The Impact of Aging on Economic Growth
SOUTH EAST EUROPE

REGULAR ECONOMIC REPORT
SPECIAL TOPIC

The Impact of Aging on Economic Growth
Acknowledgments

The South East Europe Regular Economic Report (RER) covers economic developments, prospects, and policies in six South East European countries (SEE6): Albania, Bosnia and Herzegovina, Kosovo, FYR Macedonia, Montenegro, and Serbia. The Special Topic supplements the RER and discusses policy issues with relevance to SEE6 countries. The report is produced twice a year by World Bank staff economists working on SEE6 countries. This Special Topic supplement is prepared by Anil Onal. The SEE6 RER task is led by Gallina A. Vincelette.

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The Special Topic supplements and the RERs may be found at: www.worldbank.org/eca/seerer/.
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I. Introduction

The six countries of South East Europe (SEE6) are aging fast and catching up with developed economies that are already far advanced in the aging process.\(^1\) As fertility and mortality rates decline, populations transition through different demographic stages. Economies across the world, today, are at different stages of demographic transition. For instance, the median age in the SEE6 is already 8.7 years higher than across the world.\(^2\) According to UN population projections, the difference is expected to widen in the next 50 years to 11.7 years, despite an increasing global median age.\(^3\) The impending demographic transition in the region is particularly pronounced in Bosnia and Herzegovina, where the median age, 41.5 in 2015, is expected to rise to 53.9 in 2065—becoming the second highest in the world, surpassing Japan as well as Germany, and trailing closely Singapore.

Low fertility rates are reducing working-age populations across the SEE6.\(^4\) The regional fertility rate declined by almost two-thirds in the last 50 years and reached 1.6 children per woman in 2015, a level comparable to the rest of Europe. In the next 50 years, total fertility rates are projected to increase moderately across Europe but less so in the SEE6 economies with 1.7 children per woman in 2065. The effects of low fertility rates on the size and composition of populations are exacerbated in the SEE6 by lower life expectancies compared to the developed European economies (EU15) that are already advanced in the aging process. Today, the average person in the EU15 is expected to live 5.2 years longer than the average person in the SEE6. Though technological catchup and increasing incomes are expected to increase life expectancy, the gap with the EU15 is expected to reduce only marginally to 5 years in the next 50 years. Low fertility rates and lower life expectancies relative to the EU15 have implications on the composition of populations across the SEE6. In 1965, there were 6.3 dependents per 10 working-age individuals in the SEE6; in the following 50 years, the ratio declined to 4.5:10 in 2015, below the EU15 average of 5.5:10. In the next 50 years, dependency ratio is expected to increase to 8.1:10, exceeding marginally the EU15 average of 8:10 and with the number of dependents who are old reaching 5.6: 10 working-age people in 2065.

The adverse SEE6 demographic dynamic is aggravated by emigration. Between 1990 and 2015 emigration accounted for an average 3.2 percent loss, every five years, of population in the SEE6. Although part of the loss reflects displacements resulting from the break-up of Yugoslavia and the war, a significant part has continued even with the peace, explained by the region’s incomplete transition to market economies, chronically high unemployment, and lower living standards than neighboring EU countries. Typically, better-educated and younger individuals look for employment opportunities elsewhere as evidenced particularly among the emigrants from Albania.

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1 The SEE6 are Albania, Bosnia and Herzegovina, Kosovo, FYR Macedonia, Montenegro, and Serbia.
2 The SEE6 regional indicators are calculated as simple averages across the countries.
3 The medium variant of the UN population projections (2015 revision) is used throughout the analysis unless otherwise stated. These projections do not list demographic indicators separately for Kosovo, but those are covered under Serbia.
4 The EU15 includes Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, and United Kingdom.
In the absence of any policy and behavioral responses or changes in labor productivity, and where population aging reflects solely declining overall labor force participation rates, aging itself would be expected to negatively impact economic growth. This is likely to be a problem in economies where aging is driven by falling fertility or emigration rather than by longer life expectancies. For instance, a simple simulation exercise shows that, purely due to demographic dynamics, overall labor activity in the SEE6 would drop from 50.7 percent of population in 2015 to 41.7 by 2065, if individual labor force participation decisions remain unchanged. As a result, unless there are shifts in labor productivity, a shrinking labor force would reduce average annual income per capita growth in the SEE6 by 0.4 percentage points, and income per capita by one-third of their current level, by the end of this period. The estimated effects, based on strong assumptions of no behavioral or policy response, are in the upper bound.

Boosts in productivity are one of the key ways to counterbalance potential negative effects of aging on economic growth. The link between changing demographic structure and productivity is undoubtedly a complex one. On the one hand, since older workers are thought to be less mobile, less entrepreneurial, and less innovative, population aging is expected to undermine productivity while heightening propensity for consumption. Therefore, as the relative size of older cohorts rises, productive capacity could fall short of what is needed to support the consumption of the entire population without any deterioration in living conditions. As the share of the elderly increases, so would demand for such public services as pensions, health, and long-term care, pressuring the already limited fiscal space in the SEE6 to provide what is needed to meet the obligations to and investment needs of older generations. On the other hand, a declining working-age population may open up opportunities for more capital-intensive production while a declining student population may increase the opportunities for higher quality education. The link between changing demographic structure and productivity is undoubtedly a complex one. The empirical evidence points towards the likelihood of innovation depending strongly on the accumulation of human capital (see Benhabib and Spiegel, 1994). While a relatively high proportion of young highly educated workers tends to be related to improvements in total factor productivity through technology innovation, more experienced workers tend to be important catalysts of technology adoption and adaptation. Striking the right balance between policies enhancing human capital accumulation in young cohorts and the utilization of experience of older cohorts, along with overall increase of labor force participation tends to slow down or counteract the expected negative effect of aging on income per capita.

Changes in both individual and business behavior supported by policies that increase quality of human capital and encourage labor force participation can help seize the opportunities and mitigate the adverse effects of an aging population. Although aging brings many challenges that are real and urgent, it also creates opportunities. Longer life expectancies may motivate individuals and firms to save more and invest more on education and health, building the quality of their human capital. Increased savings might also support productivity-enhancing public investments, especially those that heighten the quality and availability of education and health services. Empirical evidence from Europe has shown that policies aimed exclusively
at improving labor force participation do not appear sufficient to counteract the negative effects of aging on income convergence (Crespo Cuaresma et al, 2015). Instead, enhancing the educational attainment in addition to increasing labor force participation leads to an accelerated pace of income growth. Equally important, the structural reforms consistently emphasized for the SEE6 would surely expand economic growth prospects and therefore give economies in the region firm protection against the effects of demographic change. Policies that promote preventive health measures, child care and early childhood development services, fiscally sustainable pension and other social benefit systems, and lifelong learning are particularly important. These opportunities, however, may not be equally available to everyone. For instance, earnings and saving gaps between skilled and unskilled individuals tend to widen with age (Bussolo, et al. 2015). However, if policymakers meet the challenges, seize the opportunities, facilitate behavioral adjustments, and address the distributional impacts, the reality for the SEE6 countries may be markedly different, with people in the region living longer, healthier, more active, and more prosperous lives.
II. Demographic Trends and Projections

**Aging is universal.** All economies face declining fertility and mortality rates at some point due to factors such as technological change and rising incomes, among others. As a result, they transition through various demographic stages (Figure 1), and their populations age. In 1965, globally the median age was 21.9, which increased by over one-third to 29.6 in 50 years. In the next 50 years the prospect is for aging to continue, with the median age rising by almost one-third to 38.1 in 2065. Not all economies are at the same stage of demographic transition. For instance, developed economies in Europe, such as Germany, Portugal, and Italy, are far advanced in the process, closely following Japan, which at 46.5 has the highest median age in the world. At the other end of the spectrum, Africa is still very young; in Niger, for instance, the median age is as low as 14.8.

**Figure 1: Demographic Transition Model**

![Demographic Transition Model](https://example.com/demographic-transition-model)

Source: Bussolo, Koettl, and Sinnott 2015.

**The fast-aging SEE6 countries are catching up with the developed economies already far-advanced in the process.** The median age in the SEE6 is already 8.7 years higher today than the median age across the world; in 50 years the difference is to be a projected 11.1 years. By then the median age in Bosnia and Herzegovina is expected to be the second-highest in the world, higher than in Japan and not far behind Singapore (Figure 2). With aging come higher old-age dependency rates, as in the SEE6, as well as shrinking populations where fertility rates are low and mortality rates high, again as in the SEE6.
A period of demographic dividend is ending for the SEE6. Until recently, economies in the region enjoyed increasing shares of working-age populations (Figure 3). In 1965 there were 1.6 working-age individuals to support each dependent; over the next 50 years the number went up to 2.2. However, projections for the next 50 years are for the number of working-age individuals per dependent to drop to 1.2. The composition of dependents is also expected to change. In 2015, in the SEE6 there were 2.2 old-age dependents per 10 working-age people. In 2065, there will be a projected 5.6, bringing the total number of dependents to 8.1 per 10 working-age people. Meanwhile, the child-dependency ratio is expected to stay virtually unchanged. Total population will reflect these dynamics: The SEE6 population peaked in 1990 at an estimated 19.9 million. Then the effects of falling fertility started to kick in, as in Eastern Europe, during the time when countries in the region were beginning to transition to market economies. By 2015, population in the region had already fallen to 18.3 million and is expected to shrink by another 25 percent or so by 2065 (Figure 4).
Fertility rates that are below replacement levels are the main driver of population aging and decline in the SEE6. From 3.9 children per woman in 1965, the total SEE6 total fertility rate went down in 50 years by almost two-thirds, to an average of 1.6, comparable to EU15 levels. In the next 50 years, total fertility is projected to increase moderately across Europe, but the SEE6 average is expected to stay below both the EU and replacement levels. As a result, while low fertility will continue to be the main factor driving population aging in the SEE6, emigration and high mortality rates relative to the EU15 would also play a role.

Emigration contributes to declining working-age populations in the SEE6. Between 1990 and 2015 emigration has accounted for an average 3.2 percent loss, every five years, of the SEE6 population. One reason for this loss was displacements due to the war. However, it was also explained by the region’s incomplete transition to market economies, its high unemployment, and lower living standards relative to neighboring EU countries, which motivated better-educated individuals of working-age to look for employment opportunities elsewhere (Figures 7 and 8).
SEE6 demographics are expected to continue to be challenged by emigration, though not as much as in the past (Figure 9). Between 2015 and 2065, emigration is projected to reduce the SEE6 population by 0.6 percent.

**Improvements in life expectancy are not enough to compensate for the effects of low fertility and emigration in the SEE6.** Historically, the SEE6, like the rest of the world, enjoyed a reduction in mortality rates across age groups. In 1965 the SEE6 infant mortality rate was a staggering 70 per 1,000 live births but it plunged to 8 in 2015. As a result, mortality rates for the population aged 14 and less fell dramatically. The SEE6 lost 3.2 percent of its children to mortality between 1965 and 1970 but over the following 50 years the number declined to 0.4 percent (Figure 10). Similarly, the mortality rate for those aged 65 and over dropped from 35 percent to 29.1 percent. Life expectancy across the region reflected these improvements, with the regional average increasing from 63.8 in 1965 to 75.9 in 2015 (Figure 11). Technological advances and increasing incomes are expected to further improve mortality rates in the future. For instance, by 2065 the SEE6 infant mortality rate is expected to be down to 3.7 percent, mortality for children to 0.2 percent, and mortality of the elderly to 22.4 percent. As a result, average life expectancy across the SEE6 is projected to rise to 83.2 by 2065. Though these would be significant improvements, opportunities for further improvement still exist, particularly relative to the EU15 and given low fertility rates. Moreover, despite improvements, the contribution of mortality to population decline is likely to be larger in the future than it has been historically because mortality rates for the elderly are much higher than for those younger. In Montenegro, for instance, overall mortalities are projected to reduce the population by an average 7 percent, every five years, between 2015 and 2065 despite strides in reducing infant mortalities.
Projected demographic dynamics show some variation across the SEE6. Based on a combination of demographic indicators, over the next 50 years Bosnia and Herzegovina, already with the highest median age in the region, is likely to be affected the most from adverse demographic conditions. The median age there is expected to rise from 41.5 in 2015 to 53.9 in 2065; and with lower fertility rates relative to the rest of the SEE6, the population of Bosnia and Herzegovina is projected to decline the most, by 30.3 percent, followed by Serbia, which will lose 24.9 percent of its population. At a projected 7.1 per 10 working-age individuals (Figure 12), by 2065, Bosnia and Herzegovina’s old-age dependency ratio will also be the highest in the region (Figure 13). On the other hand, Montenegro is projected to have the lowest old-age dependency ratio. The demographic profiles of Serbia and Albania are expected to be particularly challenged by emigration.

**Figure 12: Overall Dependency Ratio, 2015–65**

<table>
<thead>
<tr>
<th></th>
<th>ALB</th>
<th>BIH</th>
<th>MKD</th>
<th>MNE</th>
<th>SRB</th>
<th>SEE6</th>
<th>EU15</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>0.5</td>
<td>1.0</td>
<td>1.5</td>
<td>2.0</td>
<td>2.5</td>
<td>2.0</td>
<td>2.5</td>
</tr>
<tr>
<td>2065</td>
<td>2.5</td>
<td>2.0</td>
<td>1.5</td>
<td>1.0</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Source: UN 2015.

**Figure 13: Old-Age Dependents, 2015–65**

<table>
<thead>
<tr>
<th></th>
<th>ALB</th>
<th>BIH</th>
<th>MKD</th>
<th>MNE</th>
<th>SRB</th>
<th>SEE6</th>
<th>EU15</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>2065</td>
<td>7</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

Source: UN 2015.
The Impact of Aging on Economic Growth

III. Effects of an Aging Population on Economic Growth

Population aging may affect economic growth through its impact on the factors of production and productivity. As populations age, the working-age population declines which would be particularly significant in economies where aging is driven by falling fertility or emigration rather than longer life expectancy. Aging populations are usually associated with lower productivity due not only to lower cognitive capacity of older individuals, but also to there being less space for productivity-enhancing investments (World Bank 2013). In the absence of behavioral or policy changes in the current status quo, population aging could reduce productive capacity below what is needed to support the consumption of the whole population without any deterioration in the living standards.

Labor force participation rates are already significantly lower in the SEE6 than in regional peers (Figure 14). Despite some variations across the region, the historical pace of labor market adjustment suggests that the SEE6 labor markets do not respond vigorously to growth and suffer from structural challenges. Since the transition, the SEE6 has suffered from chronically high unemployment, particularly among the youth, extending to long-term unemployment, and inactivity in domestic labor markets. In Bosnia and Herzegovina, for instance, more than half of the working-age individuals are not active in the labor market. Of those who are, 25 percent are not employed. As a result, the growth dividend from labor accumulation in the SEE6 has been low.

Figure 14: Labor Force Participation Rates, 2014

![Figure 14: Labor Force Participation Rates, 2014](image1)

Source: ILO 2015, national statistical offices, and UN 2015.

Figure 15: Projected Labor Force Participation Rates, 2015–65

![Figure 15: Projected Labor Force Participation Rates, 2015–65](image2)

Source: ILO 2015, national statistical offices, and UN 2015.

Note: Based on ILO projections of activity rates by age groups for 2010.
In the absence of policy responses or other behavioral adjustments, labor force participation is expected to decline further in the SEE6 due to adverse demographic dynamics. At 43.7 percent in 2014, Bosnia and Herzegovina had the second lowest activity rate in the region, just slightly ahead of Kosovo. Population aging would reduce the labor force participation rate in Bosnia and Herzegovina to 33.2 percent by 2065 due purely to projected change in the age structure of the population, even though activity rates by age group remain constant. Using the same methodology, the change in FYR Macedonia’s labor force is projected to be as dramatic, with activity declining from 55.5 percent in 2015 to 43.2 in 2065 (Figure 15). Labor force participation in Serbia, which already has the second-oldest population in the region, is projected to drop from 49.7 to 42.6 percent.

If all else remains constant, an aging population may reduce growth in average annual per capita incomes in the SEE6 by 0.4 percentage points in the next 50 years. A basic decomposition exercise (Box 1) based on the UN population projections shows that unless there are behavioral responses and related changes in labor productivity, demographic change affects income growth not only by increasing dependency ratios but also by pushing down labor force participation rates as the median age goes up. The exercise found that in the next 50 years annual per capita

Box 1. Decomposition of Per Capita Output Growth Decomposed

Per capita output can be written as:

\[
\frac{Y_t}{P_t} = \frac{Y_t}{L_t} + \frac{L_t}{P_t^{15+}} + \frac{P_t^{15+}}{P_t}
\]

where, \(Y_t\) is real GDP measured in constant local currency units, \(P_t\) refers to total population, \(L_t^{15+}\) is the population aged 15 and over, and \(L_t\) shows employment of those among population aged 15 and over, all in year \(t\). The log transformation of the above identity becomes:

\[
\ln \left( \frac{Y_t}{P_t} \right) = \ln \left( \frac{Y_t}{L_t} \right) + \ln \left( \frac{L_t}{P_t^{15+}} \right) + \ln \left( \frac{P_t^{15+}}{P_t} \right)
\]

The first difference gives per capita output growth:

\[
g_{t+1} = \ln \left( \frac{Y_{t+1}}{P_{t+1}} \right) - \ln \left( \frac{Y_t}{P_t} \right)
\]

\[
= \left[ \ln \left( \frac{Y_{t+1}}{L_{t+1}} \right) - \ln \left( \frac{Y_t}{L_t} \right) \right] + \left[ \ln \left( \frac{L_{t+1}}{P_{t+1}^{15+}} \right) - \ln \left( \frac{L_t}{P_t^{15+}} \right) \right] + \left[ \ln \left( \frac{P_{t+1}^{15+}}{P_{t+1}} \right) - \ln \left( \frac{P_t^{15+}}{P_t} \right) \right]
\]

The first term on the right-hand side shows growth in labor productivity. The second term shows the change in employment rate, and the third term indicates change in those of working-age population as a share of total population. Assuming that unemployment rates remain constant, the second terms would also show the change in the labor force participation rate.

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Footnote:

5 A reduced labor supply may increase real wages, which may bring about an adjustment in the labor market, with a likely increase in labor force participation.
output growth in the SEE6 economies is expected to decline by almost 0.4 percentage points on average due to adverse demographic dynamics in the absence of policy and behavioral changes that improve productivity or conditions for labor force activity and employment. Lower labor force participation will contribute a projected 0.5 percentage points; the change in dependency ratios will have a positive but minor contribution of 0.1 percentage points, due primarily to increasing fertility in Albania between 2010 and 2015 with latent positive effects on the working-age population (Figure 16). The same demographic dynamics would also imply a one-third fall in the income per capita level the SEE6 would have reached under the same productivity conditions but with the demographic conditions that prevailed in the last 50 years (Figure 17). This would be equivalent to 0.7 percentage point reduction in the average annual growth. The regional effects are expected to be most significant over the 50-year projection horizon in Bosnia and Herzegovina and least pronounced in Serbia (Figures 18 and 19).

Figure 16: Population Aging and Real Per Capita GDP Growth, 2015–65

![Figure 16: Population Aging and Real Per Capita GDP Growth, 2015–65](image)


Figure 17: Real Per Capita GDP, 2015–65

![Figure 17: Real Per Capita GDP, 2015–65](image)


Note: The blue line represents same productivity conditions as the red line but the demographic profile of the period 1965-2015. The red line is based the projected demographic profile for 2015-65.

Figure 18: Population Aging and Real Per Capita GDP Growth, Bosnia and Herzegovina, 2015–65

![Figure 18: Population Aging and Real Per Capita GDP Growth, Bosnia and Herzegovina, 2015–65](image)


Figure 19: Population Aging and Real Per Capita GDP Growth, Serbia, 2015–65

![Figure 19: Population Aging and Real Per Capita GDP Growth, Serbia, 2015–65](image)

All else is unlikely to remain unchanged. Demographic change is expected to affect labor productivity even though the relationship is highly complex. On the one hand, an older labor force is associated with lower physical and cognitive productivity but higher productivity in jobs that require advanced management, communication, and conflict resolution skills (World Bank 2013). Declining populations may translate to lower population densities, reducing productivity-enhancing agglomeration effects. Increased demand for age-related public expenditures such as pensions, health, and long-term care may reduce the fiscal space for productivity-enhancing expenditures. On the other hand, reduced labor supply may push up real wages, and as a result an adjustment may occur in the form of a likely increase in labor force participation rates. Declining working-age and student populations may open up opportunities for more capital-intensive production and better quality education. Given the difficulty of estimating such effects fully, the simulation exercise above is illustrative, and provide an upper bound estimate.

Although aging brings many challenges, it also creates opportunities. For instance, even without any change in savings-investment behavior, the increased availability of capital per worker created by the denominator effect may improve labor productivity. Firms may also invest in technologies and workplace adjustments that increase the productivity of older workers. Individuals may save more in anticipation of higher expenditures as they age. They may also invest more on their education and health, leading to longer and more productive work lives, and hence higher quality of human capital. In fact, empirical work using data from Europe shows that solely increasing labor force participation rates may not be enough to counterbalance the effect of aging on income growth; increasing investment in human capital and educational attainment complements labor force participation hikes with a notably stronger positive effect on income growth (Crespo Cuaresma et al, 2015). These opportunities, however, may not be equally available to everyone, and aging societies may incur the risk of becoming polarized. For instance, earnings and saving gaps between skilled and unskilled individuals tend to widen with age. Increasingly, the entire old population may be divided into two groups: on usually poorer and less well-educated who suffer from worse health, shorter life spans, and lower saving; and another group that is still active, with large accumulated assets, and benefitting from increased longevity (Bussolo, et al. 2015). Finally, the political economy cannot be underestimated. Since older individuals are more likely to support the status quo (for example, to vote against pension reforms or against more spending on education), aging societies may encounter some opposition to the reform efforts.

6 The effects of population aging on public finances merit deep analysis and are beyond the scope of this note.
IV. Policies to Seize Opportunities and Address Challenges of an Aging Population

Comprehensive policies that also facilitate behavioral responses in the society can help seize the opportunities and mitigate the adverse effects of aging. If policy makers meet the challenges, seize the opportunities, facilitate behavioral adjustments, and address distributional impacts, the SEE6 countries may experience a markedly different reality, where people live longer, healthier, more active, and more prosperous lives. This would require a comprehensive policy agenda based on eight pillars:

1. Supporting increases in fertility
2. Promoting healthy aging
3. Increasing economic returns from migration
4. Increasing labor force participation
5. Improving labor productivity
6. Addressing poverty and inequality
7. Enhancing fiscal sustainability
8. Reducing political resistance to reforms

Figure 20: Average Preparedness Score

Source: Bussolo, Koettl, and Sinnott 2015.
An assessment based on these eight pillars shows that the SEE6 countries are not fully prepared for the aging of their populations. Bosnia and Herzegovina as well as Serbia are in a more challenging position than the rest of the SEE6 not only because they are expected to age faster but also because they perform less well on these policy dimensions (Figure 20). Still, in all of the SEE6 countries there is significant room to adopt policies to benefit from the opportunities aging brings and to minimize its adverse effects.

The SEE6 reform agenda is hefty. However, the policies and how they are prioritized would be influenced by the unique circumstances of each country. A description of country-by-country policy packages is beyond the scope of this regional report, but some common policy options can be highlighted.

Policies to support increases in fertility should take into account the economic conditions of the next generations. Improving economic prospects would make policies that target fertility rates more effective. Beyond expanding economic opportunities generally, experience from some high-income countries shows that the right incentives can encourage a rebound of fertility to replacement levels. For instance, in France, provision of early child care, short maternity leave with earnings-related pay, and extended financial support after childbirth were effective in raising fertility rates. Iceland has two main policies that contribute to high labor participation rates among women and fertility rates above replacement level: (1) Childbirth leave policies cover men as well as women, and men’s benefits are among the most generous among to the OECD countries (Bussolo, et al. 2015). (2) Child care in Iceland covers more than 90 percent of 3- to 5-year olds, and parents pay only about 30 percent of the real cost. Other options, such as birth grants or other financial transfers at childbirth and long maternity leaves, seem to be less effective (Eydal and Ólafsson 2008).

Prevention and improved long-term care can support healthy aging. For instance, effective measures to prevent cardiovascular disease are relatively inexpensive. Indeed, the primary prevention of disease through decreasing tobacco use and managing such other risk factors as high blood pressure, dietary habits, alcohol use, and obesity has accounted for about half the benefits seen in the West, and improved treatment for the other half (Smith and Nguyen 2013). Another example of preventive care in the West is that older people are advised to have an annual influenza vaccination because they are more at risk of complications from flu than younger people. Vaccination has proven to be more cost-effective than treating complications from influenza (Peasah et al. 2013). Across the SEE6, long-term care is mainly provided informally by family members, since there is a dearth of formal care. Switching from informal to hospital-based care is also not a long-term solution because of the cost. SEE6 countries today are not prepared for high levels of old-age dependency and disability. One way to contain cost is to adopt a more comprehensive system with levels of care ranging from home-based to community-based to institutional, to respond to a wide variety of needs, with appropriate cost-sharing.
Economic returns to migration could be increased. Today, the SEE6 countries have negative net immigration rates. Rather than controlling outward migration, the region's economies might adopt policies to maximize gains from migration and minimize its negative effects on human capital. For example, facilitating economic contacts with the diaspora can increase the benefits of emigration for the countries of origin through trade, investment, and remittances.

Healthy aging may lead to longer working lives, less use of disability and unemployment benefits, and better labor market outcomes. Iceland, for instance, has the highest employment rates for older people in Europe and among OECD countries (Bussolo, et al. 2015) due partly to its pension system. Iceland's pension system has lower benefits for workers who retire early, a high retirement age (67 for both men and women for the past 30 years), and strong incentives to work even longer. There is no specific early retirement scheme, and unemployment and disability benefits are carefully managed to avoid abuse, such as using them as a route to early retirement. Training rates for older workers are among the highest in the world: 40 percent of workers aged 55–64 have participated in informal education. Employers also have favorable attitudes toward older workers. Finally, there is no formal regulation of part-time work, and a general provision in collective agreements requires that part-time be treated equally to full-time workers pro rata. Another example is Germany, where three different six- to eight-month public training programs for the unemployed resulted in raising the probabilities of employment by 5–7 percentage points, depending on the type of training, and the earnings of men aged 50+ (Rinne at al. 2010).

Supporting entrepreneurship at an advanced age can also facilitate the participation of older workers in the labor market. Although entrepreneurship tends to decline with age (Bussolo at al. 2015), the relationship seen between education and old-age entrepreneurship may suggest a role for skills training, although more research is required to understand which skills are needed. Another largely unexamined but promising idea is that old age and youth are complements in entrepreneurship, with age contributing experience, managerial acumen, and market knowledge. This suggests that promoting mixed-age entrepreneurial teams could capitalize on the complementary skills of the old and the young, with the older partner acting as a mentor.

Firms can also help improve the productivity of older workers. Some effective mechanisms are workplace adjustments, reassignment to age-specific tasks, mixed-age working teams, reduced work time, and well-designed lifelong learning. An experiment at the BMW Dingolfing plant found that interventions such as physical changes in the workplace, adjustments in work hours, and exercises with a physiotherapist are low-cost but effective ways to raise the productivity of older workers (Schwarz et al. 2014). As for lifelong learning, changes in the demand for skills and rapid population aging in the SEE6 underscore the need to put in place effective adult education and training systems.
So far, the SEE6 have not exploited the benefits of adult learning. Participation rates in continuing education in the region are much lower than in the EU15. Moving forward, countries need to explore mechanisms for boosting lifelong learning on both the supply and the demand sides. In particular, they need to enhance the relevance of training and capitalize on the skills that are the comparative advantage of older workers. As people pass middle age, the brain gets better at recognizing the central idea and the big picture; if kept in good shape, it can even find solutions faster than a younger brain. Experience and knowledge have a much more powerful role in how older workers learn new skills than in younger individuals. Promising strategies to train older workers include establishing clear links with employers beforehand and competence-based training that builds on recognition of prior learning.

Supporting an aging population requires more resources for pensions, health care, and long-term care, which is more challenging when the working-age population is shrinking. Examples from advanced Europe show that this challenge can be manageable given swift and bold action as part of a broader policy to balance aging. The rules governing pension systems matter greatly to the size of the gap between payroll contributions and total pension spending, which often has to be filled by public revenues. Without policy changes, pension spending would rise significantly if countries covered all priorities: ensuring that all elderly receive at least a basic benefit to keep them from falling into poverty, protecting the disabled and survivors, and providing additional retirement income for contributors. The biggest savings can be achieved by reducing incentives for early retirement and making it attractive to work beyond 65, complemented by education and health policies that promote healthy aging. Other measures that would reduce costs include means-testing the basic (noncontributory) pension benefit, ensuring that disability benefits are not used simply as a means to achieve early retirement, and reducing the size of noncontributory and survivor benefits. There appears to be an aging effect in the adoption of health and education policies with the younger voters more likely to vote in favor. Therefore, encouraging participation of younger voters would be particularly important to achieve policy objectives in these areas.

In all those areas, it is important to look beyond aggregate numbers and address the poverty and inequality that exist in the SEE6 and that may worsen as the population ages. Current levels of informality are already high across the SEE6. A rising share of the elderly, with a weak social benefit system, may aggravate the situation in the region’s economies if they cannot participate in the formal labor markets. Groups with lower income and less education may be at a significant disadvantage in seizing opportunities and meeting challenges of aging. Weaker health status and higher mortality rates affect their lifetime earnings and the savings they accumulate. In this respect, pension reforms should particularly recognize the importance of social safety nets for the elderly while taking into account their costs. Health care and long-term care reforms to improve healthy life expectancy require special attention to the most vulnerable. Inequality in labor income also underlines the importance of higher-quality education throughout society, especially for disadvantaged children and low-skilled workers in routine jobs or manual labor where skills and demand both quickly decline with age.
V. References


