decade.

18 The other three countries are China, Guatemala, and the Republic of Korea.
which may explain the increase in fertility in countries such as Tajikistan. However, the data do not indicate any association in the region between the total fertility rate and GDP per capita or growth in GDP per capita.

The low fertility rate is a concern among policymakers because of the implications for the demographic transition and because the fertility rate does not seem to be responding in the short run, at least, to policy changes. Some countries, such as Croatia and Romania, are concerned about the implications of the low fertility rate and have adopted mechanisms to encourage families to have children. We note two of these policies: first, these countries are generous in terms of maternity leave coverage, but not as generous in parental leave; second, child allowances are provided instead of childcare services.

**Abortion and Contraceptive Use**

The variables commonly used to explain fertility are marriage rates, abortion rates, contraceptive use, the duration of breastfeeding, and age at first marriage. Marriage rates, although relevant, are becoming less important in explaining fertility because of the increasing number of births out of wedlock. Thus, although 70 percent of children are born in wedlock, the share of extramarital births has increased by 50 percent since the late 1990s.

Abortion rates are decreasing in the region as women obtain access to modern methods of contraception. The average abortion rate in the region declined considerably between 1999 and 2008, from 25 to 15 abortions per 1,000 women 15 to 49 years of age. However, the average is still higher than the rates in the OECD. The abortion rate was only 6 in Germany and Switzerland, for example (figure 1.19).

Despite the declining trend in the region, the abortion rate remains high in many countries; it has even increased in Georgia. The abortion rate in Estonia, Romania, and Russia is more than two times higher than the average in Europe and Central Asia. In Georgia, the abortion rate increased during the last decade. Additionally, in the region, there is a positive association between the use of modern methods of contraception and abortion rates. In three countries (Estonia, Romania, and Russia), the use of contraception is above 70 percent among women between 15 and 49 years of age.

The age at first birth does not seem to be a determinant of fertility in most countries in the region. In countries with higher fertility rates, women tend to have their first born at a younger age. However, the fact that the fertility rate is low in these countries (slightly above 2 children per woman) and that the average age at first birth is relatively high (above 27 years of age) suggests that there is probably no caus-
This conclusion is supported by two observations. First, the average age at first birth in the region is slightly lower than the average age in OECD countries, 27.5 versus 28.4 years, respectively. Second, a simple correlation between the average age at first birth and the total fertility rate shows no significant association between these two variables.

The rate of adolescent pregnancy in the region is low and is decreasing over time. In the region, the rate of adolescent pregnancy—the number of live births to women between 15 and 19 years of age per 1,000 women in the age-group—is below the average in the OECD, although it is still above the average in high-income OECD countries. The region's average rate of adolescent pregnancy was 23 in 2008, while, in the OECD, the rate was 27, and, in the high-income OECD countries, it was 17. The average adolescent pregnancy rate in the region fell by about 30 percent during the last decade given that the rate was 33 in 1998 (figure 1.20).

There is significant variation across the region in the adolescent fertility rate. The adolescent fertility rate is high in the countries of the south Caucasus and in Bulgaria, Moldova, Romania, Ukraine, and Turkey. The difference in the rate between the countries at the two extremes—Georgia and Slovenia—is on the order of 10 times (figure 1.21). However, though adolescent fertility should always be a concern, it is low in the region relative to other developing regions.

Adolescent fertility rates are not correlated with total fertility rates at the country level. This is positive because it implies that adolescents are not driving the fertility rates observed in the region. Nonetheless, for health reasons and for the sake of future labor market opportunities, it is not beneficial for adolescents to bear or take care of children. In our case, the lack of correlation between the two rates may imply that adolescent mothers either do not have information about the benefits of delaying birth or do not have access to education and labor market opportunities. Whatever the explanation, this should be a matter of concern for policy makers not least because it indicates there is room for efficiency gains in labor resources.

**Missing Women**

The term missing women refers to the observation that the proportion of girls and women in the population of a country is too low. The indicator is
computed using the mortality risk of women and men at every age in a country relative to the mortality risk at the same ages in a group of high-income reference countries.

**Armenia, Azerbaijan, and Georgia have the highest sex imbalance at birth in the world after China.** Although most of the attention regarding missing women is focused on China and India, the three countries in Europe and Central Asia show levels of sex imbalance that are equally high. In China, 118 baby boys are born for every 100 live births of girls, while, in Armenia, Azerbaijan, and Georgia, the corresponding numbers are 116, 115, and 111, respectively (figure 1.22).

GDP growth is not driving the sex imbalance at birth, which means that three other factors may be at play. A simple correlation of GDP per capita (or GDP growth) and sex imbalance at birth indicates
no association.\textsuperscript{19} There are three other factors that influence the sex imbalance at birth: first, the decline in fertility may contribute to the emergence of the choice of sex in the child; second, ultrasound technology has become widely available, allowing for prenatal sex discrimination; and, third, the preference for sons among some families remains strong, at least in selected developing countries. The combination of all these factors under the different models of choice in fertility can be detrimental.\textsuperscript{20}

\textbf{Disparities within Countries}

It is important to acknowledge that gender differences are usually exacerbated within each country so that poor women are less able than wealthier women to defend themselves against discrimination and the lack of access. In Europe and Central Asia, Roma women offer an example (box 1.2).

\textbf{The Implications for Policy Design}

To close the gender gap in secondary schools, special emphasis needs to be placed on children in poor or minority groups. A significant share of this gender gap can be explained by the low participation of children in poor and minority groups, especially in Central and Eastern Europe. Many schools that are located in underserved communities may also be of poor quality and possess inadequate human and financial resources. In addition, there may be unaddressed cultural constraints explaining why girls are kept home, while boys are sent to school. To address these challenges, governments need to make a concerted effort to promote access to quality education for poor and minority children, reduce school segregation, train teachers and assistants to deal with the special challenges, and, perhaps, introduce incentives to encourage families to send their daughters through schemes such as the conditional cash transfers used by several countries in Latin America and even the western Balkans (for example, FYR Macedonia). Finally, it is

\textsuperscript{19} More details about this association may be found in chapter 3 of \textit{World Development Report 2012: Gender Equality and Development} (World Bank 2011a).

\textsuperscript{20} Various models that include a preference for sons may be used to explain fertility. For example, couples may decide, in an initial stage, on the number of children they desire and then use ultrasound technology to realize the preference for sons. Thus, ultrasound technology is making other models of fertility obsolete. An example of a model that might be becoming obsolete is the stopping model, whereby families have children until they produce a son. Under such model assumptions, the mother may decide on how many children to have. Moreover, there are studies that show that the sex of the second born is related to the sex of the first born.
also important to address the underlying concerns of parents about sending girls to school, which may sometimes be as simple as providing safe transportation for girl students.

*The demographic transition that is under way has raised government interest in increasing fertility, although a more realistic alternative may be to focus resources on making the next generation more productive.* Traditionally, a focus on fertility has been considered a policy to mitigate the demographic transition to elderly populations. Most demographers used to recommend replacement-level fertility rates (that is, an average of two surviving children per adult woman). However, today, the world total fertility rate is below this level, and this policy recommendation seems unrealistic. Government policies geared toward reversing declining fertility have not been widely successful even in the more advanced economies. Thus, policies are moving toward ways of increasing the value generated by newer population cohorts so that children will be able to produce more for a larger population in a context of environmental sustainability. These types of policies thus advocate raising the human capital of younger cohorts, increasing the productivity of new entrant workers, and promoting research and development in environmentally friendly industries and processes.

*The problem of the missing women in the region calls for more attention to provide evidence-based policies.* It is important to understand if this problem is common to all households or particular to the bottom of the income distribution. For example, if the gender imbalance at birth is common to all households, one policy used in many countries such as China and India is to ban prenatal screening.21 However, policies should generate incentives to prevent prenatal screening because banning prenatal screening is debatable on the grounds of free choice, but also because there are plenty of ways to bypass the law. Thus, policies should be designed to discourage prenatal screening by raising the associated costs, for example, health insurance might not cover the test for prenatal screening or high tariffs might be placed on medical screening devices by private companies or individuals. If this problem is found only at the bottom of the income distribution, additional instruments such as conditional cash transfers can be used. In the state of Haryana, India, there is such a program whereby families receive an immediate cash compensation if they give birth to a daughter and a long-term savings bond redeemable on the daughter’s 18 birthday provided she’s unmarried, with additional bonuses for education. In addition, the problem of missing women accumulates through the life cycle if girls and women have differential access to health and nutrition, leading to a different set of policies.

*To address the maternal mortality resulting from induced abortions, greater emphasis on modern con-

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21 Austria, the Republic of Korea (Asia), New Zealand (Oceania), Switzerland, and Vietnam fully prohibit prenatal screening. Australia, Belgium, Bosnia and Herzegovina, Bulgaria, Canada, China, Croatia, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, India, Israel, Italy, Latvia, Lithuania, the Netherlands, Norway, Portugal, Russia, San Marino, Singapore, Turkey, and the United Kingdom prohibit prenatal screening for social reasons (Darnovsky 2009).

### Box 1.2: Health Access among Roma Women

At a population of 12 million (according to some estimates), Roma constitute the largest minority in Europe. The existing evidence suggests that Roma have generally poor health outcomes and face significant barriers to adequate health care, including discrimination on the basis of their ethnicity.

Roma women have less access to health services compared with non-Roma women. The lack of access to health services among Roma women is more significant in birth delivery than in prenatal care: 95 percent of Roma women in FYR Macedonia and 89 percent in Serbia received prenatal care in 2006 compared with 99 percent of non-Roma women. In birth attendance, the difference between groups is similar: on average, 82 percent of Roma women in FYR Macedonia and 93 percent in Serbia give birth with the assistance of skilled personnel, while the average among non-Roma women in these countries is 99 percent.

Abortion rates are higher among Roma women. In survey studies conducted in Serbia, half of all Roma women reported having had at least one abortion in their lifetimes, and 7 percent of all Roma women reported undergoing more than 10 abortions. These rates are extremely high compared with the national average, which is about 10 percent. Moreover, anecdotal evidence indicates cases of unsafe abortion (WHO 2010).
traception methods is necessary. The government will need to consider launching information campaigns that demystify the unintended effects of contraceptives, training practitioners to offer a wider range of contraceptives to clients, understanding the needs and preferences of clients, increasing the availability of modern contraceptives free of charge or for a nominal price, and diminishing the coverage supplied by public health systems for abortion costs. Evidence suggests there is partial knowledge about modern contraceptives among both clients and health care providers. Clients perceive oral contraception as unreliable and are more likely to interrupt the use of this method, which will result in unwanted pregnancies. Health practitioners in the region recommend condoms, intrauterine devices, and oral contraceptives and do not recommend other methods (such as injectables, Norplant, and sterilization). In addition, although all contraceptive methods are legal, availability is limited to the more traditional methods. Finally, contraceptive methods are not always available through public health services, nor are they necessarily supplied free of charge. Moreover, the quality of available contraception is poor and should be improved and even fostered through research and development on new methods. Increasing the use of modern contraceptive methods is key in the region because of the high abortion rates. The purpose would be not only to reduce maternal morbidity and maternal mortality, but also to focus on the fact that modern contraception is a more cost-effective way of family planning than abortion, particularly given the limited physical availability of hospitals in some countries.

Many of the male mortality factors can be remedied at low cost. The evidence appears to indicate that the excessively high rates of deaths among prime age males are largely a result of noncommunicable diseases (of the circulatory system) and, to a secondary degree, traffic accidents. To address this, a comprehensive national program operating at all levels of government (federal, regional, and municipal) is necessary. At the regional level (especially, in the larger countries such as Russia), new programs need to be developed. First, primary prevention programs that undertake interven-

tions in the areas of alcohol and tobacco abuse, changes in diet, and the promotion of physical activity need to be developed. The secondary prevention programs should address hypertension, cholesterol, and diabetes control. In addition, it is important to pursue improved road safety, as well as emergency medical services. These need to be complemented at the federal level by (1) adopting appropriate legislation, policies, and strategies to support the program interventions, (2) building institutional capacity, and (3) assuring federal oversight and accountability.

The aging of the population may require significant changes to social pension programs in the region. Although, at present, a significant share of the elderly receive benefits through pension programs, this may no longer be the case in the future given the increased informality in the labor market. However, many governments in the region do provide social pensions, that is, cash transfer programs that help the elderly who have no recourse to any other form of income. An expansion of these programs may be necessary in the future, though these programs will be competing with other public expenditures. Depending upon the coverage of the existing pension systems, governments may need to rethink their public pension systems to determine the optimal (and affordable) way to ward off old age poverty. According to one proposal, all elderly would receive a small social pension that would be affordable and provide some small income to all elderly. However, this would need to be developed in coordination with revisions to the public pension system, as well as the social assistance system.

The long-term care requirements of an aging population call for innovative responses to compensate women family members who provide the majority of this care. Throughout Europe, but also in the region, the majority of long-term care is provided through informal home care arrangements rather than by public or private state institutions. In the future, reforms in the financing and delivery of long-term care will need to be addressed, especially in the case of informal caregivers. Because the burden of the care of the elderly will only increase in the future, there is a strong possibility that the
current practice of unpaid informal caregivers may not be sustainable. Some countries, such as Austria, Germany and selected Nordic countries, provide pension credits to informal caregivers given that these are women who have forfeited the opportunity of employment. In addition, informal caregivers may need the support of professionals because some tasks associated with these activities may be well beyond their capability. In the Netherlands, informal and formal long-term care is provided, although this requires strong institutional capacity.