What's Next for Old Europe?

AG!NG

AGING WITH GROWTH IN CENTRAL EUROPE AND THE BALTICS

WORLD BANK GROUP

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Country Classification Utilized in Report

The report focuses on the following countries of Central Europe and the Baltics: Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia. These countries are grouped together as they are aging differently to the older EU member states of Western Europe, labeled the EU-15 countries. The EU-15 group of member states includes all countries that were in the European Union prior to 2004, namely the following fifteen countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

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The research program resulted in the following background papers. These are:

- Nina Arnhold, Jaroslaw Gorniak and Vitus Puttmann. 2015. "Lifelong Learning for Aging Societies: Policy Options for Poland." The World Bank.
- Jesús Crespo Cuaresma, Elke Loichinger and Gallina Andronova Vincelette. 2014. "Aging Workforce in Europe: A Sector-Level Investigation." The World Bank.
- Roberta Gatti, Karolina Goraus and Paulina Ewa Holda. 2015. "Active Aging in Poland: Current Trends and Prospects for Labor Market Activity Among the 50 Plus." The World Bank.
- Stanisława Golinowska, Ewa Kocot and Agnieszka Sowa. 2014. "Ageing, Health Expenditure and Health Policy Review for Poland." The World Bank.
- Angela Luci-Greulich, Aurélien Dasre and Ceren Inan. 2014. "Fertility in Turkey, Bulgaria and Romania: How to deal with a potential low-fertility-trap?" The World Bank.
- Angela Luci-Greulich, Olivier Thévenon and Mathilde Guergoat-Larivière. 2013. "Starting or Enlarging Families? The Determinants of Low Fertility in Europe." The World Bank.
- Carola Gruen. 2015. "Poland: Profile of the 50+ Population." The World Bank.
- Mihails Hazans. 2015. "Migration Experience of Poland and the Baltic Countries in the Context of Economic Crisis." The World Bank.
- Kate Mandeville and Emily Sinnott. 2014. "Healthier Lives in Aging Societies." The World Bank.
- Uldis Mitenbergs, Juris Bārzdiņš, Māris Taube, Rita Konstante, and Sigita Rozentāle. 2014. "Health Policy for Older Adults with Special Attention to Elderly Patients and Practices in Discharging Older Acute Care Patients: Exploratory Case Study for Latvia." The World Bank.

The report cites relevant background papers where it draws from them. The papers are available at www.worldbank.org/content/dam/Worldbank/Publications/ECA/aging-europe-background-papers.zip

Report in Brief

Europe is growing older, presenting both challenges and opportunities

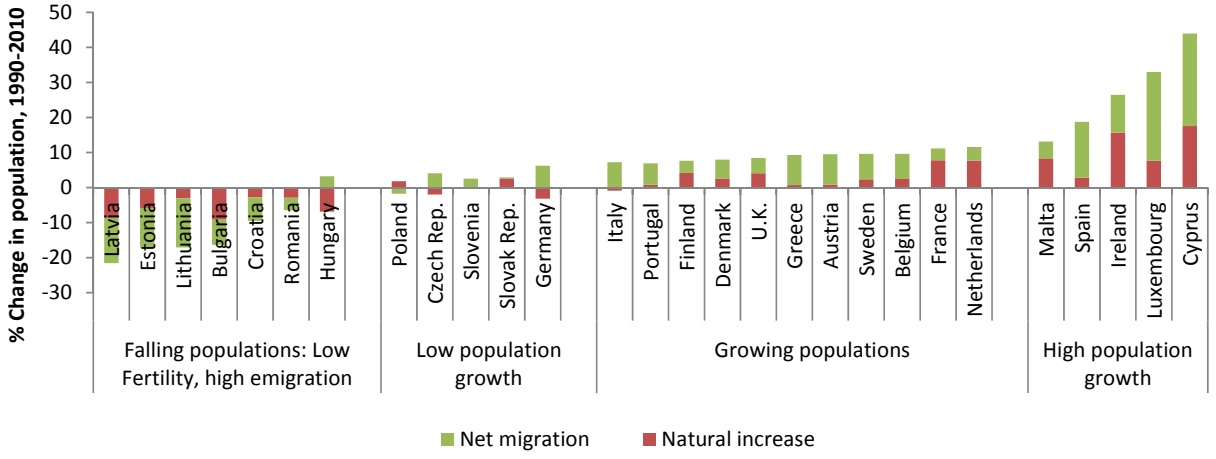
Europe's population is growing older. People are living longer and healthier lives. Wealthier European Union (EU) countries have enjoyed near-universal access to better health care and seen public health promotion and lifestyle changes that have reduced the morbidity and mortality due to heart disease, an effort known as the "cardiovascular revolution". As a result the EU-15 countries enjoy an average life expectancy of 81 years. At the same time, EU-15 countries have also witnessed a drop in fertility since the 1970s, though recently fertility has stabilized or re-increased in a number of countries.

Central Europe and the Baltic countries are aging more rapidly and for different reasons

Within the EU, Central Europe and the Baltics are aging differently. Fertility has in general fallen to lower levels than in the EU-15, in a number of countries fertility rates are as low as 1.3 or 1.4 children per woman. Increases in longevity are relatively low, however. Average life expectancy is below EU-15 and for most the gap is between four and seven years. Much of the lower longevity is explained by the higher mortality amongst the poor. In addition, the significant outward migration of younger populations is considerably accelerating the aging process and has resulted in a fall in populations in some countries.

Low Fertility and High Emigration Have Led to Falling or Stagnating Populations in Central Europe and the Baltics

Cumulative population change 1990-2010, in percent



Notes: The natural increase in the population is defined as births minus deaths. Net migration is the net total of migrants during the period, that is, the total number of immigrants less the number of emigrants.
Source: Based on United Nations' Population Division (2013).

Aging without policy changes will present challenges

With only modest increases in longevity and declines in fertility and outmigration resulting in shrinking younger cohorts, countries in Central Europe and the Baltics are can expect to face several economic and social challenges in the absence of adaptive policy responses. Declines in the size of the labor force could present risks to economic growth; fiscal pressures could strain countries' efforts to provide adequate services as well as income security to their aging populations; firms could lose out on productivity gains if they fail to adapt to an aging workforce. Provided countries can put policies in place that allow them to address these challenges, aging Central European and Baltic countries can continue to realize gains in economic output and welfare, and converge to high EU income levels. This outcome is by no means automatic. It will require early and coordinated policy initiatives covering labor markets, healthcare, education, pensions, long-term care, migration and family policy.

How can Central Europe and the Baltic States respond to their aging challenge?

The solution lies in investing in people to enable them to age actively and healthily—with scope for action at the level of governments, firms and individuals. Specifically:

Productive aging

- *Productive aging:* Providing more flexible work arrangements, including increased part-time work, both for workers transitioning to retirement and parents of young children, will be important enabling longer working lives for an aging workforce. Older workers are also more likely to remain in the labor force when early retirement options are limited. Moreover, creating affordable childcare and eldercare options can help women stay in work. Together, such measures can help compensate for fewer younger workers by increasing labor force participation at all ages, but particularly for women and older workers (45+). If successful this will keep the ratio of active to inactive in the population relatively stable. More workers will bring higher growth; more fiscal revenues and less expenditures; and more life-time wealth accumulation and less poverty. The Czech Republic, Estonia and Latvia already have achieved high labor force participation among older adults.
- *Firm and productivity:* Enhancing the productivity of the aging labor force will be important to sustaining growth. While flexibility is a concern as older workers are less likely to move across firms, sectors and geographically, firm-level changes in production techniques have been shown to yield dividends for enhancing the productivity of older workers. Much more can be done to implement such measures, which require more experimentation and dissemination. Increasing training at all ages will be important.
- *Education and skills:* Investing in skills for longer and more productive working lives is also critical. The smaller cohort of younger people entering the school system creates opportunities to improve the quality of education. Efforts should start from early childhood education onwards. Young people in Estonia and Poland perform the most strongly in the OECD's Program for International Student Assessment.

Healthy aging

- *Achieving longer, healthier lives:* A greater focus by countries' health systems on tackling non-communicable diseases through disease prevention, detection and treatment will be important to ensuring healthy aging. Individuals, especially men, are challenged with making lifestyle changes to reduce risky behaviors such as smoking and alcohol use. Increasing—healthy—life expectancy would not only improve quality of life, but enable people to work longer and reduce the health and long-term costs associated with sickness. Health systems need to target interventions to reduce health inequalities, as the worse health outcomes of the least well off explain a large part of poorer health outcomes. Slovenia performs strongly in terms of raising longevity to EU-15 levels.

Welfare, spending prioritization and migration

- *Welfare and pensions:* Aging creates pressures on public spending. Unlike in the EU-15, middle-aged and older people have not managed to accumulate much wealth and rely on labor and pension income. Future projections are for pension coverage and adequacy to fall substantially in some countries, leading to increased vulnerability to poverty for older people. Policies to expand minimum income schemes are likely to form part of the solution for older age groups, along with measures to encourage increased household savings for younger people.
- *Managing age-related spending pressures*: More broadly, ensuring adequate services in aging societies will add to countries' fiscal pressures. As a result, prioritizing, increasing efficiency and making trade-offs in public spending will be necessary to control aging-related spending, such as in pensions and long-term care, and also more general cost pressures that are likely to arise in sectors such as health. There is also a case of shifting social security financing from labor taxation to general revenue financing, where labor taxes are high and social security taxes cannot meet all aging-related costs.
- *A return to balanced demographics:* Ultimately, the countries of Central Europe and the Baltics will need to achieve sustainable levels of fertility and net migration to return to a more balanced age structure. Some Western European countries were able to re-increase fertility rates, and the key to their success seems to be a reconciliation of family and career goals for women. However, for the less rich Central European and Baltic countries the priority is to raise incomes so that people can afford to have the two children they say they want. In any case, a rise in fertility is a long-term solution as
- Outward migration of a young and relatively well-educated cohort brings its own challenges. It can also represent an opportunity as the diaspora can form an important network to encourage export opportunities, remittances can also be an important source of income and seed capital for new businesses, and returning diaspora can bring invaluable experience, knowledge and networks. Policies encouraging immigration into Central Europe and the Baltics can contribute.

So what's next?

Countries in Central Europe and the Baltics have made significant progress on many of the areas identified above. But more is needed. While the remaining challenges are clear and certainly not insurmountable, they will require sustained measures on behalf of governments, employers and individuals. Having a wide debate on reform options is critical to building consensus on the issues, such as raising labor force participation, reducing health inequality, providing adequate long-term care and old-age income security.

Policy Priorities for Central Europe and Baltics Aging Economies

Employment/Productivity Challenge

Higher	Medium	Lower
Relatively low labor force participation (LFP), including for older adults (compared to EU-28); Large gender gap in retirement ages; Comparatively poor performance on PISA (Bulgaria and Romania).	Higher than average gap in labor force participation, including of older adults (relative to EU-28); Small and closing gender gap in retirement ages; Slovak Rep. performance below average on PISA.	LFP generally high and a relatively large share of older adults are active; No or small gender gap in retirement ages; Higher than average performance on PISA (except Lithuania).
Support increased LFP of 45+ and women; Re-design early retirement schemes; Equalize retirement ages; Invest in human capital of upcoming cohorts.	Support increased LFP of 45+ and women; Focus on increasing employability of older job-seekers and maintaining productivity of older workers; Raise education performance of young to highest levels.	Focus on targeted interventions to decrease within-country inequality of labor market outcomes for disadvantaged groups across the lifespan.
Bulgaria, Croatia, Hungary, Romania	**Poland, Slovak Republic, Slovenia**	**Czech Republic, Estonia, Latvia, Lithuania**

Health Challenge

Higher	Medium	Lower
Low life expectancy gains--a large gap remains with the EU-15 (5-7 years).	Life expectancy gap remains with the EU-15 (3-4 year gap).	Life expectancy is close to the EU-15 average.
Target risky behaviors and detect/treat diseases of the circulatory system; Reduce excess male mortality and health inequality	Target risky behaviors and detect/treat diseases of the circulatory system; Reduce inequality	Convergence almost achieved; challenge is to increase healthy life years
Bulgaria, Estonia, Hungary, Latvia, Lithuania, Romania, Slovak Republic	**Croatia, Czech Republic, Poland**	**Slovenia**

Aging-Related Public Spending Pressures

Higher Spending Greater than 20% of GDP	Medium Spending 15-20% of GDP	Lower Spending Less than 15% of GDP
Richer EU-15 economies where pensions, health and long-term care outlays already high and set to grow.	Mix of countries with low pension spending or low public health costs or low long-term care provision. Projected growth varies-- Poland to fall to among lowest in EU whereas Slovenia to become the biggest spender (explained by pension costs).	Mainly less rich EU economies with smaller public health and long-term care provision. Most projected to remain low spenders. Exception is the Slovak Republic, which will join higher spending Central European neighbors (given pension rise).
	Spending pressures likely to grow (pensions, health and long-term care): Identify priorities in age-related spending; Plan for adequate coverage and levels of pension benefits while ensuring pension system sustainability.	
	Croatia, Czech Republic, Hungary, Poland, Slovenia	**Bulgaria, Estonia, Latvia, Lithuania, Romania, Slovak Republic**

Migration and Family Policy Priorities

All Countries
Increased provision of childcare; Flexible workplace practices to support families; Progressive tax-benefit policies to support families; Immigration policy to attract and integrate migrants into the labor market; Foster the diaspora's engagement in economic and social development and expand "virtual borders".

1. How Central Europe and the Baltics is Aging

1.1 Central Europe and the Baltic Aging Differently than the Rest of the EU

Europe's population is growing older. People are living longer and healthier lives. Wealthier countries have enjoyed near-universal access to better health care and seen public health promotion and lifestyle changes that have reduced morbidity and mortality due to heart disease, an effort known as the "cardiovascular revolution". As a result the EU-15 countries[1] enjoy an average life expectancy of 81 years. At the same time, EU-15 countries have also witnessed a drop in fertility since the 1970s, although more recently fertility rates have stabilized or re-increased in a number of countries.

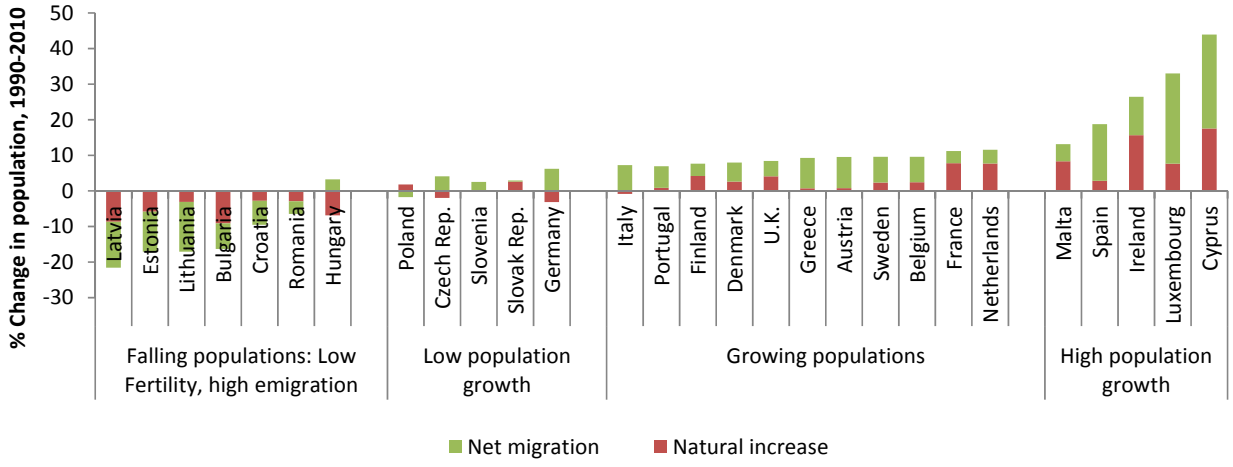
Central European and Baltic countries are aging for different reasons compared to the rest of the European Union (EU). Fertility has in general fallen to lower levels than in the EU-15; in a number of countries fertility rates have fallen as low as 1.3 children per woman. Increases in longevity are relatively low, however. Average life expectancy is below EU-15 and for most of these countries the gap is between four and seven years. Much of the lower longevity is explained by higher mortality amongst the poor. In addition, the significant outward migration flows of younger populations are considerably accelerating the aging process and have resulted in populations also shrinking. Aging has been more rapid than in the EU-15. The share of the population aged 65 and over increased by just over a third in Central Europe and the Baltics over 1990-2010 compared to a rise of 24 percent in the EU-15.

The countries of Central Europe and the Baltics stand out within the EU for their declining or slow-growing populations. In seven Central European and Baltic countries, populations have decreased since 1990 (Figure 1). The remaining countries registered low population growth, from 0.1 percent in Poland to 3 percent in the Slovak Republic. Fertility played a large role in Central Europe and the Baltics, rapidly decreasing from just below the replacement rate at 1.9 children per woman in 1990 to 1.5 in 2012. Deaths outnumbered births in all countries except Poland and the Slovak Republic over 1990-2010. But beyond the natural decline in the population, a number of these EU countries experienced high rates of emigration. Emigration sped up following EU accession and the 2008/09 economic crisis provided further impetus for younger segments of the population to leave. By contrast, the other EU countries—with the exception of Germany—had population growth ranging from 6.5 percent to 44 percent over 1990-2010. Fertility rates have remained close to replacement in some EU-15 countries and almost all countries benefitted from immigration, certain countries like Ireland and Spain substantially so, resulting in growth in their working-age population.

[1] Labeled the EU-15 countries, this group of member states includes all countries that were in the European Union prior to 2004, namely the following fifteen countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

Figure 1. Low fertility and high emigration have led to falling or stagnating populations in Central Europe and the Baltics

Cumulative population change 1990-2010, in percent



Notes: The natural increase in the population is defined as births minus deaths. Net migration is the net total of migrants during the period, that is, the total number of immigrants less the number of emigrants.
Source: World Bank calculations based on United Nations Population Division (2013).

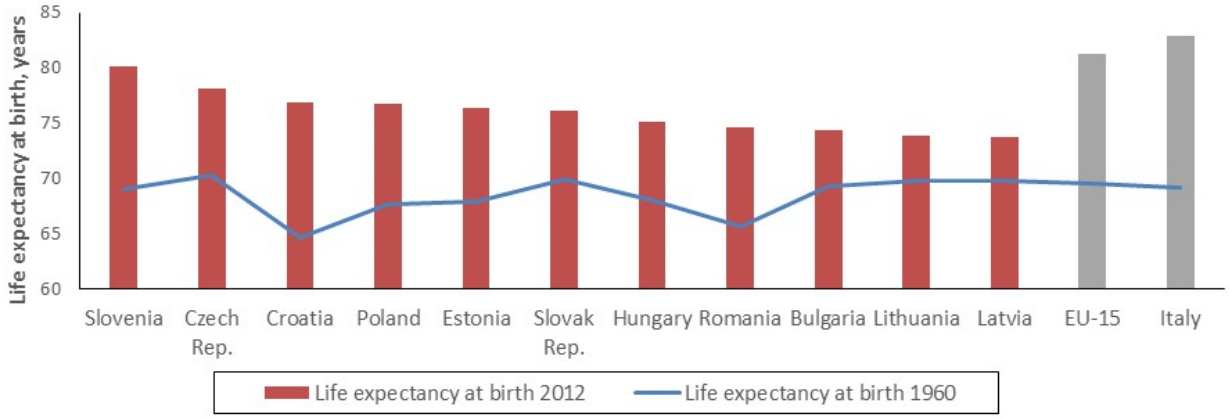
1.2 Three Factors Explain How Central Europe and the Baltics is Aging

Whereas demographic aging has been accompanied by large gains in life expectancy in the EU-15, in Central Europe and the Baltics aging has occurred without the same increase in longevity. There is a large gap in life expectancy between Central Europe and the Baltics and the EU-15, and men in particular are expected to live for a much shorter time in many Central European and the Baltic countries. Since the Second World War, the largest gains in life expectancy were seen from the early 1950s to the late 1960s, when life expectancy at birth increased from 63 to 70 years in Central Europe and the Baltics.[2] With the exception of Slovenia and to a certain extent Croatia and the Czech Republic, life expectancy then has stagnated since the 1960s in the Baltics.[3] Even though life expectancy gains picked up from the mid-1990s onwards, people can expect to live five years less on average in the Central European and Baltic countries than in the rest of the EU (Figure 2).

[2] Based on United Nations' Population Division (2013).
[3] Slovenia was the exception where gains were at or close to the five years experienced on average in the EU-15. Source: World Bank's *World Development Indicators*.

Figure 2. Italy gained 14 years of life expectancy since 1960 and Latvia just four years

Life expectancy gains lag behind the EU-15



Source: World Bank calculations based on *World Bank's World Development Indicators.*

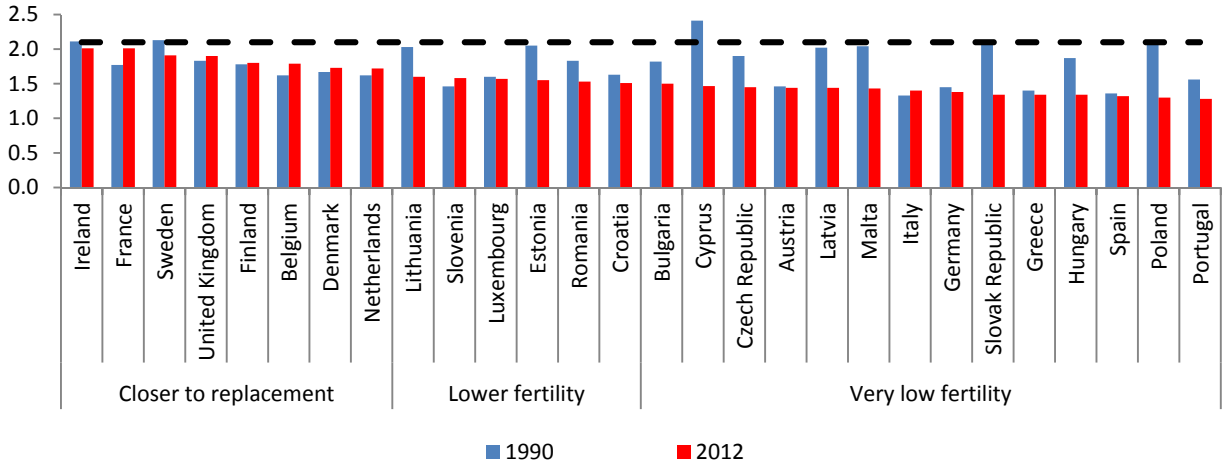
The sharp fall in fertility since 1990 has been the major driver of demographic change in Central Europe and the Baltics. Fertility was relatively stable during the 1970s and 1980s, and began to fall dramatically by the mid-1990s. From close to replacement rate fertility in the early 1990s, Central Europe and the Baltics joined the group of countries with lowest fertility by 2002, when fertility rates were around 1.3 in many countries. Despite a recent small upsurge in many countries, Central Europe and the Baltics registered comparatively low fertility rates in 2012 (with a total fertility rate of 1.6 or below) (Figure 3). Lithuania and Slovenia are at the upper end of the group with a total fertility rate of 1.6, while the Slovak Republic, Hungary and Poland fall into the group with the lowest fertility rates in the EU—at around 1.3. In the EU-15, there is a group of higher fertility countries—Belgium, Denmark, Finland, France, Ireland, the Netherlands, Sweden, and the United Kingdom—close to the replacement rate required for maintaining populations at current levels without migration, 2.1 children per woman.

The other major element leading to the decline in populations and the shrinking of younger generations is emigration. Central Europe and the Baltics is partly getting older due to outmigration, while EU-15 countries are on the contrary becoming younger as a result of immigration. Only the Czech Republic, the Slovak Republic and Slovenia, according to UN (2013) statistics, have had positive net migration rates; the rest of Central Europe and the Baltics have lost population to out-migration and not attracted many immigrants. By contrast, all EU-15 countries are receiving immigrants. Following the EU expansion in 2004, all the Central Europe and Baltic EU member states registered spikes in outmigration. Citizens from Latvia, Lithuania, Estonia and Poland have been among the most mobile. Migrants tend to be younger than the natives of the EU countries to which they usually move. For example, most Polish and Baltic emigrants depart at between 15 and 34 years old.[4] Outmigration has caused the younger age groups to shrink faster than overall populations in sending countries, thus accelerating aging.

[4] Hazans 2015.

Figure 3. Most Central Europe and Baltic countries have low fertility rates

Total fertility rates in 1990 and 2012



Notes: Countries are ranked in ascending order of fertility rates in 2012. The dotted line denotes replacement fertility rate of 2.1. Very low fertility is here defined as those countries with a total fertility rate (TFR) of 1.5 or below; Lower fertility is defined as having a TFR over 1.5 and under 1.7; and closer to replacement rate is defined as having a TFR of 1.7 and over.
Source: World Bank calculations based on *World Bank's World Development Indicators.*

1.3 The Future for Aging in Central Europe and the Baltics

The median age of the population is projected to rise in Central Europe and the Baltics more quickly than in the EU-15. This aging phenomenon—increases in the median age of the population due to mostly to shrinking younger generations—is the focus of this report. The median age of the population will continue to rise quickly in Central Europe and the Baltics as the combined influence of a fall in fertility and outmigration persists and younger generations decrease in size. The median age is set to increase from 40 in 2012 to 46 in 2030 and to 48 in 2060. Aging will occur more rapidly than in the EU-15: the EU-15 starts off with a higher median age of 42 years in 2012, but has a slower increase to 45 in 2030 and 46 in 2060. Older generations will continue to increase in size relative to younger generations (see Figure 4 and Table 1). Those aged 50 or older will represent 43.4 percent of the in 2030 and close to half (47.6 percent) of by 2060. The labor force will become older, with those aged 50 and over making up a third of the working-age population[5] by 2030. Aging in Central Europe and the Baltics has not brought the same growth in the numbers of very elderly (aged 80 and over) that occurred in the EU-15 as life expectancy has been lower. But countries have to prepare for this to change. The population share of the very elderly (aged 80) will increase from 3.8 percent today to 5.8 percent in 2030 and almost 11.8 percent in 2060.

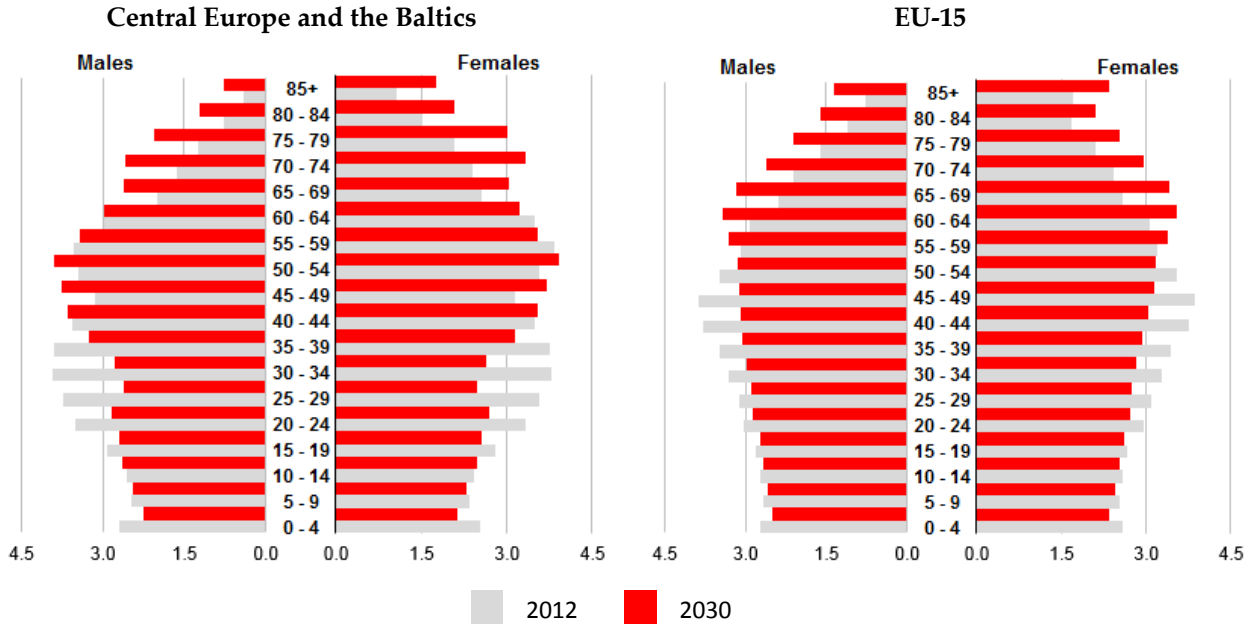
The population structure in Central Europe and the Baltics is more imbalanced than in the EU-15—there is more variation in the size of generations. Large changes in fertility across age groups and recent high migration among the young have led to greater differences in the size

[5] Here defined at the population aged 15 to 64 years old.

of generations in Central Europe and the Baltics compared to the EU-15. Limited longevity and higher male excess mortality from middle age onward means that there are less people at older ages and fewer males than females. For illustration, Figure 5 shows the projected variation in the size of difference age cohorts between Central Europe and the Baltics and the EU-15 in 2030. By 2030, middle-aged groups (aged 40-59) are much larger in Central Europe and the Baltics and younger generations smaller. These larger sized cohorts have implications for aging societies in Central Europe and the Baltics. For the next two decades or so, countries will have to prepare for the aging of workforces. As young student-age populations continue to fall, countries will have to reduce their schools infrastructure. A wave of people reaching pension age at the same time will place additional demands on public budgets, which requires planning. Likewise, a surge in deaths for a transitional time period will mean that health services need to adapt to meet increased demand. These waves of larger-sized age groups rippling through the population structure may be transitional if outmigration declines and fertility rises. However, even if this move to a more balanced population structure take place, the transition period will be long. Low fertility today has a multiplier effect as there are fewer people of child-rearing age in future generations.

Figure 4. Younger generations to shrink in Central Europe and the Baltics, as populations become more top heavy

Share of population of each age cohort, by gender, in percent



Note: Population projections for 2030 are based on Eurostat's main population projection scenario.
Source: World Bank calculations based on Eurostat.

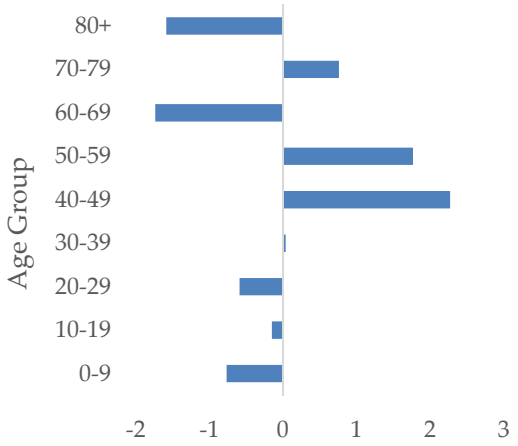
Table 1. Share of older generations increasing over time, 2012-2060

Share of the population in Central Europe and the Baltics, in percent

Age	2012	2030	2060
0-14	15.0	14.2	14.1
15-29	19.8	15.9	15.3
30-49	28.7	26.5	22.9
50-64	20.8	21.0	16.8
65-79	11.9	16.6	19.0
80+	3.8	5.8	11.8
Working age (aged 15-64)	69.3	63.3	55.1
Old-age dependency ratio	22.6	35.5	56.0
50+ share of workforce	30.1	33.1	30.5
50+	36.5	43.4	47.6
65+	15.6	22.5	30.8
80+	3.8	5.8	11.8
Population change		-3.9	-8.9

Figure 5. Younger generations are relatively small in Central Europe and the Baltics

Difference in size of age groups between Central Europe and the Baltics and the EU-15, as a share of total population, 2030



Note: Population projections given for 2030 and 2060 are based on Eurostat's main population projection scenario. The difference in size of age groups in the figure shows how much larger (+)/smaller (-) is each age group in Central Europe and the Baltics compared to the EU-15, expressed as a share of the total population.

Source: World Bank calculations based on Eurostat.

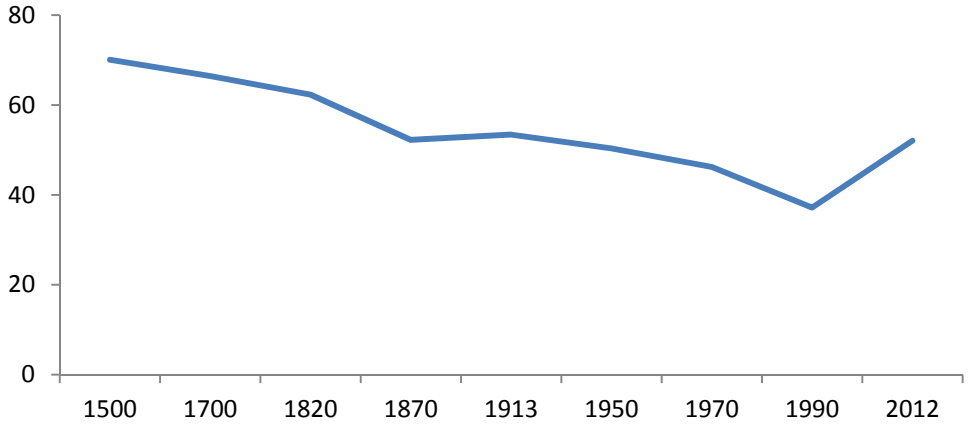
2. The Policy Challenge for Aging Central European and Baltic Countries

Aging without policy changes will present challenges. With declines in fertility and outmigration as the strongest demographic factors, countries need to address the economic and social impacts of shrinking younger cohorts. Without an appropriate policy response, aging could negatively affect economic growth in three ways. First, it could reduce growth through a decrease in the labor force as younger generations shrink. In addition, the skill composition of the workers might worsen, as older workers may end up with obsolete skills, leading to slowing productivity growth and innovation. Second, population aging could lower private savings if elderly people save less than prime working-age individuals. Lower savings could dampen investment and growth. Third, aging is a direct cost driver for public spending, especially for pensions, health and long-term care, and if aging-related fiscal costs were to rise unsustainably, this would threaten growth. But provided countries can put policies in place that allow them to address these challenges, aging Central European and Baltic countries can continue to realize gains in economic output and welfare, and converge to high EU income levels. Aging with continued growth is by no means automatic. It will require early and coordinated policy initiatives covering labor markets, healthcare, education, pensions, long-term care, migration and family policy. Finally, given the relatively low gains in life expectancy in many countries, Central Europe and the Baltics will need to take advantage of further possible increases in longevity.

Central Europe and the Baltics face the challenge of continuing to close the income gap with the EU-15, despite aging. Considerable progress in income convergence with the EU-15 has been made since the 1990s, even while younger generations have been shrinking and the population has been becoming older. Central Europe and the Baltic countries have in the past two decades began to close the income gap with Western Europe for the first time since the industrial revolution (Figure 6). Historical data is not available for all countries, but using information from Angus Maddison's database on economic growth over the last centuries,[6] it is possible to compare developments in seven Central European and Baltic nations with Western Europe. Incomes in these seven countries were lower than in Western Europe throughout the medieval era, only to further lag behind following the industrial revolution.[7] But since 1990, they has seen unprecedented growth, with average income per capita as a share of that in Western Europe growing from 37 percent in 1990 to 52 percent in 2012. All Central European and Baltic countries were able to narrow the income gap with the EU-15 average since 1995: economic growth since 2000 averaged about 3.5 percent a year, led by growth in total factor productivity and capital deepening.[8] It is estimated that total factor productivity, including improvements in labor quality, was responsible for more than 50 percent of output growth in Central Europe and the Baltics and a rise in capital intensity for slightly less than 40 percent since 2000. Labor accounted for a mere 10 percent, and largely reflected the increase in the participation rates. The challenge will be to keep incomes converging with the wealthier EU economies as countries age.

Figure 6. Growth has converged to Western Europe despite aging in the past twenty years

Per capita output in Eastern Europe as a share of Western Europe, Western Europe = 100, 1500-2012



Notes: The country groupings in panel (a) represent those used in the database of Maddison (2010) on historical economic growth in the world between AD 1 and 2010. Eastern Europe consists of Albania, Bulgaria, Czechoslovakia, Greece, Hungary, Poland, Portugal, Romania and Yugoslavia. Western Europe is made up of 30 countries: Austria, Belgium, Denmark, Finland, France, Germany, Italy, Ireland, the Netherlands, Norway, Spain, Sweden, Switzerland, the U.K. and fourteen small Western European countries.

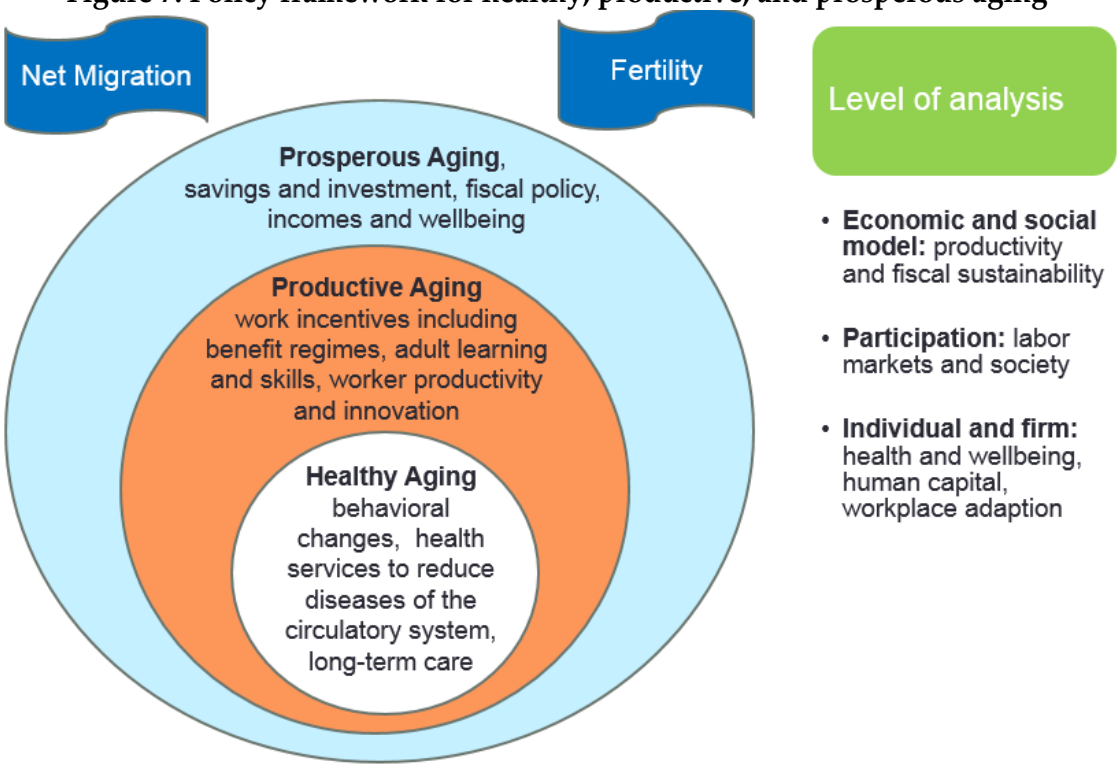
Source: World Bank calculations with Panel (a) based on Maddison (2010) and the World Bank's World Development Indicators, and panel (b) based on Eurostat.

[6] The Maddison-Project 2013.

[7] For an account of the historical growth experience of one of these countries, see Piatkowski (2013) who covers how Poland fell behind from the sixteenth century onwards as it became a largely agrarian economy and failed to industrialize when the West did.

[8] World Bank's Central Europe and Baltics RER (June 2014).

Figure 7. Policy framework for healthy, productive, and prosperous aging



How can the countries of Central Europe and the Baltics respond to the aging challenge? The solution lies in investing in people to allow them to age productively, while taking measures at the level of the government, the firm and the individuals to tackle economic challenges. **Healthy aging** aims at reducing excess mortality and morbidity. Healthy aging is a pre-requisite for productive aging, because only healthy people will be able to both work longer, but also enjoy healthier lives during their retirement—and hence contain health and long-term care expenditures. Increased health is important, of course, in itself as it contributes to increasing overall welfare.

Productive aging focuses on enhancing the motivation and opportunities for people to contribute productively throughout their lives—in particular, in the labor market—and will require reforms in many policy fields, ranging from labor regulations that affect incentives, workplace interventions to foster productivity of older workers, benefit policy, skills, and education. The falling size of younger generations means that economies need to invest more in the productivity of the aging labor force to ensure productive aging. Interventions at the firm level, ranging from ergonomic adjustments in the workplace to mixed-age teams can help in reaping the benefits of an aging workforce by ensuring productivity is maintained. Firms have already begun to experiment and identify these interventions, mostly in the EU-15 countries, and have even started to reap the benefits associated with an aging workforce.[9] Yet, these firm-level

[9] Cai and Stoyanov (2014), for example, find that older countries have started shifting exports to industries that intensively rely more on so-called age-appreciating skills—that is, skills that improve with age, as opposed to age-depreciating skills.

interventions need to be disseminated more broadly and their implementation fostered with public support. In the education sector, the focus needs to be on preparing current and future generations for longer working lives by increasing skills. These efforts begin from early childhood interventions that help to lay the foundations for continued, life-long learning to continued training and updating of knowledge and skills throughout the life cycle. While increasing labor force participation across all age groups can contribute, large groups of women and older people currently are not employed and could boost the labor force. Increased employment is the one policy response to aging that—if achieved—can ensure that growth and shared prosperity are not negatively impacted: it means that increased life expectancy translates into longer working lives, keeping the ratio of time spent at work and time spent in retirement in balance. Higher labor force participation will also ensure that investments into human capital pay off for longer, increasing the incentives to invest in acquiring skills and education. Longer working lives are necessary for prosperous aging, allowing people to accumulate more savings and wealth, increasing prosperity and available income during retirement, and increase fiscal revenues while decreasing expenditures, in particular on public pensions.

Prosperous aging, finally, aims at creating the conditions whereby the aging economy can flourish and at ensuring that the elderly can enjoy a prosperous retirement without infringing on the prospects of future generations. The channels for growth—labor supply, capital formation, and productivity—will undoubtedly be influenced by shifting demographics: the focus here is on the potential role of behavioral and technological change in mitigating adverse effects of an aging population, but also sound and proactive macroeconomic policies. It will necessitate appropriate policies to deal with age-related fiscal pressures, including social protection financing. Pensions make up the largest share of aging-related spending and are set to grow in a number of countries. Health costs are rising, more due to technology and the increased demand for health services that occurs as economies grow, but aging will contribute—particularly if accompanied by more bad health. The provision of long-term care services is low in Central Europe and the Baltics. Demand for eldercare is likely to grow as the share of the very elderly rises and a rise in labor force participation among women would also reduce the informal care workforce that is currently relied upon. Given these spending pressures, prioritizing, increasing efficiency and making trade-offs in public spending will be necessary to control aging-related spending, such as on pensions, and more general cost pressures that are likely to arise in sectors such as health. There is also a case of shifting social security financing from labor taxation to general revenue financing, where labor taxes are high and social security taxes cannot meet all aging-related costs.

Aging economics in Central Europe and the Baltics face a big challenge in protecting future older generations from poverty. Unlike in EU-15 countries, middle-aged and older people do not hold much wealth in Central European and Baltic countries and having little savings they rely on labor and pension income. Box 1 outlines the relatively lower wealth in the hands of older households in Central Europe and the Baltics compared to the EU-15. Pensions currently play an important role in protecting older people from poverty. Future projections are for pension coverage and adequacy to fall substantially in some countries, leading to increased vulnerability to poverty for older people. So an important challenge will be how to protect older people from poverty, while ensuring pension systems are sustainable. Policies to expand minimum income

schemes are likely to form part of the solution for older age groups, along with measures to encourage increased household savings for younger people.

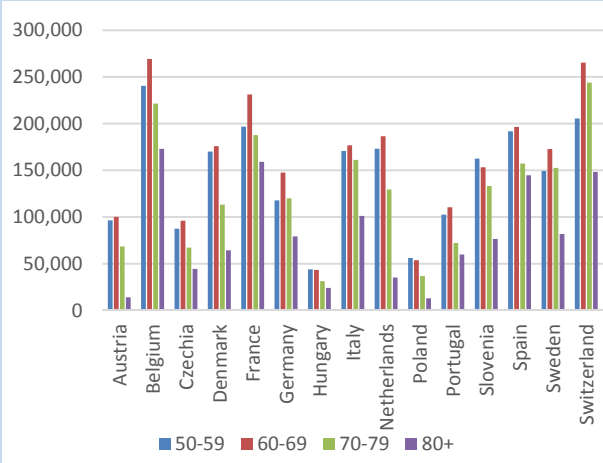
Migration and increased fertility may, to a certain extent, offer a path in the future for countries to have more equally sized generations. Inward migration or fertility increases are unlikely to reverse aging in Central Europe and the Baltics, but in the longer-term they can contribute to a rebalancing of the population structure and increase the size of younger generations.

Box 1. Older People Have Not Built Up Much Wealth in Central Europe and the Baltics

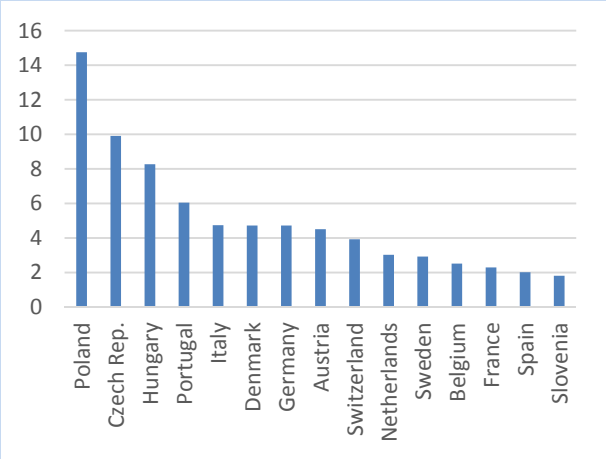
Middle-aged and older people do not hold much wealth in Central Europe and the Baltics. Median net worth in countries like the Czech Republic, Poland, or Hungary is much lower compared to other EU countries (panel A Figure B1.1). Older generations in Central Europe and the Baltics tend to have lower wealth compared to younger generations and they rely on pensions and wages for income. There is also a large share of individuals with no wealth. For the population aged 50 and over, those with zero or negative wealth equal 14 percent in Poland and nearly 10 percent in the Czech Republic compared to around 4 percent or under in Austria, Belgium, Denmark, France, Germany, Italy, the Netherlands, Switzerland, Sweden and Slovenia (panel B Figure B1.1). Slovenia stands out as having much better off households than the other Central European and Baltic countries.

Figure B1.1. In Central Europe and Baltics countries, people had fewer opportunities to accumulate wealth

Panel A: Median net worth by age group, in absolute numbers



Panel B: Share of households with zero or negative net worth



Note. Net worth is the sum of net real assets and net financial assets. Panel (a) shows household median net worth in Euro, 2005 PPP. Since the CPI, which is used to measure PPP, does not take into account changes to asset prices (only goods and services), deflating asset prices by PPP, is not an accurate representation of the real value of assets across the countries. Ideally, one should deflate physical assets such as houses by an index of asset prices. Data availability on household wealth is limited for Central European and Baltic countries. The analysis here is done for the countries that participate in SHARE.
Source: Gruen (2015) based on SHARE, wave 4.

3. Productive aging

Older workers represent an increasingly important share of the labor force and high employment situation and productivity rates among these older workers is central to growth in aging economies. This section of the report analyzes the factors facilitating and impeding continued employment and productivity for an older workforce in Central European and Baltic countries. Before evidence on the challenges and opportunities of the productive aging agenda is presented, several commonly-held myths surrounding older workers should be dispelled, with more evidence against these myths presented throughout the chapter.

- ***Myth 1: Older workers would prefer retirement to continued employment.*** In fact, a Eurobarometer survey fielded in 2011 demonstrated that two-thirds of older workers in Europe (69 percent in EU-15 and 52 percent in Central Europe and Baltics) would prefer a combination of a part-time job and a partial pension as opposed to full retirement (Eurobarometer 2012). Within Central Europe and Baltics, this preference for gradual retirement is highest in Slovakia and Latvia (at 67 percent and 65 percent, respectively), and above 50 percent for all but Czech Republic (49 percent), Slovenia (46 percent), and Romania (29 percent) (Eurobarometer 2012). Moreover, Bloom et al. (2007) and Kulish et al. (2006) provide theoretical models and empirical evidence that, in response to a rise in life expectancy, individuals would raise both the number of working years and the number of years in retirement (Bloom, Canning, and Moore 2007; Kulish, Smith and Kent 2006). However, older individuals face real challenges in attaining their ideal path to retirement.

- ***Myth 2: Older workers are less productive and more difficult to manage compared to younger employees***. To speak of a decline that comes with aging is only true to a limited extent; rather, the brain and the body are compensating, and skills are shifting toward new strengths. Some cognitive decline can be well explained by a decline in perceptional abilities—hearing and seeing—that can easily be offset with appropriate interventions. Yet, overall, the evidence points to a remarkable ability of the body, the brain, and personality to compensate for weaknesses by building up and relying on new skills. Establishment of certain age-related firm-level policies can enhance the productivity of older workers while leveraging complementarities in the skill sets of workers of different ages to attain higher overall productivity.

- ***Myth 3: Older workers take away the jobs from the young***. This is a "lump-of-labor fallacy," which assumes a fixed stock of jobs in an economy and perfect substitutability between older and younger workers. There is a relatively large body of evidence establishing that lump-of-labor is indeed a fallacy, which is not borne out across countries or over time.[10] A recent contribution to this literature demonstrated young and old workers in Europe are generally not competing for the same jobs due to their limited

[10] For a book that contains many case studies on the "lump-of-labor fallacy", see Gruber and Wise (2010).

substitutability in terms of occupations, sectors, and skills, with the exception of some idiosyncratic circumstances, such as in economies where employment is dominated by the public sector or sectors with very low labor mobility.

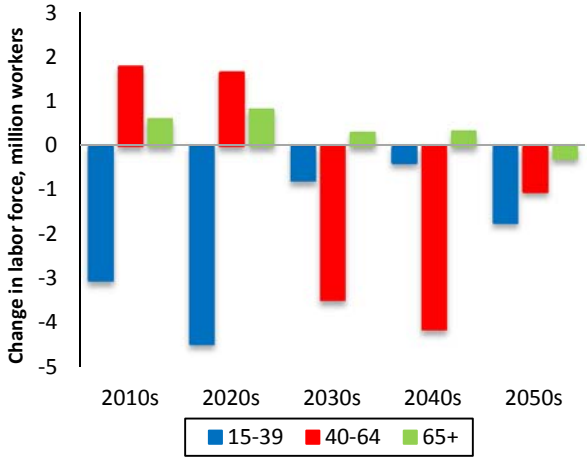
3.1 Labor Force Participation

If labor force participation rates do not change, the workforce in Central European and Baltics countries is expected to shrink and age significantly in the coming decades. However, behavioral and policy changes can moderate this process. The age structure of the workforce will be affected by the demographic forces but can also be influenced by changes in policy. If—contrary to the current trend—participation rates across age and gender groups remain unchanged after 2030, the labor force in Central European and Baltic countries will shrink by about 13.8 million workers between 2010 and 2060. Overall, this projected decline is underpinned by key changes in the age structure of the labor force, which are shown in the left-hand panel of Figure 8. The younger part of the labor force (aged 15-39) will decrease by over 10 million workers, and the middle part of the labor force (aged 40-64) will shrink by 5.2 million workers. These losses will be slightly compensated by the expansion in the older labor force group, aged 65 and older, which will increase by 1.8 million workers during the same period. As shown in the right-hand panel of Figure 8, higher labor force participation rates of women or older adults can attenuate the labor force shrinkage for all age groups, but the highest potential is for activating the older individuals, many of whom are currently retiring at relatively young ages.

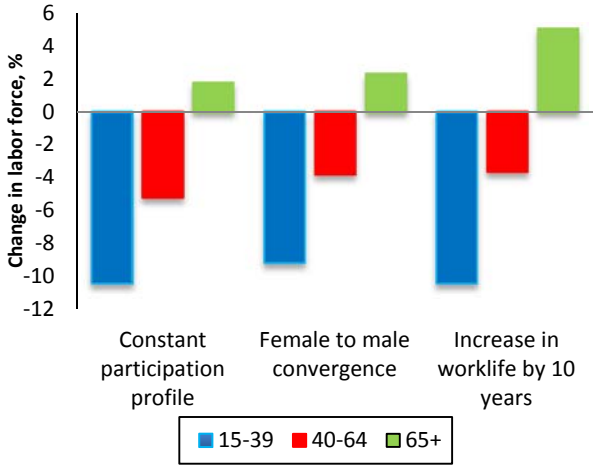
Figure 8. The size and composition of the labor force can be altered considerably by higher participation

Projected changes in the size of the labor force

(a) If behavior towards participation does not change, by age Category, Central Europe and Baltics, 2010s to 2050s



(b) Under different labor force participation scenarios, by age category, Central Europe and Baltics, 2010–60



Source: Data in panel (b) is based on projections of the International Labour Organization (ILO) for 2015–30 based on past trends, and scenarios for 2035–60 developed by the World Bank for this report (female participation convergence to male participation rates and working life gradually increases by ten years).

There is some evidence that higher life expectancy is already being accompanied by extending working lives in aging countries: after falling continuously since the 1970s, the average effective retirement age in OECD finally stabilized in the mid-1990s and started increasing in the 2000s. In Central European and Baltic countries, labor force participation fell after transition in the 1990s, but grew again in the 2000s. All Central European and Baltic countries, except Croatia, have seen labor force participation gains in the last decade—these are large in the case of Bulgaria, Latvia, Hungary and Estonia (4.4 to 5.6 percentage points). Estonia and Latvia now have participation rates above Western Europe and the U.S. A large part of this rise has come about due to increased labor force participation of women over 45. For some countries, however, there is still some way to go. Croatia, Bulgaria and Romania face relatively low labor force participation of older adults, and a large gender gap in retirement ages.

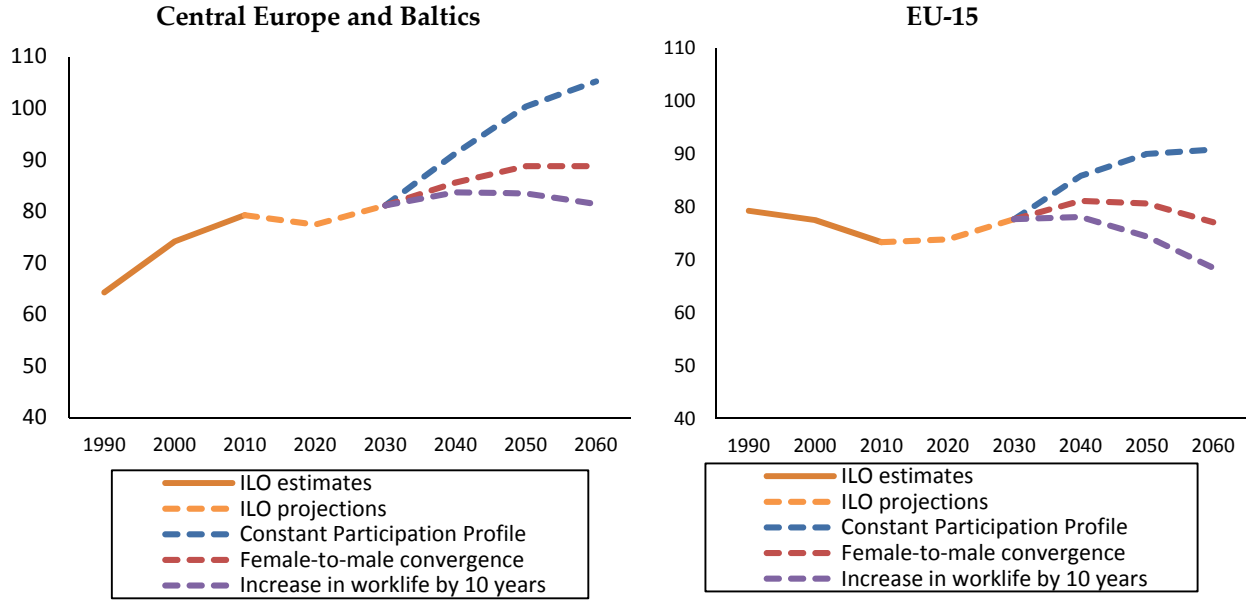
Longer working lives can also mitigate the increase in the inactive population. As European societies attain greater longevity and as citizens find themselves healthy at older ages, traditional measures of dependency ratios, which define working-age population with an artificial age cut-off (usually 65), become increasingly outdated (Sanderson and Scherbov 2010). Instead, in order to capture the fiscal implications of aging, dependency would best be measured as the ratio of inactive to active populations. Such a dependency ratio would also better reflect behavioral responses to the changing economic model as well as policy changes that promote labor force participation throughout the life cycle. Using this definition of dependency,

Figure 9 demonstrates that between 1990 and 2010, whereas the ratio of inactive to active people rose dramatically for Central European and Baltic countries (left panel), it fell for EU-15 (right panel); this can be explained by the dynamics of labor force participation rates, which rose in the former group of countries in the 1990s, but fell in the latter.[11] International Labor Organization (ILO) projections of labor force participation rates between 2010 and 2030 imply that dependency ratios in Europe will rise only slightly in this period. As aging dynamics accelerate between 2030 and 2060, without any further change in behavior, the dependency ratios are expected to rise significantly in both Central European and Baltic and EU-15 countries, but there is also ample room to counteract this trend through higher labor force participation of women and older individuals. Indeed, if the age profile of labor force participation can shift by 10 years for older age groups (e.g. if 55-year-olds by 2060 participate in the labor force at the same rate as 45-year-olds in 2030), dependency ratios in Central Europe and the Baltics would remain relatively stable despite significant population aging.

[11] Over the 1990-2010 period, labor force participation rates of the population aged 15+ increased in ten EU-15 countries (all except the three Nordic states, Italy, and the UK), but fell in ten Central Europe and Baltics (all except Slovenia).

Figure 9. The ratio of inactive to active people does not necessarily deteriorate

Ratio of Inactive to Active People, Ages 15+, by Scenario, 1990–2060



Note: Data are based on past estimates of participation rates in 1990–2010, projections of the International Labour Organization (ILO) for 2015–30 based on past trends, and scenarios for 2035–60 developed by the World Bank for this report.

Source: World Bank simulation scenarios and ILO 2013.

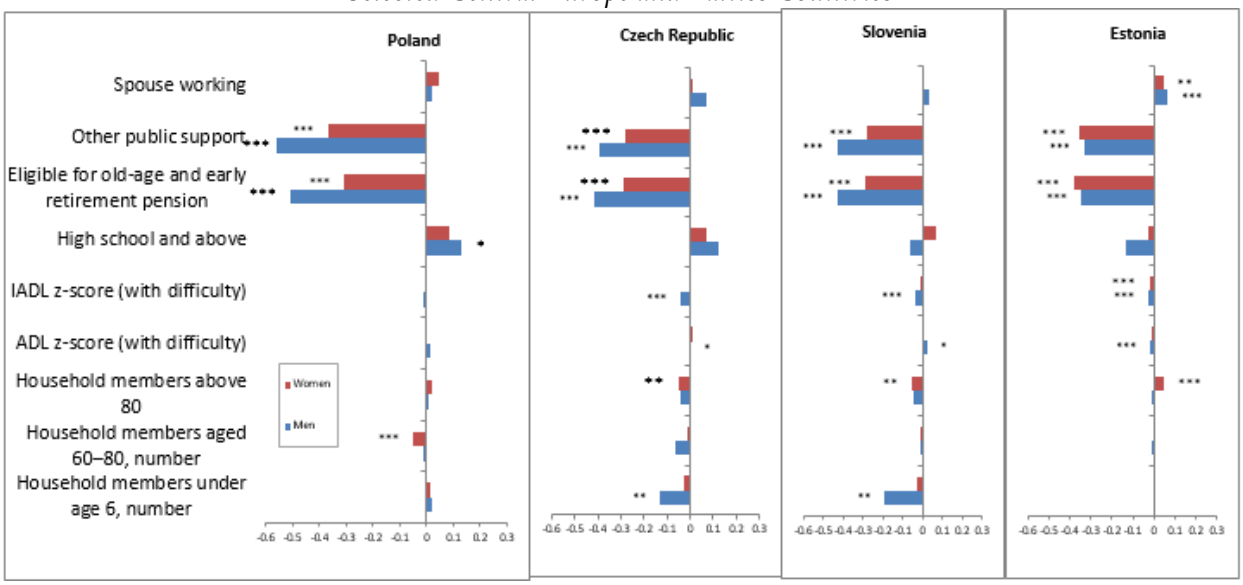
Better education facilitates longer working lives, but the age gap in employment is closing even for lower-educated workers. Workers with more years of formal schooling were more likely to participate in the labor force across most of age profiles in 2013, and especially around pension-eligible ages. This could be due to the fact that individuals with more formal education may learn new skills more readily and be more adaptable in the face of changing labor demand, and also because they are more likely to work in white-collar occupations that are less physically demanding, which facilitates continued employment into older ages. It is also encouraging to see that the age gap in employment rates is closing even for lower-skilled workers. Notably, although the age gap remains relatively high for Central Europe and the Baltics relative to EU-15 countries, it has converged significantly for females over the last decade.

Improving the understanding of factors influencing whether people work at older ages helps identify the key policy areas. Identifying the determinants of labor supply for older individuals is challenging due to three main factors: (i) some important variables (such as health status) are imperfectly observed; (ii) there are functional relationships among some variables (for instance, health status may affect income through productivity, available time, and available household wealth); and (iii) the labor supply of an elderly individual may be simultaneously determined by the labor supply decisions of other family members, particularly a spouse. Nevertheless, in the absence of common policy changes across Central Europe and the Baltics that

may be employed as quasi-natural experiments, even purely descriptive models can be informative on the individual and household correlates of employment at older ages. This report presents analysis drawing on the 2011 wave of the Survey of Health, Aging, and Retirement in Europe (SHARE) to examine these correlates for Central European and Baltic countries. The main associations found are summarized in Figure 10.

Figure 10. Receipt of a pension or other public support is strongly correlated with exit from work

Benefit Eligibility, Health Status, and Household Structure as Correlates of Employment of the Elderly, Selected Central Europe and Baltics Countries



Notes: Figure shows the main results for a Probit model estimating the association of a number of factors with the probability of "exit from work". Suppressed covariates include age; age squared; married; number of household members between 6 and 12, 12 and 18, and 18 and 60; less than primary education; primary school; middle school; log of housing wealth; spouse measures of disability (Activities of Daily Living (ADL) and Instrumental ADL (IADLs) z-scores); and country fixed-effects. Other public support includes disability, unemployment, survivor, and war pensions. Significance level: * = 10 percent, ** = 5 percent, *** = 1 percent.
Source: Giles, Koettl and Yang (2015) using data from SHARE Project, Waves 2 and 3 (databases).

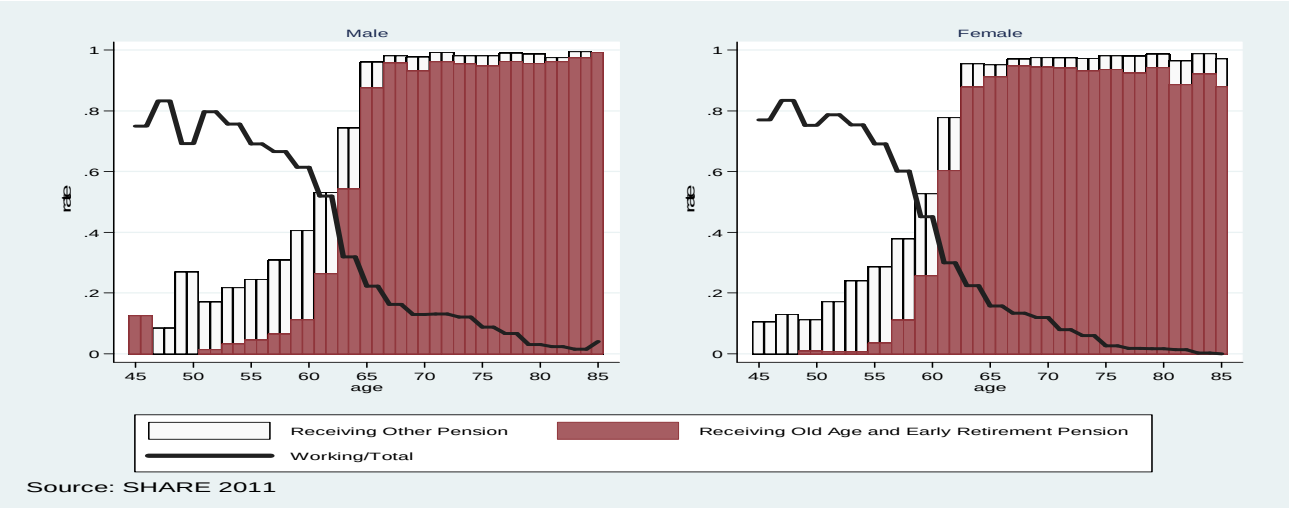
The receipt of a pension or other public support is strongly correlated with exit from work in Central European and Baltic countries; changing the official retirement age or benefit structure therefore has the potential to incentivize later retirement. As the share of an age cohort with potential access to longer-term support through pensions or other public assistance increases, the employment rate tends to decline. To a greater extent than in the EU-15, the data of the Survey of Health, Aging, and Retirement in Europe (SHARE) suggest that exit from work at younger ages in Central Europe and the Baltics may be strongly associated with the receipt of other public support (unemployment insurance, disability insurance, and veteran war pensions) (see Figure 11). In Central Europe and the Baltics, more women than men receive pensions before age 60, which may contribute to their earlier exit from work. Moreover, as demonstrated in Figure 10, analysis of SHARE data for Central European and Baltic countries revealed that employment at older ages is negatively correlated with both pension eligibility and receipt of other public

support. Evidence from OECD economies also suggests that the age of pension eligibility as well as key parameters influencing benefit generosity are strongly associated with labor force participation at older ages. Changes in these policies thus have the potential to affect retirement decisions of older workers. For example, a pension reform in Austria that raised the early retirement age delayed retirement pension claims and boosted employment probabilities by 9.8 and 11 percent among men and women, respectively.[12] Similarly, a natural experiment with a permanent reduction in benefits for early retirees caused a 10-month delay in retirement in Germany (Hanel 2010).

Figure 11. Pension receipt increases and labor supply decreases with age

Pension Receipts and Labor Supply, by Age and Gender, Selected European Countries, 2011

a. Central Europe and Baltics, men **b. Central Europe and Baltics, women**



Note: Countries include Czech Republic, Estonia, Hungary, Poland, and Slovenia.
Source: World Bank calculations based on SHARE Wave 4.

Other factors, including poor health, care obligations, and retirement of the spouse or partner can push older workers out of the labor force. Microdata analysis based on SHARE has demonstrated that the deterioration in the ability to live independently, as measured by instrumental activities of daily living (IADLs) such as the ability to perform housework, manage money or take medication, is associated with exit from work (see Figure 10). In Central Europe and the Baltics, the presence of older family members (in the 60–80 and the 80+ age-groups) is associated with a reduced likelihood of working, suggesting that care responsibilities interact with older workers' labor supply. As one would expect, this relationship is stronger for the labor supply of females. Women in Central Europe and the Baltics take on much of the burden of child and eldercare (see Box 2 on care obligations for women). More surprisingly, the presence of children under six is negatively correlated with employment for older males but not females in

[12] Not all individuals affected by the increase in the minimum age for early retirement ages remained in the labor force; some simply delayed taking benefits (Staubli and Zweimüller 2013).

Central Europe and the Baltics.[13] There is also strong evidence that men and women are more likely to be working if their spouses are working. This correlation is consistent with the preference for joint retirement that is observed elsewhere in the retirement literature, and suggests that in countries in which the retirement age is lower for women than men raising the age of benefit eligibility for women could lead to later retirement among both men and women.

Box 2. The Uneven Burden of Care in Central European and Baltic countries

Women of all ages are disproportionately bearing the burden of informal care for both children and the elderly across EU countries. The use of formal arrangements for child and elder care remains low in many countires the region, with women performing the majority of care work, regardless of their employment status (Fisher and Robinson 2009). The low use of formal care alternatives is partially due to the prevailing social norms, which place a high expectation on the provision of intergenerational support by women, but also to the lack of accessible, affordable and quality formal care options.

The high demands on women´s time due to their role as care providers impacts on labor market participation. Evidence also indicates that caregivers obtain lower wages (a "motherhood penalty"), which can further discourage labor supply and increase vulnerability to poverty in the long term. For example, in the Czech Republic and Croatia around 50 percent of women that were out of the labor force or working part-time in 2010 reported that the main reason was the lack of availability of formal childcare. Not just mothers, but also grandparents, and especially grandmothers below 60-years old, play a significant and growing role as caregivers: 46, 44, 42, 41 and 39 percent of grandmothers in Hungary, Bulgaria, Slovenia, Poland and Romania, respectively, reported providing care regularly to grandchildren in 2011. Grandparental support can also negatively impact on female labor supply, especially in where they tend to be young. For example, female labor force participation among the 50+ in Poland is negatively associated with the presence of an older household member, which suggests that care duties limit the ability of women to join the labor market. Eldercare can also prevent older women from being active in the labor market. The combined effect of increased longevity and delayed onset of fertility has given rise to a "sandwich generation": women who provide care simultaneously to both the younger and older generations in the family. In SHARE countries, 19 percent of grandmothers aged 50-59 years face the triple burden of employment, grandparental childcare and support to others. The double-duty care burden can have significant implications for the employment situation of women, as it leaves little time for engaging in paid work.

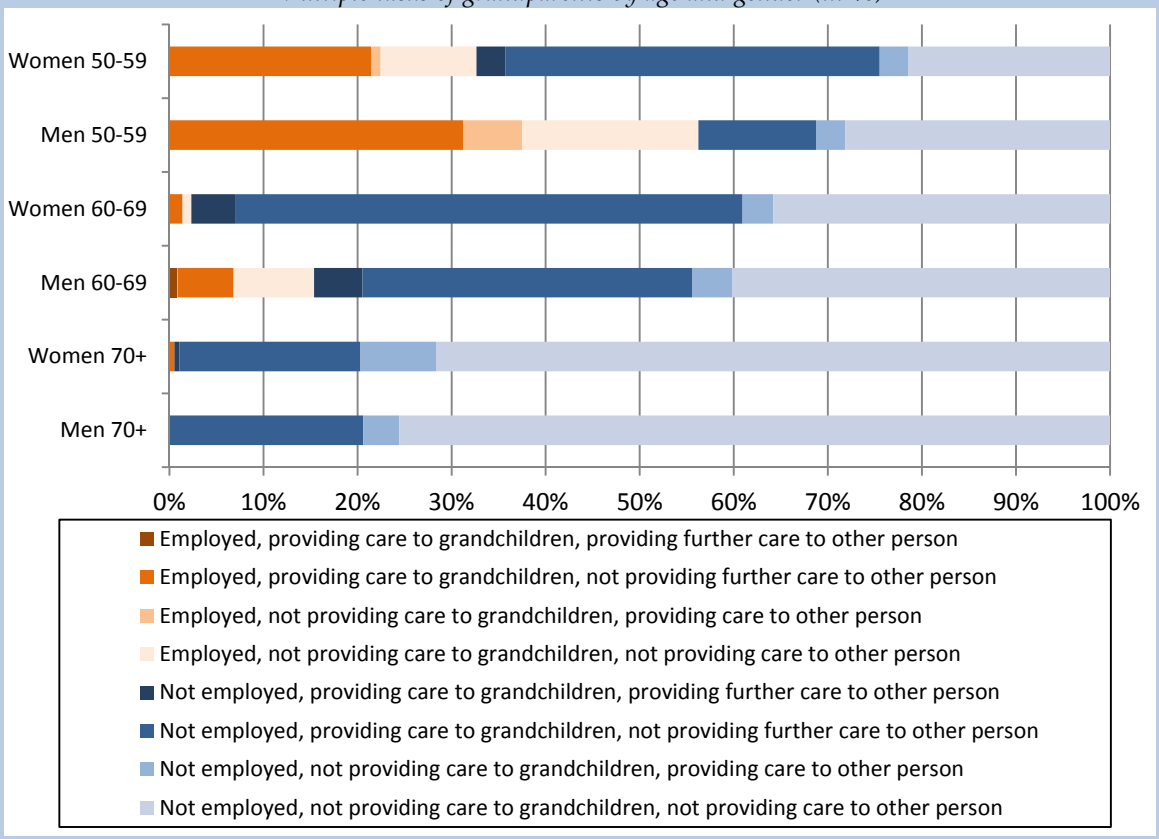
Consider the situation of women in Poland. Care arrangements prevailing in Poland rely primarily on the family. In the absence of quality and affordable child care and elderly care services, prime age and older household members (mostly women) are expected to provide care for children, as well as for the disabled and older people. According to Kryńska et al. (2013) every fourth woman aged 45+ and man aged 50+ men in Poland is engaged in caring activities—on average for over six hours a day. Older people, especially 50-59 year old women, are substantially engaged in care activities (Figure B2.1). These arrangements, while often following traditional social norms and bringing fulfillment and satisfaction

[13] This could perhaps be explained by an interaction of earlier retirement ages for women and the age differences between grandparents, where grandmothers retire at or after their official retirement age in the presence of grandchildren needing care, whereas men in the same situation retire prior to becoming eligible for pensions. Another potential explanation is the poor health status of men driving both co-residence with grandchildren and their exit from the labor market.

to grandparents, may make it more difficult for older workers to participate actively in the labor market.

Figure B2.1. "Sandwich Generation" in Poland

Multiple tasks of grandparents by age and gender (in %)



Notes: Data on grandparents aged 50+ with at least one grandchild under the age of 16 years.
Source: World Bank calculations based on SHARE wave 4.

Care needs are expected to grow in the future. The intensity of needs will depend on how healthily populations age. In addition, the demand for child-care is expected to continue to expand, if women are to return to work in greater numbers. The possibility for people around the retirement age to provide informal care will be increasingly limited by shifts in the demographic structure of households, marriage and family patterns, the geographical mobility of children and gradually increasing retirement ages. Thus, combining family and work responsibilities may be increasingly difficult, meaning that other forms of care will need to develop.

Source: Gatti et al 2015; and Munoz Boudet et al. 2014.

Re-employment of older workers after job loss or retirement is currently very limited. Evidence collected using retrospective survey data on people's life histories (SHARELIFE)[14] demonstrates that involuntary job loss is more likely to lead to permanent exit from work for older workers compared to their younger colleagues. Indeed, large shares of those who have lost jobs after age 45 remain permanently out of work. Although some of the relatively greater

[14] SHARELIFE is the third wave of data collection for of the Survey of Health, Ageing and Retirement in Europe (SHARE) and focuses on people's life histories.

difficulties can be explained by higher skill obsolescence of older individuals, negative employer attitudes towards older workers in Central Europe and the Baltics are a major obstacle to the re-employment of older individuals after job loss or retirement. In a Eurobarometer study, more than 80 percent of respondents in the region reported that employers' attitudes are very or fairly important in explaining why people aged 55 and over might stop working (Eurobarometer 2012). Fortunately, older workers with higher levels of educational attainment may have fewer problems in finding new work: re-employment hazard rates (based on SHARELIFE data) show that older men who have completed upper-secondary or tertiary education in the Czech Republic and Poland are more likely to reenter work within a year, and their advantage over less well-educated adults increases with time out of work. Return to work after retirement is negligible in Central Europe and Baltics and significantly lower than in Northern and Central Europe, according to SHARELIFE data. Therefore, working life may be extended by eliminating the obstacles to returning to work after formal retirement. Indeed, early retirement is often an alternative to being laid off into unemployment, so paying special attention to activating such retirees might be important.

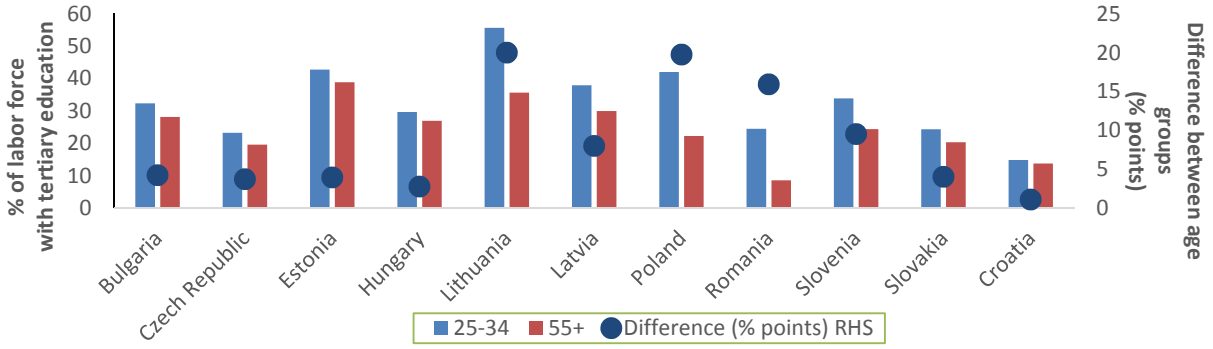
3.2 Productivity

Attainment of longer working lives will continue to shift the age structure of the labor force towards older individuals, bringing into question the extent to which employability and productivity of older workers is comparable to that of their younger colleagues. Conventional wisdom has it that older workers are less productive and more difficult to manage compared to their younger colleagues. To what extent does this commonly-held belief find support in the literature? And even in the presence of a negative correlation between age and worker productivity, are there policies—public or firm-level—that can moderate this relationship, so that the human capital of older workers is utilized to the greatest possible extent?

Some effects of aging may be transient, and future cohorts are expected to have higher productivity as they age. Higher age is associated with a deterioration in some skills. However, some seemingly inevitable effects of aging could, in fact, reflect issues specific to an older cohort of workers rather than the process of aging that will affect younger cohorts. For example, 30-year-olds in 1984 may have lacked certain skills that 30-year-olds today possess. Suppose the former, who are 60 years old today, still lack these skills. This is a cohort effect. It would be wrong to interpret the lack of these skills in today's 60-year-olds as a long-term effect of aging, because those who will be 60 years old in 30 years' time will not lack these skills. There is evidence in the medical literature that future cohorts will do better as they age. In developed countries such as the United Kingdom, the relationship between age and certain age-sensitive cognitive skills has become less negative in more recent cohorts, possibly because of better health and education at younger ages (Skirbekk et al. 2013). In some Central European and Baltic countries, such as Lithuania, Poland, and Romania, where the younger cohorts of workers already exhibit higher human capital endowments (as proxied by university degrees) compared to their 55+ colleagues (Figure 12**Error! Reference source not found.Error! Reference source not found.**), the rise in average educational levels in successive cohorts is a particularly important cohort effect. In the future, the region will have older workers, but these workers will also be better educated.

Figure 12. Higher education attainment is rising for younger workers

Labor force participants with a higher education degree, 25–34 and 55+ age-groups, Central Europe and Baltics, 2010

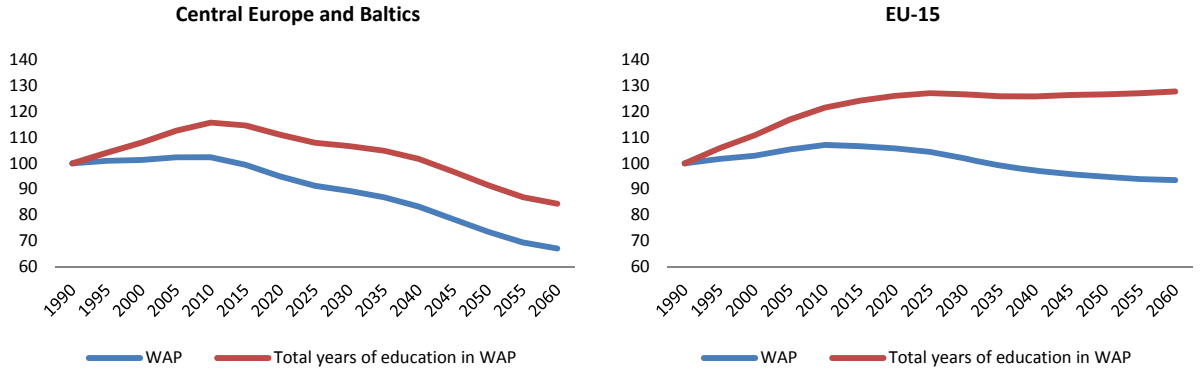


Source: Harmonized data for 2010 from EU LFS (European Union Labour Force Survey) (database).

Given the acceleration of aging dynamics in the coming decades, significant investment in greater educational attainment for younger cohorts in Central Europe and Baltics will be needed to maintain the size of human capital stock. As younger cohorts have much higher education in most EU countries relative to older cohorts, the size of human capital stock in the economy, as measured in total years of schooling among the working-age population (16–64 years), has expanded much more than the size of the working-age population over the last 20 years (see Figure 13). In the future, the size of human capital stock is projected to be more stable than the labor force. Yet, given the sheer volume of projected exits among older generations in Central Europe and Baltics and the relatively low growth in educational attainment (compared to EU-15), the stock of years of schooling will decline in parallel with the shrinking size of working-age population over the next 45 years (although still by less than the expected shrinkage in the working-age population). Only significant increases beyond the projected trends in the educational attainment of younger generations can be expected to preserve the size of human capital stock in Central European and Baltic countries. Fortunately, with 50-70 percent of the young labor force (aged 25-34) still lacking university education in many countries (see Figure 12**Error! Reference source not found.Error! Reference source not found.**)), there is ample scope for investment in educational attainment of the upcoming cohorts.

Figure 13. Stock of years of schooling expected to decline less than size of the working-age population

Index of the size of the working-age population and its stock of years of schooling, Central Europe and Baltics and EU-15, 1990–2060



Note: WAP denotes the working-age population (defined here as 15 to 64 years old).
Source: World Bank calculations based on Lutz, Butz, and K. C. 2014.

Higher human capital of future generations is likely to come not just from increases in education quantity but also improvements in quality. The quality of education has clearly been rising in recent years, and today's youth have better cognitive skills than their parents did when they entered the labor market. Performance in the OECD's Programme for International Student Assessment (PISA), which assesses competencies in reading, mathematics, and science among 15-year-olds, demonstrates that, for most Central Europe and Baltics states, there is still significant room for improvement in terms of catching up to best-performing countries. Several countries in the region have large shares of 15-year-olds who, after taking the PISA reading test in 2012, were assessed as functionally illiterate. This was the case, for example, of close to 40 percent of the 15-year-olds in Bulgaria and 37 percent in Romania. Such poor reading performance means that students cannot absorb information contained in the texts they read, which is a severe limitation in today's labor market and severely undermines the opportunity for effective lifelong learning (see Box 3 on the conditions for lifelong learning needs being set early life). However, the trend in most countries in the region is positive. Compared with 2009, the literacy, numeracy, and science skills among tested students have clearly improved (see Figure 14). The only exceptions are Hungary, the Slovak Republic, and Slovenia. This gives rise to the hope that the new generation of labor market entrants will not only spend more time in education, but also that the quality of basic education—and, thus, cognitive skills and the prospects for successful lifelong learning—will improve. While panel data is needed to disentangle cohort effects from age-related dynamics in cognitive performance, cautious optimism about higher quality of education of younger cohorts can be gained from the OECD's Programme for the International Assessment of Adult Competencies (PIAAC), which tested 16- to 65-year-olds on literacy, numeracy, and proficiency in problem-solving in technology-rich environments. This assessment reveals that younger adults (aged 25–34) performed significantly better compared to older adults (55–64) in on all three tested dimensions for most countries.

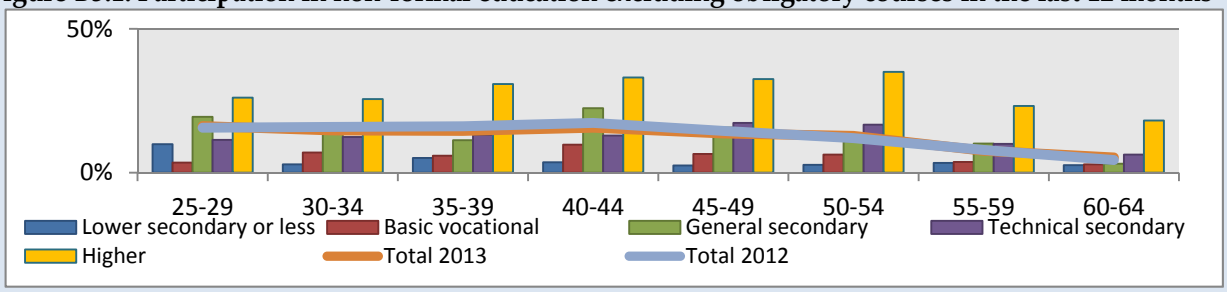
Box 3. The conditions for lifelong learning are set early in life

Lifelong learning is a key tool to mitigate some of the consequences of demographic decline by ensuring the development and transmission of knowledge, skills and competences from the early years to old age. Early childhood learning deserves particular attention as the returns to investment at that level are the highest and children can be put on track to become successful lifelong learners. Lifelong learning also needs to explicitly embrace formal schooling and help setting the right priorities in terms of learning outcomes and educational modalities.

The recent neuroscience literature indicates that the brain continues to change and is able to maintain its plasticity far into the middle ages, in particular if it continues to be "challenged". This is good news for societies who will strongly depend on the contributions skilled workers make to the labor market beyond their 50th, 60th and even 70th birthdays. Thus, lifelong learning works—if appropriately designed—but for some more than others. It is not automatic that mature workers will be able to improve their knowledge, skills and competences; earlier in life the conditions allowing them to benefit from continued learning need to be put in place. This depends on families, educators and policy makers having the tools at hand to educate well the young and set them up for lifelong learning. Skills acquired at young ages will lead to more skills. Those with most education continue to deepen their learning, while those with lower initial education benefit less from training throughout their lives (see Figure B3.1). And with increasing age it becomes more and more difficult to catch up on key skills and competences like "learning how to learn", "ability to work in teams" and so on. It is still possible but in economic terms, the returns on investment are much higher for earlier stages.

Central European and Baltic countries like Poland have seen a massive expansion of tertiary education in the last decades. Higher education attainment will help countries tackling aging challenges as those attainment groups are not only more productive but also have higher labor market participation rates. While student cohorts will decline in terms of absolute numbers, higher education institutions can play a more prominent role in adult education.

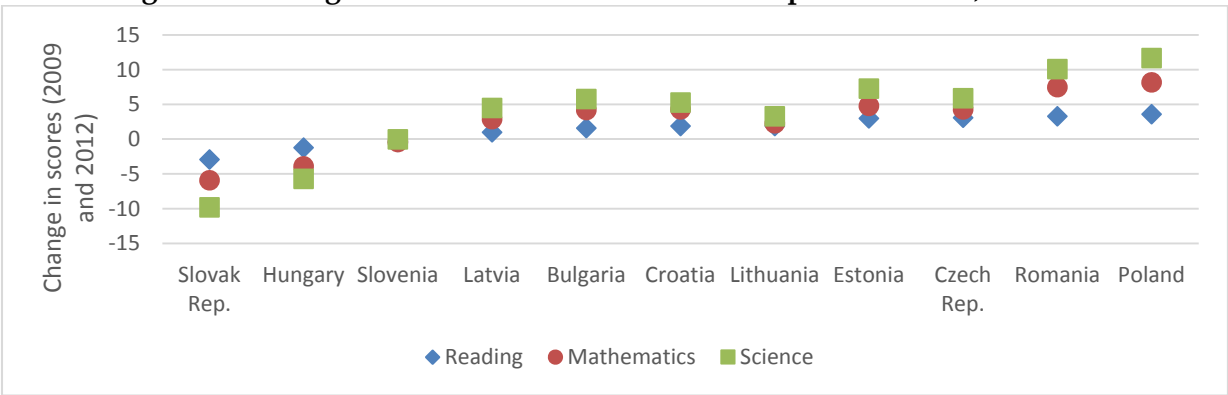
Figure B3.1. Participation in non-formal education excluding obligatory courses in the last 12 months



Source: Human Capital Balance, Poland, 2012

Source: Box based on Arnhold, Gorniak and Puettmann 2014.

Figure 14. Changes in PISA Scores in Central Europe and Baltics, 2009-2012



Source: World Bank calculations based on 2009 and 2012 data in PISA International Database, Programme for International Student Assessment, Organisation for Economic Co-operation and Development, Paris, http://www.oecd.org/pisa/pisaproducts/

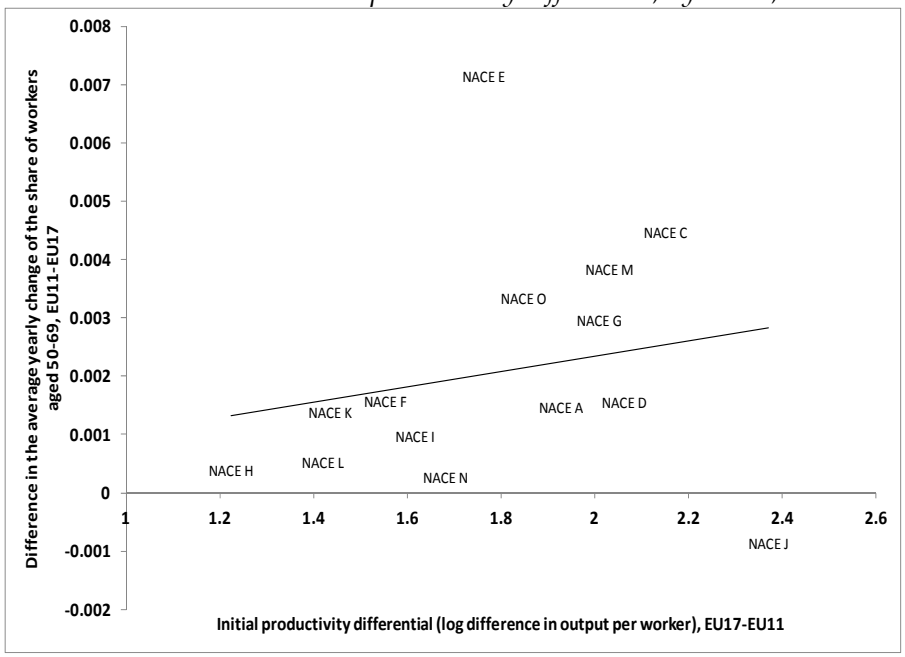
The skills of older workers are shifting rather than declining, which suggests the potential to attain higher productivity by utilizing complementarities in the skill sets of younger and older workers. Using self-reported data, OECD PIAAC also provides insights into the different skills of younger and older workers. Younger workers (aged 25-34) use more skills in information and communication technology, show more willingness to learn, and also learn more at work relative to older workers (aged 55-64). However, older workers use other skills—particularly, task discretion—more often at work relative to younger workers. While manual skills, fluid cognitive skills (e.g. capacity to learn new concepts and abstract problem solving), memory, multi-tasking, and the speed of information processing decline with age, industry-specific skills and crystallized cognitive skills such as interpersonal management and communication improve with age. This points to the brain's remarkable ability to compensate for an age-related decline in certain cognitive functions through improved performance in other functions. The way aging brains make decisions is a good example: aging brains might consider new information less often than younger brains, but they can gain efficiency by relying more on their larger amount of experience and knowledge at hand, as confirmed by recent studies using brain scans.[15] Better cognitive performance at older ages is observed for people who are well educated, have kept on working longer, stayed physically and mentally fit and socially active, and continuously tasked themselves with new challenges (Oltmanns, Godde, Winneke,and Staudinger 2013; Voelcker-Rehage, Godde, and Staudinger 2011). Beside cognitive skills and the functioning of the brain, aging also affects personality traits and socio-emotional skills, both of which are also highly relevant for labor market outcomes. Although the impact of aging on the so-called "Big Five" personality traits is complex, there is some agreement in the literature that three of these traits (conscientiousness, agreeableness, and neuroticism/emotional stability) improve with age, while the other two (openness to new experiences and extroversion) tend to

[15] For example, see Cabeza et al. 2002; Daselaar et al. 2003; Rosen et al. 2002.

decline (Wieczorkowska-Wierzbińsk 2014.).[16] However, there is emerging evidence that openness to new experiences can potentially be improved through training in the presence of internal locus of control (Mühlig-Versen, Bowen, and Staudinger 2012)), opening the possibility of moderating age-related changes in personality and thus increasing older job-seekers' employability. Moreover, intergenerational exchange has been shown to improve cognitive performance and emotion regulation of older adults in experimental settings (Kessler and Staudinger 2007), and to enhance their productivity in work settings, which suggests that mixed-age work teams can hold the key for maximizing the productivity of younger and older workers and leveraging the skill complementarities between these types of workers (Göbel and Zwick 2012).

Figure 15. Lower productivity sectors in Central Europe and Baltics were the ones more affected by aging

Difference in the average yearly change of the share of workers aged 50 to 69 between Central Europe and Baltics and EU17 versus initial productivity differential, by sector; 1998-2008



Notes: The figure represents the following NACE Sectors: A: Agriculture, hunting and forestry; C: Mining and quarrying; D: Manufacturing; E: Electricity, gas and water supply; F: Construction; G: Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods; H: Hotels and restaurants; I: Transport, storage and communication; J: Financial intermediation; K: Real estate, renting and business activities; L: Public administration and defense; compulsory social security; M: Education; N: Health and social work; O: Other community, social and personal service activities; and P: Activities of households.
Source: Cuaresma, Loichinger and Vincelette (2014).

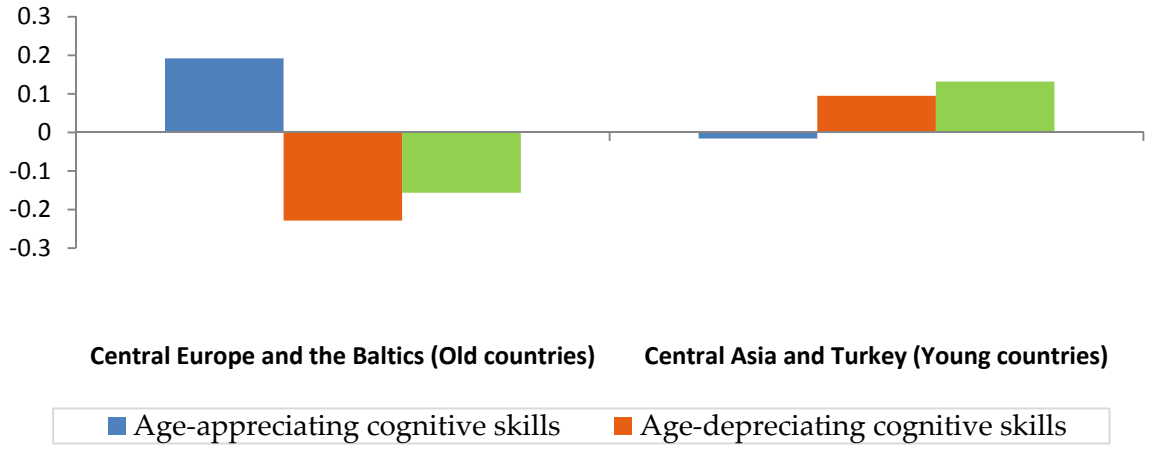
Structural transformation might become less efficient due to population aging, potentially affecting aggregate productivity growth, but specialization in sectors intensive in age-appreciating skills can moderate this effect. Another source of concern about aging and

[16] However, some studies report relative stability or even an increase in openness and an inverted-U relationship of conscientiousness and age (see Donnellan and Lucas 2008; Lucas and Donnellan 2011; Roberts, Walton, and Viechtbauer 2006; Soto, John, Gosling, and Potter. 2011; Terracciano, McCrae, Brant, and Costa 2005).

productivity relates to aggregate productivity growth from structural change, namely the concentration of older workers in less dynamic sectors and their low mobility relative to younger workers, does find support in empirical evidence. Cuaresma et al. (2014) found that there was a significant relationship between sectoral productivity and workforce aging in Central Europe and Baltics as relative to EU17, with lower-productivity sectors, such as mining (NACE C), education (NACE M), wholesale and retail trade (NACE G), and community, social and personal services (NACE O), most affected by aging in Central Europe and Baltics over 1998-2008 (see Figure 15). On a more positive note, Cai and Stoyanov (2014) demonstrate that exporting firms in Central Europe and Baltics economies appear to be taking advantage of the shifting skill endowments of their aging workforce, as the age-appreciating cognitive skills content of exports has been rising, while the age-depreciating cognitive skills and physical ability content of exports have been falling (see Figure 16).

Figure 16. In Central Europe and the Baltics, the age-appreciating cognitive skills content of exports has been rising, while the age-depreciating cognitive skills and physical ability content has been falling, 2000-10

Percentage change in age-dependent skills content of exports, 2000-10



Source: World Bank (2015) based on data in Cai and Stoyanav 2014; UN Comtrade (United Nations Commodity Trade Statistics Database), Statistics Division, Department of Economic and Social Affairs, United Nations, New York.

Enhancing the productivity of the aging labor force is essential to sustain growth. While flexibility is a concern as older workers are less likely to move across firms, sectors and geographically, firm-level changes in production techniques have been shown to yield dividends for the productivity of older workers. Evidence on employer interventions is confined to firm-level studies, but suggest that age-specific staffing strategies can help. Adoption rates by firms are unknown, particularly by small and medium enterprises, which make up an important share of firms in Central Europe and the Baltics. Much more can be done to implement such measures, which require more experimentation and dissemination. Efforts by Public Employment Services can assist older workers who are unemployed or at risk of exiting the labor market, and can also attempt to counter employer bias toward older workers (see Box 4 for an overview of Public Employment Service policies for older workers).

Box 4. Public Employment Service Policies to Support Employment of Older Workers

The key challenge for Public Employment Services (PES), together with employers, and the social partners, is the necessity to develop effective responses to increasing age diversity in the labor force (EC, 2011). Some of the measures discussed are not age-specific but address a risk that increases with age.

A proactive approach taken by PES, in the event of restructuring and mass redundancies, entails providing assistance to companies and employees before employees are made redundant. PES may utilize long-term relationships with employers/enterprises and offer advice, information, training, and/or counseling to employees facing redundancies. In particular, Belgian employers are obliged to finance outplacement services for the 45+ made redundant. Usually a temporary office is set up, which supervises the whole procedure informing and giving recommendations concerning the announcement of restructuring, communication and negotiation with all competent parties (EC (2012a).

Individualized services are needed to tailor the assistance offered to older workers. In France, every older jobseeker has a personal counsellor from the first month of unemployment (EC, 2011). In Poland, the PES is obligated to create an Individual Action Plan for unemployed people above the age of 50 within 180 days from the date of registration (EC, 2012e). Crucially, the role of profiling and counselling with older workers should be emphasized to highlight their strengths and capabilities, rather than their weaknesses with regard to the absence of formal qualifications.

A number of PES have also had positive experiences using group activities targeted to the older unemployed. For example, in Estonia, the Netherlands and in Germany, group counseling in self-help groups is successful in tackling social isolation and the lack of networking skills, to effectively deliver job search skills. Job clubs can additionally help to source 'hidden' vacancies. In Belgium, the job clubs provide four services. They offer information about the possibilities in the regional labor market. They assess the skills and employability of the jobseeker, in order to identify the occupation matching the jobseekers competences as well as employers' needs. They offer individual training, intended to discuss and assess how the jobseeker and others, including employers, perceive the employment of older workers. Finally, they provide group training, where the trainer teaches job search and interview techniques and preparing application packages effectively (EC, 2012a).

According to the EC (2003) report, evidence from OECD's International Adult Literacy Survey "proves that the productivity of older workers is not impaired by age but by skills obsolescence". Older workers receive less training than workers in other age groups. It is essential to reverse this trend. More innovative learning activities, such as coaching or training on the job can increase the chances of actively involving older workers. In Germany, the program offers certified training outside companies lasting for at least four weeks. For employees over 45, 75 percent of all costs are funded by the Federal Employment Agency (EC, 2012d).

Working time flexibility (i.e. part time, labor sharing) and direct subsidies can facilitate employability, limit discrimination and solve more complex individual cases. Financial incentives are either provided directly (through direct wage subsidies) or indirectly (through social security waivers and reductions in labor taxes). In Poland, the employers obtain temporal exemption (12 months) from the obligation to pay contributions for the Labor Fund and the Fund for Guaranteed Employees' Benefits for employing

people over 50 years of age. For employed women aged 55+ and men aged 60+, they do not pay these contributions (EC, 2012e). In Bulgaria, for each new job opened, for which an unemployed woman over the age of 50 and man over the age of 55 who are hired, employers shall be provided with the amounts equal to minimum wages for the time such person remained employed, however, for 12 months at the longest. (Kuddo, 2013).

Providing advice, guidance and support for entrepreneurial activities and self-employment can be another area where PES may actively help seniors. This would enable senior workers to use their previous work experience and skills in a way that is suited to their interests and capabilities, whilst potentially accommodating their own needs in terms of workload and organization (EC, 2012f).

Health promotion and risk prevention is another emerging field of activity for some PES, with funding being available in Austria and the UK to support health promotion or rehabilitation measures in workplaces in SMEs. In particular, in Austria the Fit2Work initiative is intended to increase the employability of workers facing difficulties in their workplace due to their health condition and consequently their stay on sick leave. The initiative entails counselling services for the employees concerned. The services encompass the evaluation of the current job and health situation; individual coaching; occupational health diagnosis and health advice; development of employment prospects; education and training advice; information about grants and support costs; and help on contact with the competent institutions (EC, 2012b). Estonia reimburses 25 percent of training costs for the retraining of incumbent workers unable to continue in their current job due to health problems (EC, 2012a).

Together with relevant stakeholders, PES in many countries have been involved in seeking to influence public opinion, attitudes of employers, and providing support for age awareness and active age management strategies to promote the employability and workability of older employees (EC, 2011).

Prepared by Arvo Kuddo

4. Prosperous Aging

Middle-aged and older people do not hold much wealth in Central European and Baltic countries.[17] The shock of transition in the 1990s often eliminated any accumulated financial wealth prior to 1990 and in any case the population had little opportunity to accumulate financial assets during the Soviet era. Housing wealth does not seem to add much to the wealth of the older people for most Central Europe and Baltics households. In fact, younger generations are accumulating wealth (as did a very small group of the very rich during the transition period) faster than older groups. This contrasts with trends in many EU-15 countries. Piketty (2014) calculates that the average wealth of French 80-year-olds is 134 percent that of 50- to 59-year-olds—the highest gap since the 1930s.

Low savings in the hands of the older population means that people will rely on the state to a large degree for pensions and later life health and care costs—at least for foreseeable future. The challenge will be to do provide aging-related spending in such a way that protects older populations from poverty, but at the same time is consistent with fiscal sustainability. The current group of people aged 50 and over has low savings and for those that are not retired do not have a long time period to accumulate more wealth. The situation may change in the future. Certain trends may help to boost private savings. First, saving rates typically increase with household income; as younger cohorts are richer, they can save more. Similarly, average savings increase with the level of education of the household head. Younger cohorts are better educated and might be less myopic about future public pension benefits.[18] Second, households with fewer dependents tend to save more. As the number of children per woman has been falling for many years, households may be able to save more.

The reliance of the older generation on public provision of social services in Central Europe and the Baltics means that it is crucial that they are provided in a cost effective manner, but also that the vulnerable among the elderly are covered. Aging-related public spending—particularly pensions—is already high and set to grow in most EU countries. The challenge is for governments to put in place early policies to ensure adequate services for aging societies, while ensuring fiscal sustainability. One issue that Central Europe and the Baltics is facing is how to put in place a social pension to provide a minimum income to less well-off pensioners, many of whom will not receive an adequate pension under current systems.

4.1 Welfare and Pensions

The unprecedented aging of Central European and Baltic populations poses a challenge for ensuring old-age income security throughout the region. Sustained low fertility rates and increasing life spans will result in almost a doubling of the share of older (aged 65 years old and above) in the population between 2010 and 2050, while the share of working-age population (aged 15 to 64) is due to decline starting from 2010 across all Central European and Baltic economies.

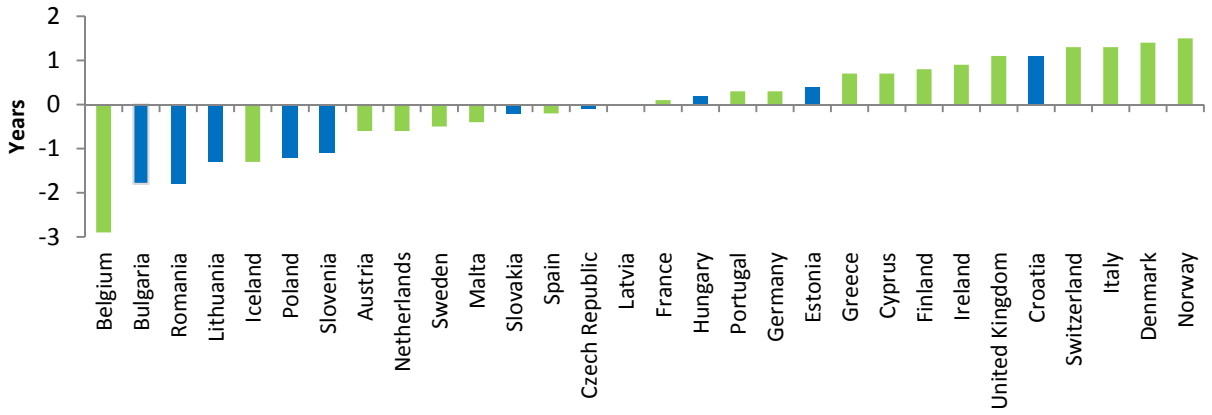
[17] Data availability on household wealth is limited for Central European and Baltic countries. The analysis here is done for he countries that participate in the Survey for Health, Ageing and Retirement in Europe, SHARE http://www.share-project.org/

[18] Poland, CEM see World Bank (2014)

Increasing labor market participation and adapting pension system design to longer lives can go a long way in making up for the implications of negative working-age population growth and the rise in the numbers of retirees.

Figure 17. Some countries have managed to reduce pension length

Change in life expectancy at effective retirement age, selected European economies, 2001–2009



Source: World Bank calculations based on Eurostat.

The pension reform agenda of Central European and Baltic countries so far has had results, but substantial challenges remain. Countries have reduced the generosity of the benefit package in order to contain rising pension expenditures given the growing numbers of retirees and constrained fiscal resources. All countries have restricted eligibility, for example by enacting higher retirement ages and longer length of service requirements. But higher retirement ages have been offset by increases in life expectancy (Figure 17) and are being implemented slowly; the result is that the average duration of retirement is only two years shorter in 2009 than in 2001. The persistently high prevalence of early retirement has kept effective retirement ages substantially below legislated ages. Pension spending as a share of GDP has not fallen in most countries even though the generosity of pensions—defined as growth in pension spending per elderly relative to growth in GDP per capita—has decreased. Box 5 discusses the fiscal and social sustainability of pension systems across the EU.

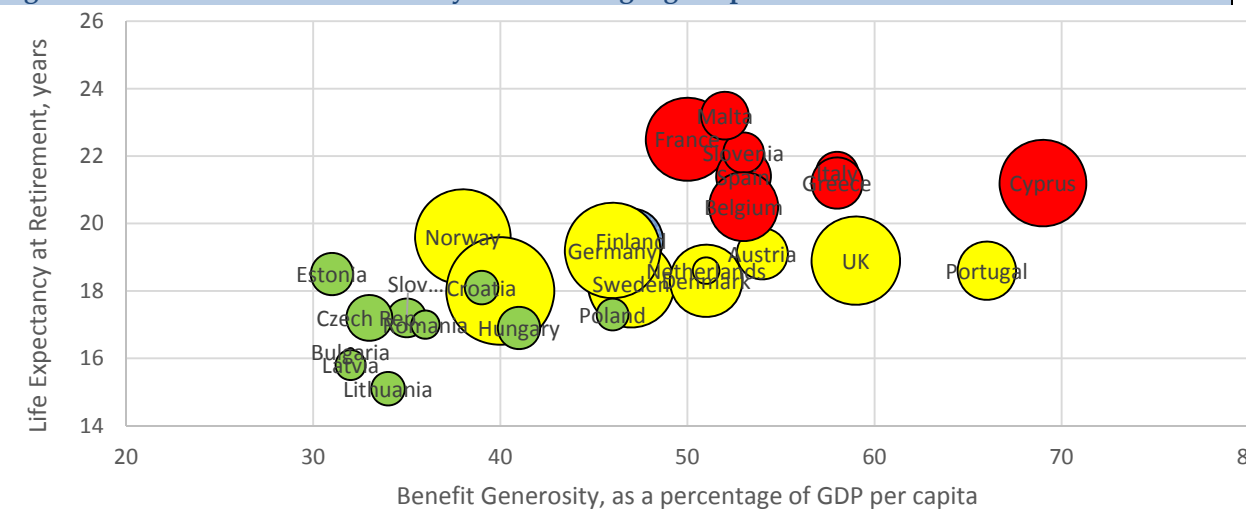
There are considerable differences across Central Europe and the Baltics in terms of projected pension cost increases (**Error! Reference source not found.**). In four Central European and Baltic countries, pension costs are projected to rise over time based on the parameters of the current pension system (European Commission *2015 Ageing Report*). The increases are more muted than predicted in the European Commission's 2012 *Ageing Report*, with the projected rise over 2012-2060 ranging from 3.5 and 2.1 percentage points of GDP in Slovenia and the Slovak republic, respectively, to 0.7 percentage points of GDP in the Czech Republic and 0.3 percentage points of GDP in Lithuania. A larger number of countries are predicted to have falling pension costs than in the previous report: In Bulgaria, Croatia, Estonia, Hungary, Latvia, Poland and Romania, pension spending is projected to decline over 2013-2060 in the European Commission's 2015 *Ageing Report.* However, given the projected drop in coverage and projected pension levels

relative to wages, the social consequences of such spending declines call into question their social viability.

Box 5. Fiscal and Social Sustainability of Pension Systems

Pension system sustainability depends on several factors, including: (i) the current role of pension systems in poverty prevention versus providing more significant income replacement; (ii) the current generosity of pensions; (iii) the severity of expected demographic change and changing labor force participation rates. Figure 5.1 below groups the EU economies into three clusters based on the level of pension generosity, and the projected change in demographics. The horizontal axis shows pension benefit generosity, measured as the ratio of average pension to GDP per capita. The vertical axis measures the average expected number of years in retirement. Therefore, countries with high values on both axes currently tend to spend a large share of their national income on pension programs. The size of the bubbles shows the projected growth of the working-age populations over the next four decades. Countries marked by large bubbles expect their working age population to grow; assuming a contribution-based, pay-as-you-go financing model, this allows them to afford higher benefit levels and longer retirement spans. Conversely, countries represented by smaller bubbles anticipate contracting working-age populations, and sustaining their pay-as-you-go pension systems may be more difficult.

Figure 5.1. Pension Benefit Generosity and Working-Age Population Growth



Source: Eurostat Statistics Database, United Nations Population Projections, World Bank Staff calculations

The *Lower-Spending Central Europe and Baltics Countries* includes Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania and the Slovak Republic. Reforms since transition have resulted in diverse pension systems, resulting in retirement spans of 14 to 19 years and benefit levels averaging around 35 percent of GDP per capita. These countries face challenging demographics. Only *Slovenia* falls into another group. It is in the High-Income Generous Spenders cluster also composed of Belgium, France, Luxembourg and, Greece, Italy, Spain, Cyprus and Malta. These countries have long retirement spans of 20 to 23 years and pay generous benefits of around 50 percent of GDP per capita. Their demographic outlook is quite difficult, putting the fiscal sustainability of their pension systems at risk. The final cluster is *High-Income Moderate Spenders* including Austria, Denmark, Finland, Germany, Ireland, the Netherlands, Portugal, Sweden, and the United Kingdom. The retirement spans in these countries range from 18 to 20 years. The level of benefits varies substantially between countries and is

on average around 50 percent of GDP per capita. With the exception of Portugal, these countries are projected to maintain the current size of their working-age populations, often with the help of significant immigration.

Limiting early retirement has been difficult. Early retirement not only increases the cost of pensions by extending the average duration of benefit receipt, but by pulling workers out of the labor force, it also reduces the number of potential workers within an already shrinking pool of working-age adults.[19] There has been some success in interventions to prevent early retirement. Poland, for instance, successfully limited the number of people eligible for early retirement from 1.53 million to 860,000 as a result of a reform in 2009. But even with strong incentives, early retirement is difficult to prevent. For example, in Estonia for the three years before the legal retirement age, pensions are increased by 0.9 percent per month if a person chooses to delay retirement and reduced by 0.4 percent for each month falling short of the legal retirement age. Evidence suggests that those changes have not yielded the expected results as people typically retire at the earliest moment possible. In another example, the notional interest rate in Latvia briefly reached 20 percent in 2007, which implies that postponing retirement by an extra year would result in a 20 percent higher benefit throughout retirement. Nevertheless, people kept retiring at the earliest possible age.

Raising revenues to maintain pension generosity also has proved difficult. Given the already large tax burden on labor across Central European and Baltic economies, addressing pension financing needs by increasing revenue from pension contributions is constrained by the potential negative impacts of high labor taxes on employment and competitiveness. During the last 20 years there has been a convergence in contribution rates to around 24 percent; countries with high contribution rates reduced them, while countries with low contribution rates increased them.

Increasing retirement ages has tended to result in an increase in the number of applications for disability pensions across Central European and Baltic economies. Since older workers are more likely than younger workers to develop disabilities, as the workforce ages, the number of disability beneficiaries was expected to increase. The financial crisis of 2008-2009 also added to the pressure on disability programs as individuals who faced unemployment tried to become eligible. As a result, while most countries made attempts at disability reforms, the impact was not always strong enough to offset the pressure to expand the number of disability beneficiaries.

Pensions play a critical role in reducing old-age poverty across Central European and Baltic countries. Pensions comprise a large part of per capita income for households with a retired

[19] Only for workers in very particular difficult occupations, such as underground mining or work with hazardous materials, is early retirement warranted. For these workers, employers are typically asked to pay higher pension contribution rates to compensate for longer periods of retirement; however, the higher contribution rates were typically not high enough to fully offset the longer duration of benefit receipt.

person and reduce vulnerability to poverty for those over retirement age.[20] Figure 18 shows that pensions play a significant role in keeping the elderly out of poverty in all countries considered, starting even before individuals reach standard retirement age at about 55 years old.[21] Among those aged 50-64, the onset of pension dependency depends on the possibility of continuing to earn labor income. While pensions also represent the main income source for the elderly in the richer EU countries, poverty before pensions is much lower in the Nordic countries or Germany, where older people have access to savings and other forms of income.

Pension systems will result in very different benefit levels for future generations. Many countries have only limited room to decrease pensions without sacrificing benefit adequacy. Central European and Baltic countries already have comparatively less generous pension systems with shorter retirement spans and lower benefit levels averaging around a third of GDP per capita (Figure 18). The low poverty rates among pensioners today may not persist, in the absence of reforms. For example, Poland is projected to see a decline in pension levels from 51 percent of average wage today to 26 percent in the future (Figure 19). Such a sharp drop in the projected replacement rates also raises the question of whether benefit levels in countries like Poland will be socially acceptable. There is little room to supplement low public pensions with savings among the current 50 plus generation. High-Income Generous Spending EU countries on the other hand have so far provided much more generous pensions compared to Central European and Baltic economies (see Box 5). As a result, these countries have more space to mitigate the fiscal pressures of aging through reductions in generosity.

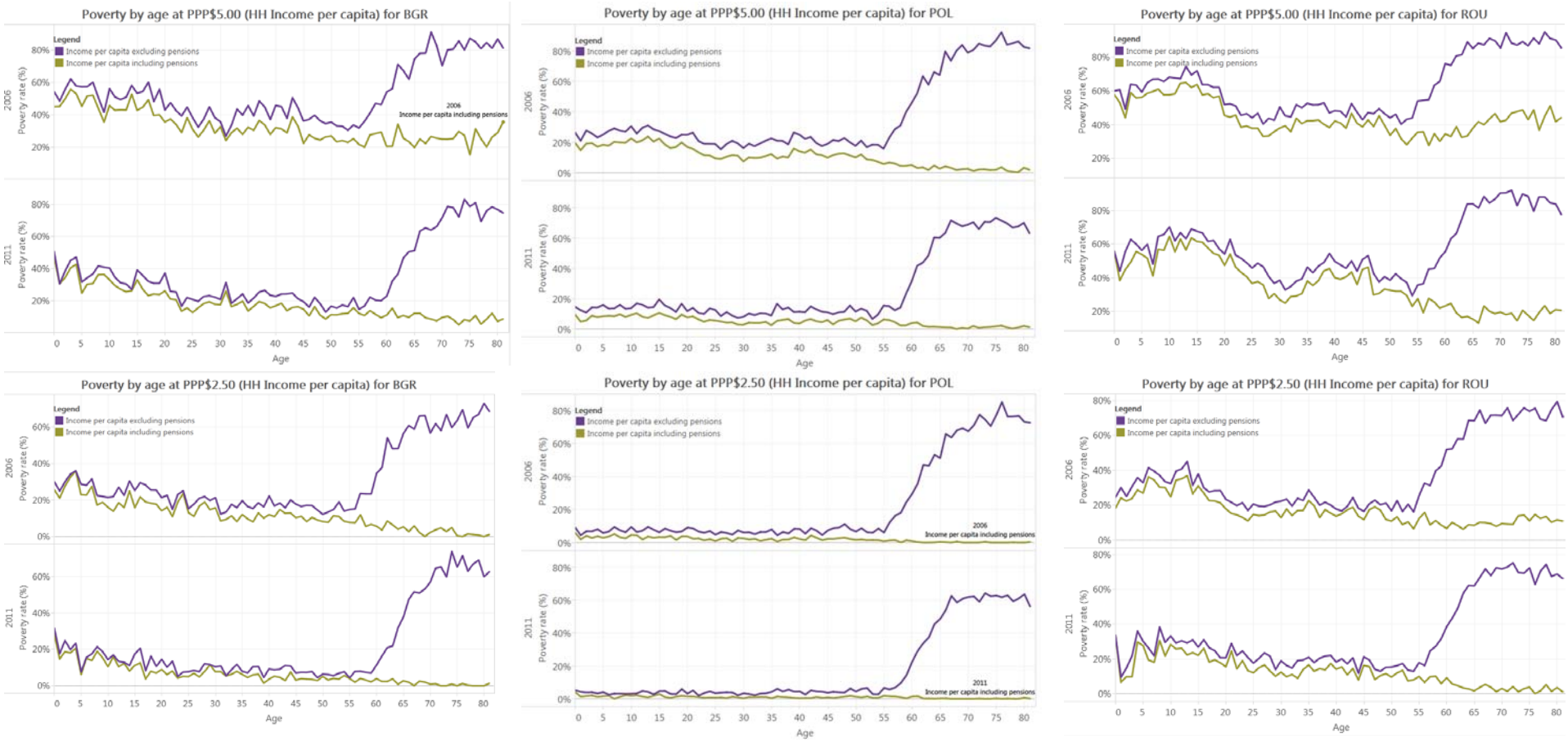
[20] The pivotal role of pensions in tackling the risk of old-age poverty is not new. Their relevance was highlighted when discussing the transition period from the Soviet era in the former Soviet Union in the early 2000s, as well as for Eastern Europe to ensure the elderly were not fall into poverty (Chawla et al 2007, Chand and Jaeger 1996).

[21] The retirement age is 63 for woman and 65 for men in these three countries.

Figure 18. Pensions play a large role in reducing poverty for older people

Selected Central Europe and Baltics Countries, Poverty by Age and Household Income Per Capita, Including/Without Pensions, 2006 and 2011

Bulgaria **Poland** **Romania**

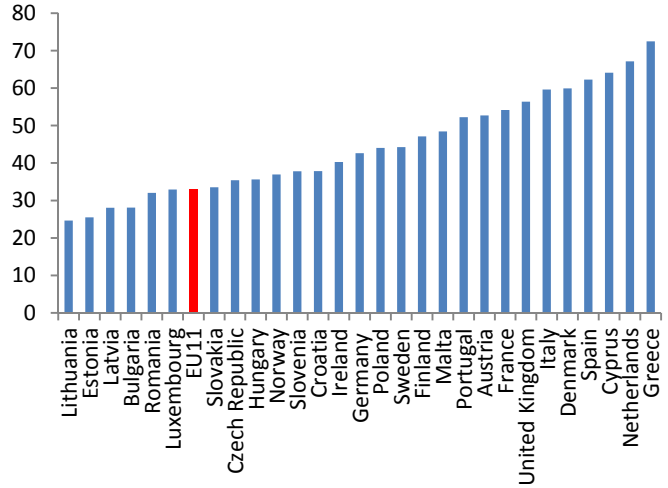


Source: Based on ECAPOV data.

Notes: Poverty line is 5 USD/PPP per day. Welfare aggregate is household income. Negative share means negative contribution to welfare

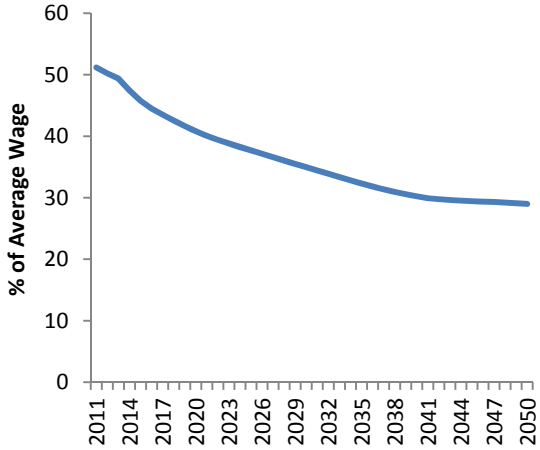
Figure 19. Pension benefit generosity is low and projected to decline

(a) Pension spending per beneficiary compared to GDP per capita, 2011



Source: Eurostat Statistics Database.

(b) Poland: projected pension benefits as percentage of average wages



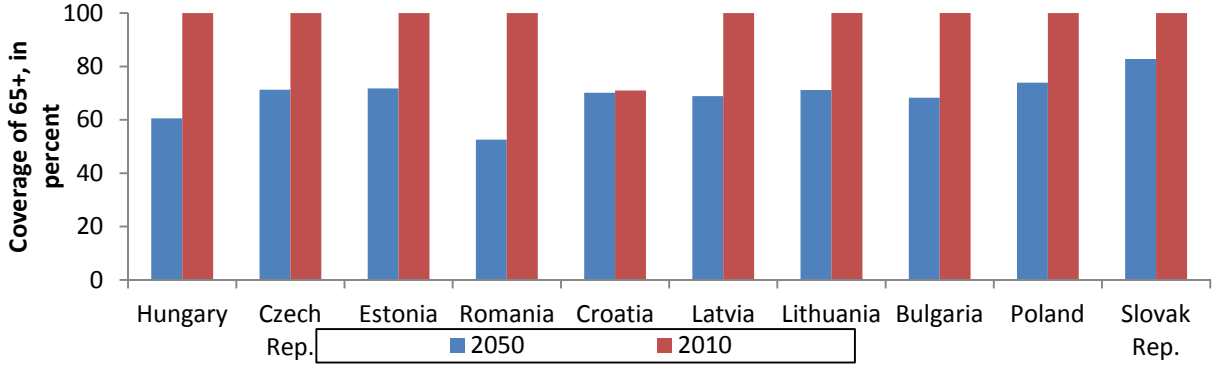
Source: World Bank Staff Projection using PROST.

Countries face declining coverage rates for pensions. Large numbers of people who are not part of the formal labor market will begin to retire in the next 20 years without having access to a contributory pension (Figure 20). How to provide them with old-age income support will be a relevant issue. The projected decline in elderly pension coverage also bears equity implications for countries that already heavily subsidize contributory pension systems through general revenue financing; continuing to channel general revenue financing toward a shrinking pool of eligible beneficiaries when many people are not covered is inequitable and regressive. The growing size of uncovered elderly also means that governments will have to provide at least some level of poverty protection benefits, adding to the projected financing needs.

The social sustainability of pension reforms that provide low benefits and do not cover a large share of the population is questionable. Generally, pension reforms that did not provide adequate benefits were not politically sustainable and they were subject to discretionary ad hoc revisions. This experience raises important questions regarding the social sustainability of cost-cutting pension reforms implemented across Central European and Baltic economies that appear to have solved the fiscal side of the challenge at the expense of adequacy for future generations. It remains to be seen what will happen if actual pension benefits fall below social expectations of what is deemed adequate.

Figure 20. Pension reforms providing low benefits and low coverage of the population are not socially sustainable

Share of Older People Receiving Social Insurance Benefits



Notes: Future coverage of elderly (65 and over) in the pension system is based on pension system contribution patterns of the current working-age population. Higher rates of labor market informality compared to pre-1990s along with stricter contribution requirements (higher retirement ages, longer length of service requirements) contribute to reduced participation in the pension system of current working-age population compared to pre-transition.
Source: Based on country-provided data.

4.2 Public Spending Priorities

Aging-related public spending—particularly pensions—is already high and set to grow in most EU countries. Estimates of public spending related to aging—on pensions, health and long-term care—range from 12.1 percent of GDP in Latvia to 24.6 of GDP in France in 2013.[22] But policies matter and can keep age-related public spending manageable; indeed, the process of adjusting social spending to aging demographics has already begun in a number of countries, where pension reforms have been put in place to limit the growth of benefits to a sustainable level in the future. However, relevant challenges remain to be addressed and some bold decisions will have to be taken on tradeoffs to ensure fiscal sustainability, while protecting the vulnerable.

Aging is likely to increase public spending in the future, but appropriate policy choices are critical to keep any such cost increases manageable. The pension reform agenda is still unfinished in some countries and the extension of working lives is likely to have an impact on how systems evolve. Coverage and adequacy of pensions is set to decline in a number of countries. Such a situation is unlikely to be socially sustainable and the need to put in place a social pension scheme is likely to arise. Health costs are likely to rise for reasons other than aging, and cost containment will not alone require healthier aging, but also the control of costs related

[22] The European Commission's *2015 Ageing Report* presents projections of the budgetary impact of aging population in the 28 EU Member States over the period 2013–2060. Strictly age-related spending items are defined as total public spending on pensions, health, long-term care and education. As such it is a wide definition of aging-related spending. Education spending is projected to fall for most countries by 2060 and so contributes to a small decrease in strictly age-related spending in the EU projection. However, we exclude education from the age-related spending definition. Why? It is not clear how education needs will evolve, but it is likely that there will be increased demand on the sector in the area of lifelong learning, including publicly-provided early childhood education, and that aging may increase the need for productivity-enhancing public investments in the sector. See World Bank (2013) for an in-depth discussion on the needs of the education system in light of aging in Bulgaria.

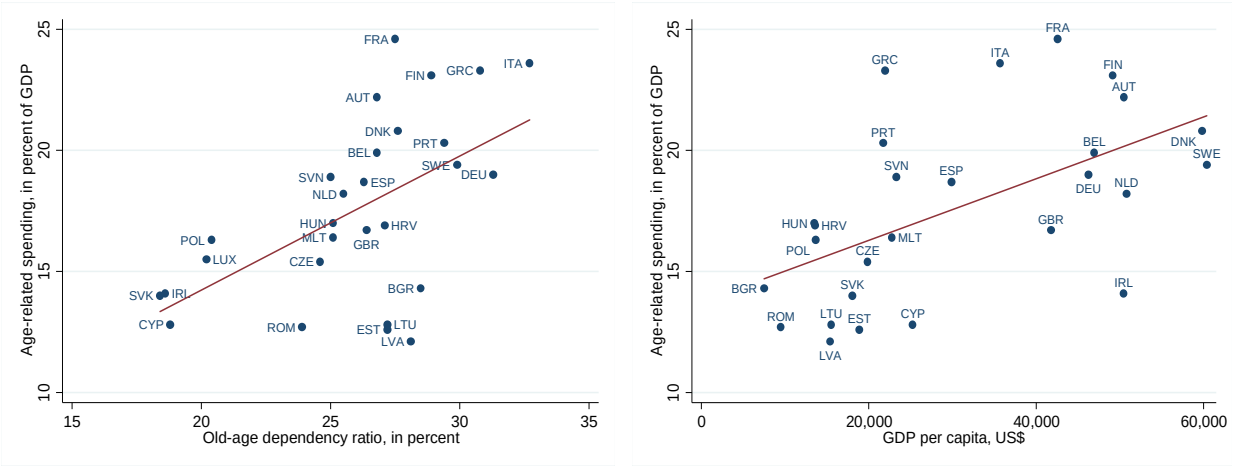
to technology and increased demand for health services. Long-term care needs are likely to be higher than Central European and Baltic countries currently project.

The countries with the highest age-related public spending are not necessarily those with the oldest populations. Age-related public spending is not necessarily higher in "older" countries; there is a large variation in the level of spending between countries that have a similar share of the population aged 65 years old and over (Figure 27 (a)). Spending related to aging is more closely associated with the level of income of a country than with how old a country is (Figure 21 (b)): Austria and Estonia both have an old-age dependency ratio of about 27 percent, but age-related public spending is very different, representing 22.2 percent of GDP in Austria and 12.6 percent in Estonia. A cluster of low-spending lower-income countries, some of which have relatively high old-age dependency ratios, can be observed, including Bulgaria, Estonia, Latvia, Lithuania, Romania and the Slovak Republic. There is greater disparity between the higher income EU economies, with one of the oldest countries, Germany, having lower age-related spending than "younger" Austria, France or Denmark. Public spending on aging is then not solely driven by demographics, but importantly by policy decisions taken on coverage and generosity of pensions, health and long-term care systems often years before.

Figure 21. Age-related spending is higher in the EU-15 than in Central Europe and the Baltics

Age-Related Spending in the EU, 2013

(a) (b)



Notes: Estimates of age-related spending comprises public spending on pensions, health, and long-term care. Luxembourg is excluded from the (b) panel as an outlier. Linear trend line fitted.

Sources: Age-related spending estimates from the *European Commission's 2015 Ageing Report*, population data from Eurostat and GDP per capita from the World Bank's *World Development Indicators*.

Categorizing countries according to their level of age-related spending shows the divergence across aging economies in terms of the level and composition of spending. Three groups emerge if we look at countries' age-related spending in 2013. There is a high spending group made up by the mainly richer and "older" countries (Austria, Denmark, Finland, France, Greece, Italy and Portugal), where age-related public spending is greater than 20 percent of GDP.

Greece and Portugal stand out in terms of having a relatively low GDP per capita relative to the level of age-related spending. The medium-spending group comprises Belgium, Croatia, the Czech Republic, Hungary, Germany, Luxembourg, Malta, the Netherlands, Poland, Slovenia, Spain, Sweden and the United Kingdom. Medium-spending countries are a diverse group, many of which have relatively low pension (the Netherlands, the United Kingdom and Sweden) or public health costs. Most also have limited public long-term care provision, with the exception of Belgium, the Netherlands and Sweden. This group spends between 15 and 20 percent of GDP on age-related items. Within the medium-spending group, countries have very different projected changes in spending. At one end is Croatia, where due to an anticipated fall in pensions and an assumption that long-term care provision will remain constrained, spending on age-related items is supposed to decrease over time. By contrast, Slovenia is projected to become the highest spender among EU new member states by 2060. Finally, there is the lower spending group where age-related public expenditure is below 15 percent of GDP. This group includes many Central European countries and all the Baltics—Bulgaria, Estonia, Latvia, Lithuania, Romania and the Slovak Republic—and Cyprus and Ireland. These countries are mostly anticipated to remain low providers of public spending related to aging (relative to other EU countries), with the exception of the Slovak Republic where pensions are set to rise. Health and long-term care costs are not projected to rise by much. For all three groups, pensions are the biggest age-related spending item and for some countries are the most significant driver of the projected increase in outlays. For half of the countries, pension expenses are expected to decline as a result of recently implemented reforms to limit generosity and contain pension expenditures (Figure 22).[23]

Health costs are set to increase—but mostly due to factors other than aging. The baseline EU aging projections simulate the impact of demographic change by using current age-related health spending profiles by age and projecting health costs forward based on the changing age structure of the population.[24] There are a number alternative scenarios, showing a range of public health spending cost rises over time depending on assumptions on age-related spending profiles, how economies expand publicly-provided benefits, adopt new technology and how healthy are aging populations. The range of health cost increases seen across these scenarios underlines the range of factors that may influence the future path of public health spending.

Health costs tend to increase in the last few years of life. Health care costs rise substantially in the last years of life. Box 6 shows how public health care costs grow in the last two years of life in Latvia. The rise in deaths predicted to occur over 2010-2060 will then increase costs for the health system. Although death-related costs will rise from demographic bulges, the increase in spending should be manageable. Larger aging generations will bring increased deaths and a rise in the associated health costs in Central European and Baltic countries in coming years. However, the increase in death-related costs is manageable: Central European and Baltic countries will have to absorb about 0.2 percent more of the population dying annually by 2040, a rise in deaths of almost 18 percent compared to 2010. If we assume that health spending in the

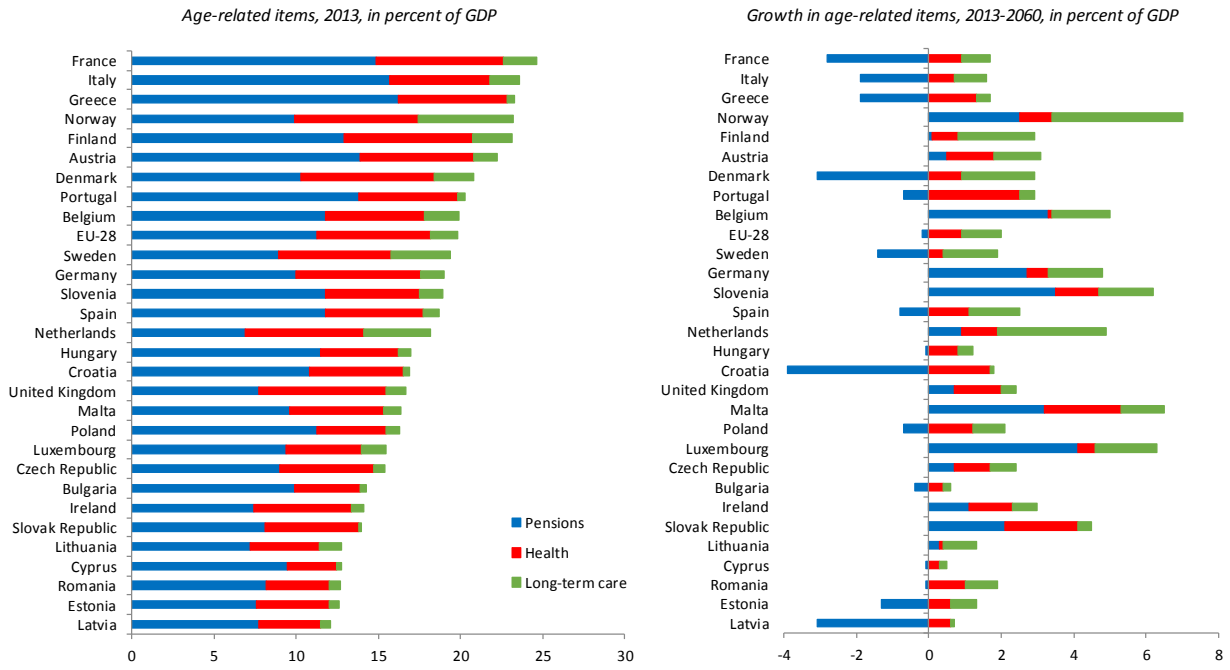
[23] Expenditure projections represent the legal framework in place by the end of 2014 when the calculations were made. Major pension reforms put in place by countries since then are then not reflected in these projections.

[24] Health status improvements are assumed, as well as a slightly positive income elasticity. Alternative scenarios are simulated for health spending in the EU projections, including looking at "death-related costs scenario" and technological change.

last year of life is equal to that of the Netherlands—which spends 11.1 percent of its health budget on the about 1 percent of the population that dies—then a simple calculation would be that the increase in deaths only increases health spending by 2 to 3 percent, all other things being equal. Therefore, the impact of the upcoming rise in deaths on the overall health budget is not extreme.

Figure 22. Pensions dominate age-related spending

Decomposition of age-related spending, 2013 and growth 2013-2060



Notes: Age-related spending here excludes education.
Sources: Based on the European Commission's *2015 Ageing Report.*

Reducing time in sickness is critical for controlling health costs. The poorer health status of the middle-aged in Central Europe and Baltics may lead to "unhealthy bulges" that increase health costs associated with aging. If the time to sickness at older ages shortens, with the period spent with illness or disability expanding, then longer life expectancies may lead to higher lifetime expenditures on care. Less time spent sick at older ages before death, i.e. healthy aging, therefore plays a key role to containing the health costs associated with longer lives. Strategies to reduce disease in the middle-aged now would still pay dividends in terms of reducing the burden of disease and associated costs when this cohort reach old age. If Central European and Baltic countries can move towards a scenario where extra years of life are lived mainly in good health, then health care costs and demands on health services are likely to be reduced throughout life, regardless of life expectancy.

Overall, however, aging is not the most important factor in driving health costs: the adoption of new health technologies is the key cost driver. Health care costs have been rising over time for all age groups, not just the elderly (Morgan and Cunningham, 2011). When trends in costs are analyzed over time, it is revealed that non-demographic drivers such as advances in

health technologies, income and labor actually have more impact than aging. Of these, technology is by far the most significant factor (Smith et al., 2009). In many Central European and Baltic countries, there is increasing demand for technological solutions and weak cost control mechanisms. How countries react to medical technological advances has been and will remain the critical driver of cost pressures in health systems (Smith et al., 2009; Newhouse, 1992). Indeed, 25 percent to 75 percent (and averaging around 50 percent) of growth in health expenditure in high income countries is considered to be driven by technological changes (Sorensen et al., 2013), far surpassing any impact of aging. Although technological innovations have the potential to improve health status while creating cost efficiencies, costly product innovations to alleviate diseases appear to have dominated cost-saving process and preventive innovations in recent decades (a trend which contributes to the magnitude of death-related costs) (Zweifel, 2003; Baumol, 2012).

The demand for long-term care will grow as the "oldest-old" share of the population rises. Even if populations are healthier, the increase in deaths and the share of the very elderly in the population will result in greater demand for long-term care. In addition, if female labor market participation is to increase in response to the decline in the working-age population, then countries will have to make up for the loss of a large proportion of their mostly unpaid caregiving workforce. Given low savings among the population in many of the poorer EU countries, the public sector will likely play a large role in providing the necessary eldercare. Currently, many Central European and Baltic countries provide limited long-term care services and these countries are not projecting large rises in long-term care services.

The question then is if increases in public spending are needed to cover aging, how can they best be prioritized and financed? The limited private savings of the current 50 plus generation indicates that at least for the next few decades there will be a large reliance on public provision of social spending (if poverty reduction is to be maintained and health inequalities reduced) compared to richer aging economies where people have more private savings. Increasing revenues is not an option in many Central European and Baltic countries where tax pressure is currently high. Raising labor taxes would be particularly difficult given concerns about competitiveness and the impact that any rise may have on informality. Certainly, borrowing to pay for such current spending needs would not be a sustainable option. For most Central European and Baltic countries, the best option would be to reorient spending towards needed social spending to support an aging population. Of course, increasing overall public spending efficiency and ensuring that aging-related spending is as cost effective as possible will be critical.

In terms of prioritization, the first question ought to be: what is medium-term and what can help now? Increasing labor market participation can have immediate impacts on growth and the sustainability of pension systems, and in addition it can help ensure people have higher incomes and more savings for later years. Preventing people from leaving the labor market at later ages is important as evidence shows that once people exit, it is very hard for them to return. Increasing female labor market participation at all ages will require support for child and elder care. Given that almost one in three current workers are 50 years or older, there is a need to change

employers' bias against older workers and to put in place policies to support their productivity. Measures to support health improvements will take longer to show dividends, but gains can be considerable and sustained. Not only will this fight early deaths seen in many Central European and Baltic countries, but making people healthier is important for labor market productivity and for easing the fiscal costs associated with an older population.

Prioritizing, increasing efficiency and making trade-offs in public sector spending can lead to sustained gains. Countries in the region need to be bold in making changes to their spending and programs, including in social sectors. During the 2008/2009 crisis, governments often opted for cuts in areas where savings could be realized quickly but not necessarily strategically, sometimes postponing further important structural reforms. In particular, the reform experience in Central European and Baltic countries has long shown that pension expenditures exhibit a very high inertia in times of recessions and even extremely reform-minded governments have found it difficult to make changes to such programs. The preparation for dealing with aging pressures should begin now and will only be successful if the population at large understands and supports reforms.

Box 6. Latvia: Time to death as driver of public healthcare costs

For health costs, time to death is important—not time from birth. It has been shown for OECD countries that health expenditures spiral in the last few years of life, and particularly in the final year (Lubitz and Riley, 1993; Spillman and Lubitz, 2000). As an individual nears death, their worsening health status tends to unleash a snowball of increasingly intensive treatment and frequent hospitalizations that is more concentrated than any other period in their life. Being close to death is often accompanied by increased morbidity and disability, necessitating not only costly medical interventions, but also support for daily living. Studies for the United States have estimated these so-called death-related costs to be about 25 percent to 30 percent of total Medicare health expenditure—Medicare covers mainly the population aged 65 and over and the disabled (Lubitz and Riley 1993; Felder 1997; Hogan et al. 2001). European studies have found similar end-of-life spending shares, with the majority of these costs incurred from hospital and nursing home care. For instance, in the case of the Netherlands, an analysis of health insurance data linked at the individual level with data on the use of home care and nursing homes and causes of death in 1999 finds that 11.1 percent of total expenditure of the included health services was due to final year of life costs or 26.1 percent of spending on the retired Dutch population aged 65 years and older (Polder et al., 2006).

Evidence from Latvia is consistent with total health costs being closely related to time to death and not to the age structure of the population. As age and death are correlated, age is often blamed for this increase in health costs whereas the causative factor is actually proximity to death. Administrative data from the Latvian National Health Service for survivors and individuals who have since died for the period 2009-2011 shows that public health spending is four times higher for the deceased compared to survivors (see Figure B6.1). Given that the data excludes those who are presumably healthier and did not access National Health Services, the exercise downplays the difference between survivor and end-of-life total public health care costs. Inpatient care and medications that are financed by the Latvian National Health Service are responsible for the big differences between the two groups of patients. How does Latvia compare to end-of-life cost studies for wealthier OECD countries such as Switzerland and the United States? As with the other countries, death-related health costs are much higher for the younger in the population that die. Per capita public health costs decrease after the age of 80. But in

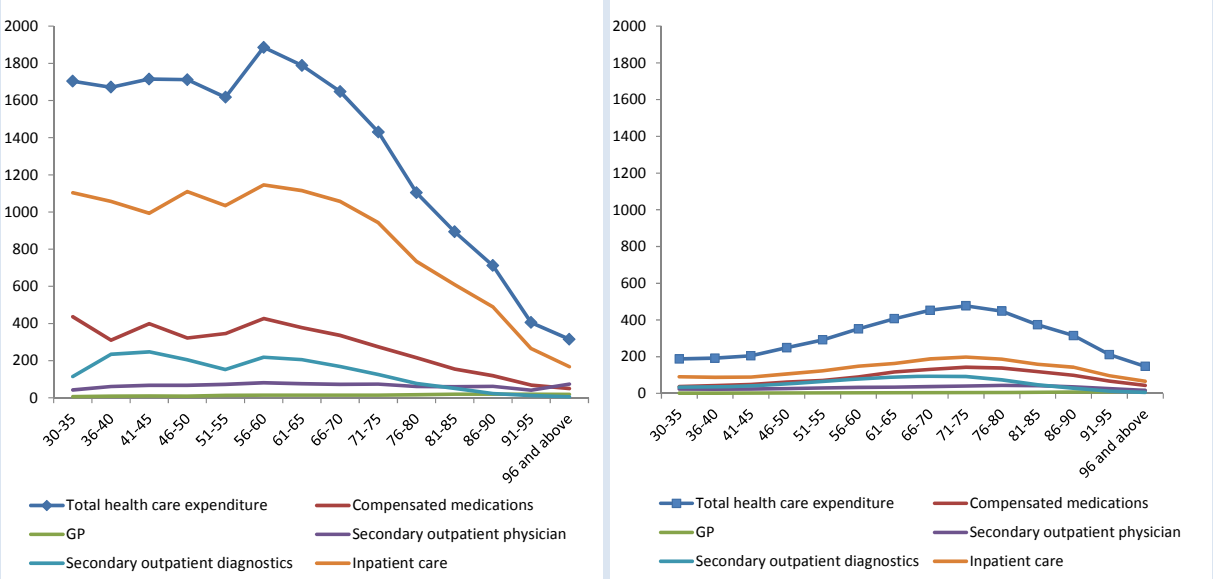
Latvia the fall in spending is greater for the older population than in the richer OECD countries. This may be due to selection effects as not many people get to this age or it could be partly because many of the people who survive past 80 are richer and paying for private services. From the administrative data used in the analysis, these aspects cannot be judged. What is clear is that the cost of secondary outpatient diagnostics services decrease for the oldest old.

Figure B6.1. Public health costs are much higher for those close to death and in higher for the younger people close to death

Public health spending by age group, expenses per patient in Latvian Lats

(a) all

(a) Deceased Individuals *(b) Survivors*



Note: The Latvian National Health Service (NHS) administrative data for total public health expenditure are from 2009 to 2011. The NHS mortality data used is from 2011 to 2014. Data covers patients (deceased and survivors) who used at least one health care service paid by state during the two-year period. Survivors are those who didn't die in 2011-2014.
Source: Based on administrative data from Latvia's Health Insurance Service.

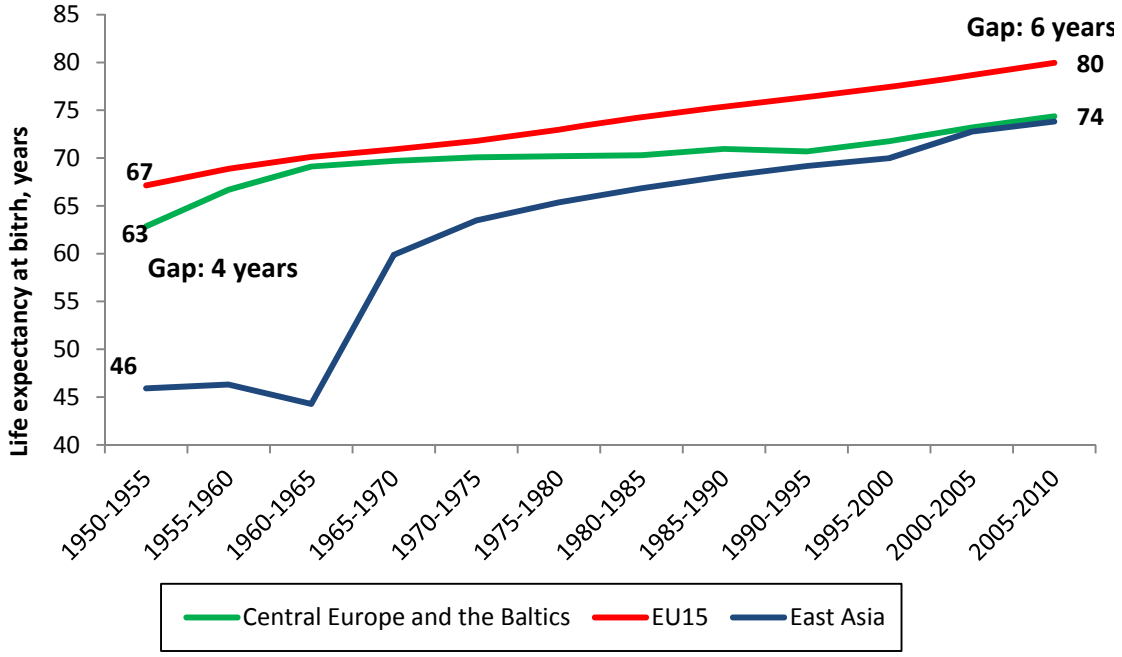
Source: Mandeville and Sinnott 2015.

5. Healthy Aging

Lives are not as long as they should be in Central Europe and the Baltics. Life expectancy gains stalled relative to other countries in the late 1960s and, while progress has resumed, the countries in Central Europe and the Baltics are behind the life expectancy attained in other aging countries. In 1970, in Bulgaria, Poland, Greece and Germany, a person could expect to live 71 years at birth. At the same time, people in Japan could expect to live around 72 years and in Korea only 62 years. By 2012, life expectancy had climbed up to 81 years in Germany, Greece and Korea, and to 83 years in Japan; however, it is only 74 years in Bulgaria and 77 years in Poland. Premature mortality primarily affects the middle aged, for whom mortality has shown little improvement in contrast to global trends. Men have done particularly badly in terms of life expectancy gains, with male life expectancy at birth only having grown from 63 to 74 years on average over 1950-55 to 2005-10 (see Figure 23)--lower than the 28 years of life expectancy gains for men seen in East Asia.

Figure 23. Life expectancy has diverged from the better performers in Europe

Male life expectancy at birth, years



Notes: East Asia follows the United Nations grouping and includes China, China, Hong Kong Special Administrative Region (SAR), China, Macao SAR, the Democratic People's Republic of Korea, Japan, Mongolia, and the Republic of Korea. The "gap" shows the difference in life years of expectancy between Central Europe and the Baltics and East Asia.

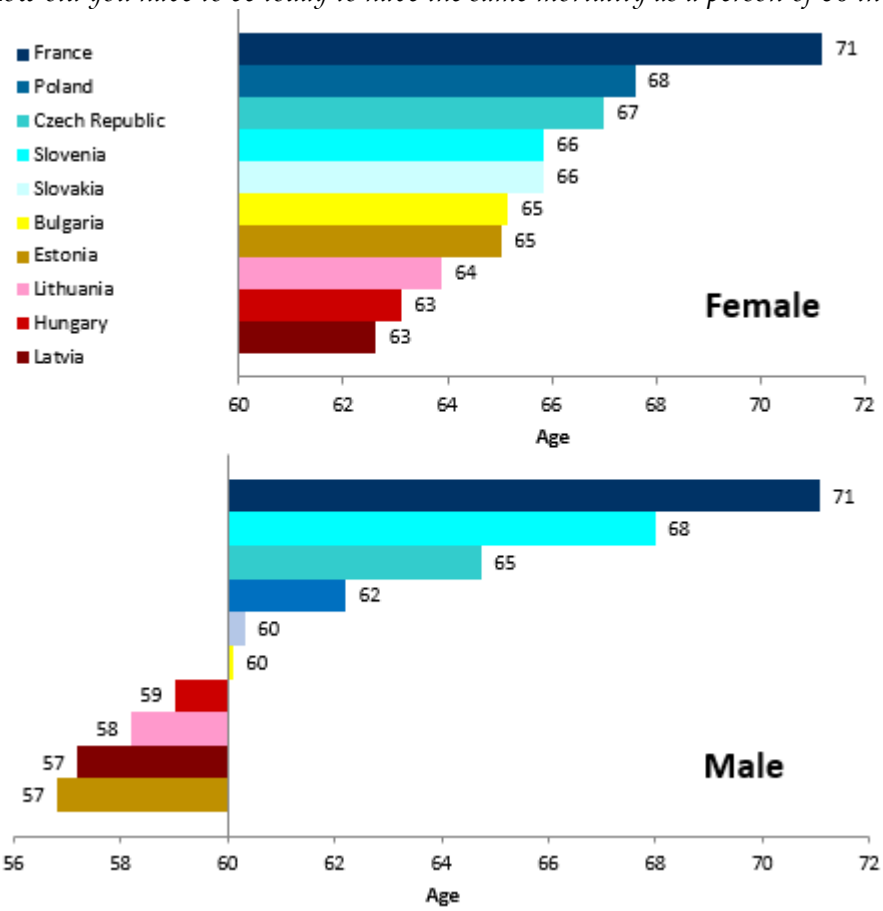
Source: UN Population Division (2013).

Middle-aged men in Estonia, Latvia, Lithuania and Hungary fare particularly badly. If we take the mortality rate of 60-year old men in 1959 and ask at what age people have an equivalent mortality rate in 2009, we get a sense of the intervening gain (or loss) in life (Milligan

and Wise, 2012). Figure 24 shows these "mortality equivalent ages" in selected EU countries. In France a 71 year-old man in 2009 had the same risk of dying as a 60 year-old man in 1959, underscoring the almost constant lengthening of life in most high-income countries over the last 165 years (Christensen et al., 2009). Yet in several EU countries, particularly the Baltic countries, a man in 2009 is worse off than his predecessors half a century ago. For example, in Estonia, a 57 year-old man in 2009 had the same risk of dying as a 60 year old in 1959. Women are in a better position in all countries studied, living longer than their counterparts in 1959 and their male compatriots, although still lagging behind the gains seen in richer countries like France.

Figure 24. Men in Estonia, Latvia, Lithuania and Hungary 'feel' worse at 60 in 2009 than they did in 1959

How old you have to be today to have the same mortality as a person of 60 in 1959



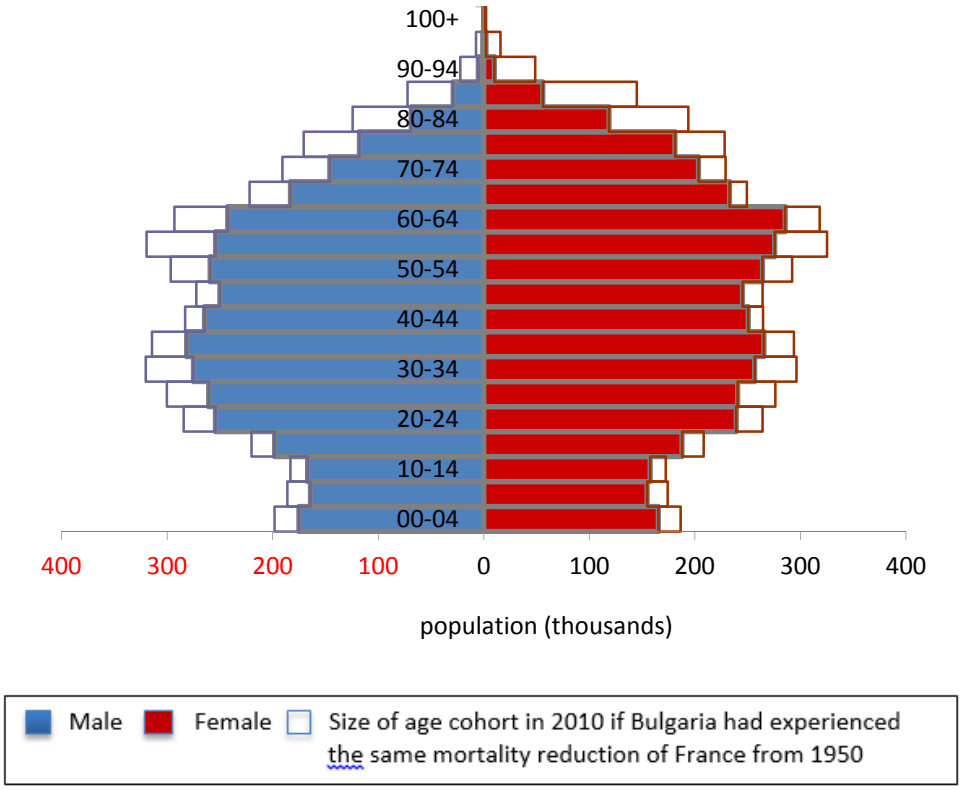
Source: Human Mortality Database. University of California, Berkeley (USA), and Max Planck Institute for Demographic Research (Germany), www.mortality.org, accessed 2 February (males) and 1 May 2014 (females).

This persistent premature mortality has had a significant impact on population structures and labor forces in the EU countries with lagging health outcomes. For example, the divergence in mortality rates between France and Bulgaria equated to 1.3 million life years lost in Bulgaria in 2010 (Global Burden of Disease Study 2010, 2013). In order to assess the accumulative effect of these different trajectories, we estimated what the population of Bulgaria would look like today if it had experienced the same reductions in mortality as France from 1950 onwards. Figure

25 displays the resulting population pyramid. Overall, if Bulgaria had experienced the same mortality reductions as France since 1950, its labor force—here defined as the population aged 15-64—would be 13 percent larger than it is today.

Figure 25. What a difference sixty years makes

Bulgaria's population in 2010 if mortality had declined as in France from 1950



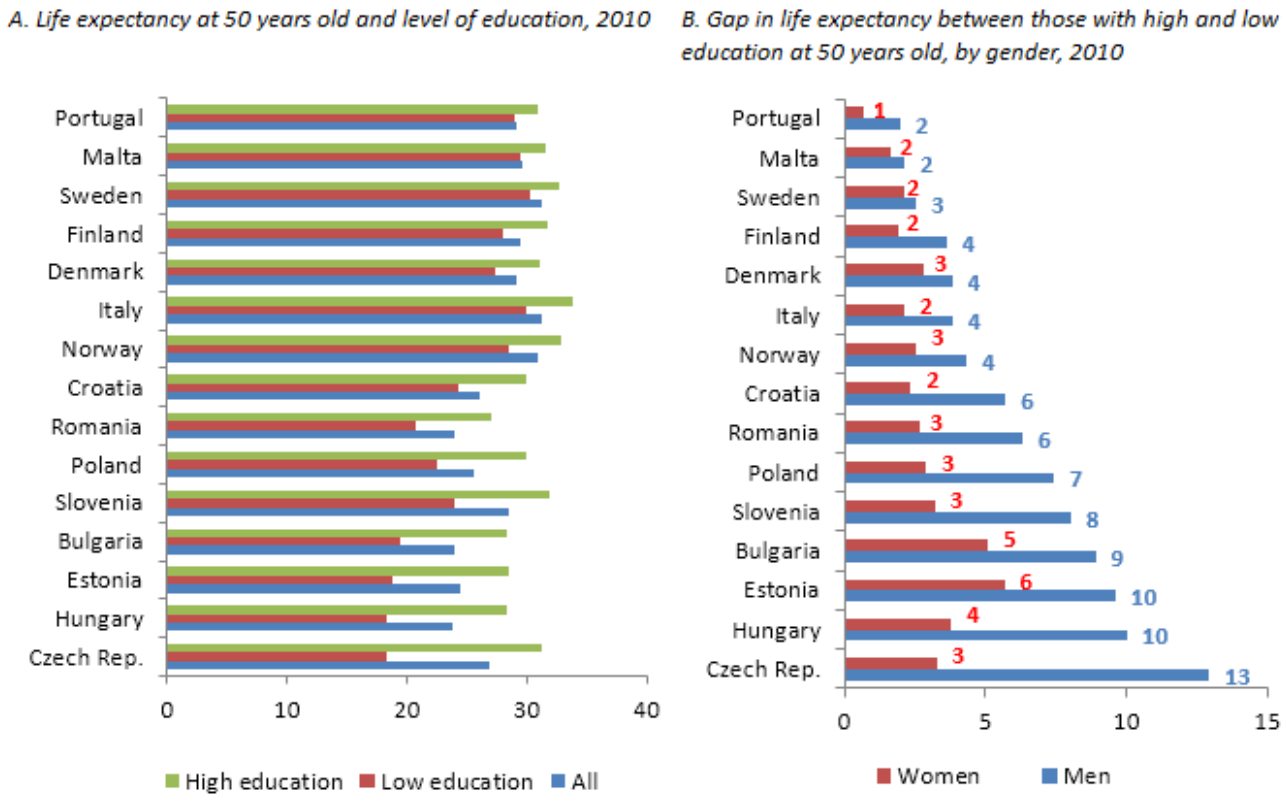
Source: World Bank calculations based on UN Population Data (2013).

Much of the lower life expectancy in Central Europe and the Baltics is explained by the higher mortality rates among the less well-off. The factors leading to these inequalities are complex, but include differing levels of health-related risky behaviors. Large gains in life expectancy can be made by targeting those with the shortest lives. When life expectancies at age 50 are disaggregated by levels of educational attainment—a common measure used to examine socioeconomic differences in health outcomes—an "education premium" is revealed (see Figure 26). This gradient is larger for men than for women, wider in countries with shorter life expectancies, and more severe in Central European and Baltic countries. For instance, the average life expectancy at age 50 for men with tertiary education in Central Europe and the Baltics[25] is around 8.6 years higher than for men without upper secondary education, a larger difference than

[25] The average is taken for all countries for which data is available.

the 6.3 years found for the United States.[26] To close the longevity gap with the EU-15 countries, the less advantaged in society (with low education here used as a proxy) will need to live longer. One study has found that excluding the group of people with lower education from calculations would reduce overall mortality by two-thirds in Estonia and Lithuania.[27]

Figure 26. A large part of lower life expectancy is explained by higher mortality of the less well-off



Notes: All EU Member States with available data included. Low education is defined as ISCED 0-2, that is attainment of pre-primary, primary or lower secondary education. High education is defined at ISCED 5-6, that is attainment of tertiary education.
Source: Eurostat.

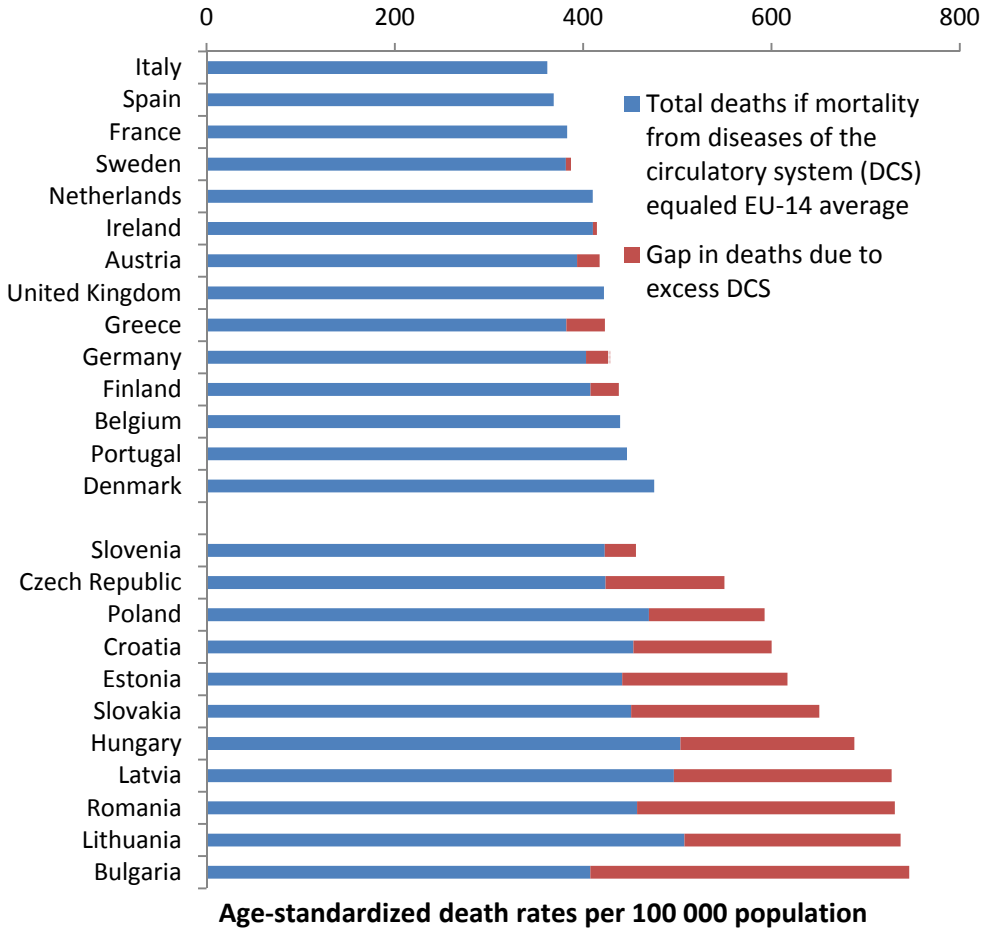
The achievement of longer lives in the EU-15 countries was primarily due to widespread measures to reduce the prevalence and severity of cardiovascular disease, an effort known as the "cardiovascular revolution". Such a shift has not yet been fully achieved in Central Europe and the Baltics and today the region loses more years to cardiovascular disease than to any other cause. Almost half the gains in life expectancy from the cardiovascular revolution can be attributed to the reduction of risk factors such as smoking, high blood pressure and high

[26] Pijoan-Mas and Rios-Rull (2014) find for the U.S. that at age 50 the difference in life expectancy for college graduates versus individuals without a high school diploma is 6.3 years for males and 5.8 years for females.
[27] Avendano et al 2010.

cholesterol.[28] These require better management and indeed behavioral change on the part of populations, and reducing cardiovascular disease is a key policy target to drive any convergence in life expectancy (see Figure 27).

Figure 27. Mortality due to cardiovascular diseases explains much of the life expectancy gap between Central Europe and Baltics and EU-15

Influence of diseases of the circulatory system on mortality, 2010



Notes: Age-Standardized death rates per 100 000 shown for total deaths all causes for 2010, covers all ages and both men and women. Data for Luxembourg is not available. The EU-14 country groups is equivalent to the EU-15 excluding Luxembourg.

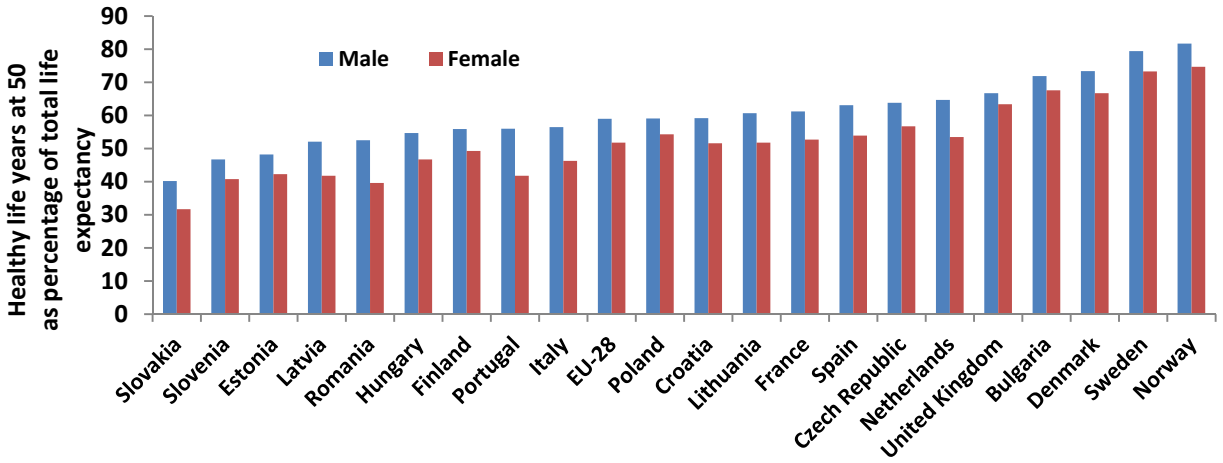
Source: World Bank calculations based on The WHO Mortality Database.

Reducing disability and ill health in Central Europe and the Baltics' aging population, however, may be more difficult than reducing mortality. People in EU-15 countries have been benefiting for some time from health strategies aimed at reducing the risk of disease and disability, leading to a shift from severe to milder disability. In contrast, people in many Central

[28] Reducing smoking rates and managing other risk factors has accounted around half the benefits seen in the Western Europe, with improved treatment for the other half (Smith and Nguyen 2013).

European and Baltic countries are starting from a worse point. When levels of disability are broken down by age, older people in Central Europe and the Baltics are found to be living with more disability compared to Western Europe and advanced economies worldwide (Figure 28).[29] Middle-aged populations report worse health and more functional limitations than those in the EU-15. Those with less education report worse health across Europe, particularly in Central Europe and the Baltic countries. This higher level of disability now will be exacerbated by the predicted increase in age-related diseases—such as cancer and dementia—in the future.

Figure 28. At 50, People in Central Europe and the Baltics live less of their remaining life in health



Note: Healthy Life Years, also called disability-free life expectancy, measures the number of remaining years that a person of a certain age is still supposed to live without disability. The figure shows healthy life years at 50 in percentage of total life expectancy for 2011.
Source: World Bank calculations based on Eurostat.

While many countries in Central Europe and the Baltics are underperforming in terms of life expectancy and the disability burden compared to their EU-15 neighbors, progress is being made in achieving the "cardiovascular revolution". After decades of stagnation, life expectancy at birth rose in all countries in the past decade, with Estonians achieving five years of additional life expectancy compared to zero over the three decades from 1970. There is evidence of reductions in risky behaviors, for example a fall in daily smoking, and improvements in treatments in some countries, for example a rise in diagnosis and treatment of high blood pressure. However, there are still significant gains to be made across all countries. Slovenia is the

[29] The figure shows healthy life expectancy as a share of overall life expectancy and measures the proportion of remaining life expectancy that on average an individual can expect to live without ill-health without disease and/or injury. Years of ill health are estimated by summing estimates healthy life years lost due to disability (YLD) across a comprehensive set of disease and injury causes. The estimates of YLD draw on analyses carried out for the Global Burden of Disease 2010 study (see Murray et al. 2012). The disability weights and prevalence estimates are documented in WHO (2013).

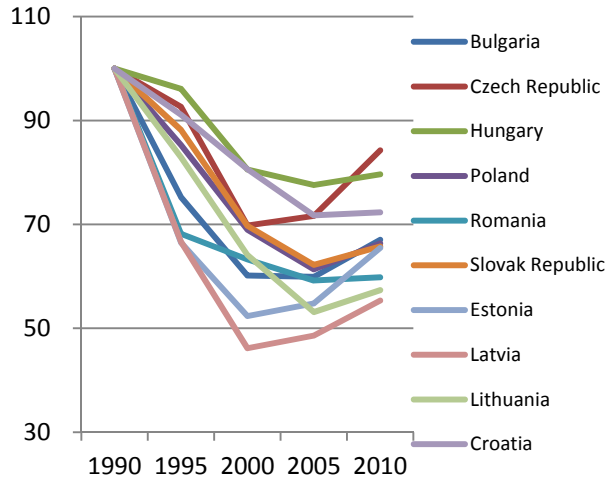
only country that approaches the average life expectancy at birth in the EU-15 countries. Bulgaria, Latvia, Lithuania, Romania, Hungary and Estonia have the most to make up for in terms of health convergence. Making more progress on targeting risky behaviors and raising detection and diagnosis of diseases of the circulatory system will be important elements of achieving the cardiovascular revolution. Reducing inequality through ensuring access to health services, but also through a wider agenda focused on reducing socioeconomic disadvantages over the life course, will be important moving forward. As the cardiovascular revolution is achieved, cancer rates are predicted to increase in the future. Screening rates for treatable cancers, such as breast, cervical, colon and prostate, are low in many countries and will have to be expanded.

6. Fertility, Migration and Aging

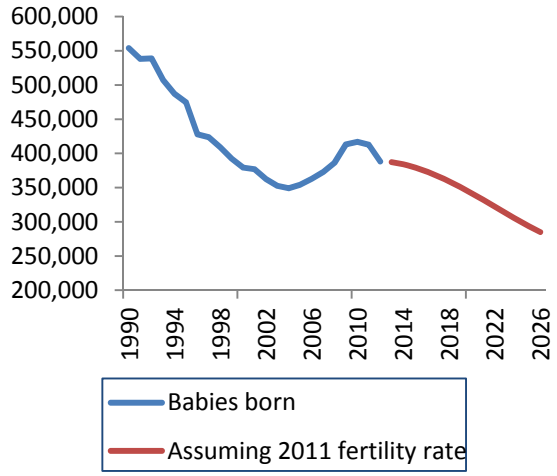
It would take decades for rises in fertility to substantially impact on the population structure. Current low fertility, even if it rises in the future, has a multiplier effect. Lower numbers of children in one cohort lead to a smaller childbearing cohort, which in turn results in lower numbers of children in subsequent cohorts. Figure 29 (a) shows the stark decrease in the number of children under five years old between 1990 and 2010. Figure 29 (b) shows this fertility path for Poland. Even if fertility rates remained constant at 2011 levels, the number of babies born would continue to decrease in the future. To keep the number of children at 2011 levels, the number of children per family would need to increase by 40 percent by 2025. The projected decline in births is attributable solely to the reduction in the cohorts of potential parents, which was predetermined by fertility declines twenty years ago. This demographic momentum underlines the limited effect that increased fertility rates today can have on mitigating the demographic shocks in the coming decades. Over the longer-run, however, a rise in fertility would contribute to re-balancing the population structure and would increase the share of the working-age population.

Figure 29. Low fertility now has a multiplier effect

A. Number of children under age 5 compared to 1990



B. Births in Poland in 1990-2011 and projected future births through 2026

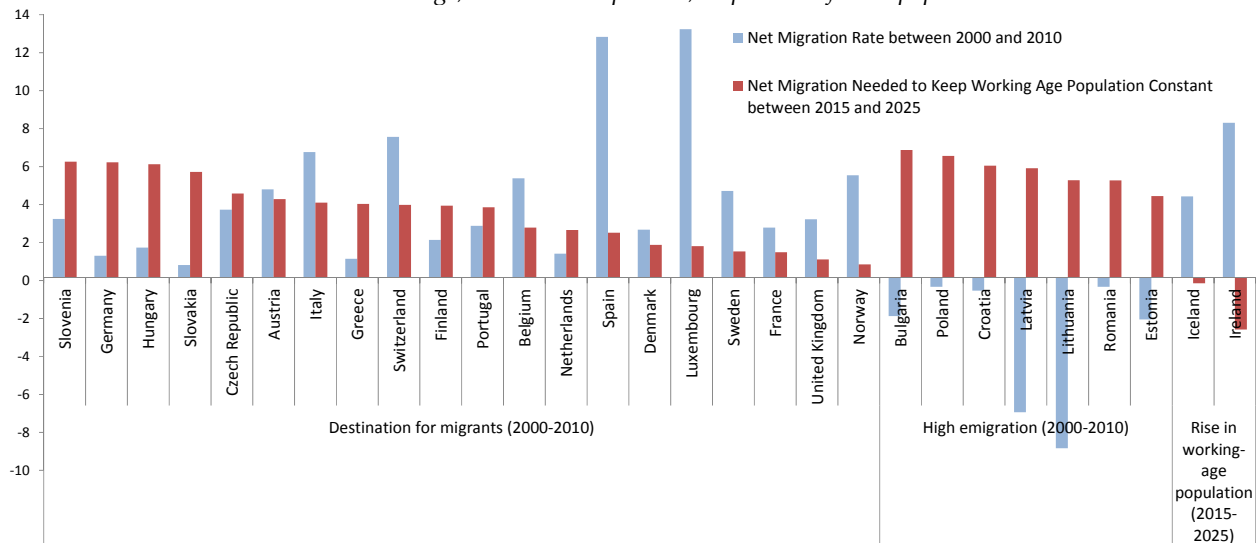


Source: Based on United Nations Population Division (2013).

Immigration can contribute, but is unlikely to fully compensate for the fall in the working-age population in Central Europe and the Baltics (Figure 30). All EU countries, with the exception of Ireland, will require immigrants to keep the working-age population from shrinking. Among the EU countries, Central Europe and the Baltics would need to attract the most immigrants, and at a rate only seen by the most attractive EU-15 destination countries, to offset the anticipated decline in the working-age population during the next 10 years. However, inward migration can go some way towards making up for falling working-age populations and having an open immigration policy would contribute to the productive aging agenda.

Figure 30. Migration is unlikely to make up for the natural decrease in the population

Cumulative change, various time periods, in percent of total population



Note: The natural decline in the working-age population between 2015 and 2025 is derived from population projection data under the zero migration scenario of United Nations' Population Division (2013).The figure includes all EU or EFTA area countries. The figure compares net migration flows over the 2000-2010 to what would be needed to maintain the working-age share of the population constant over 2015-2025.
Source: Based on United Nations Population Division (2013).

6.1 Migration[30]

Central European and Baltic countries are made older due to migration, while the EU-15 gets younger. Only the Czech Republic, the Slovak Republic and Slovenia have positive net migration rates; the rest of Central Europe and the Baltics lose population to out-migration and don't attract many immigrants. By contrast, all EU-15 countries are receivers of immigrants. Migrants from Central Europe and the Baltics tend to be younger than natives. For example, most Baltic and Polish emigrants depart at between 15 and 34 years old. Hence, younger age groups shrink faster than the population in general, thus accelerating aging.

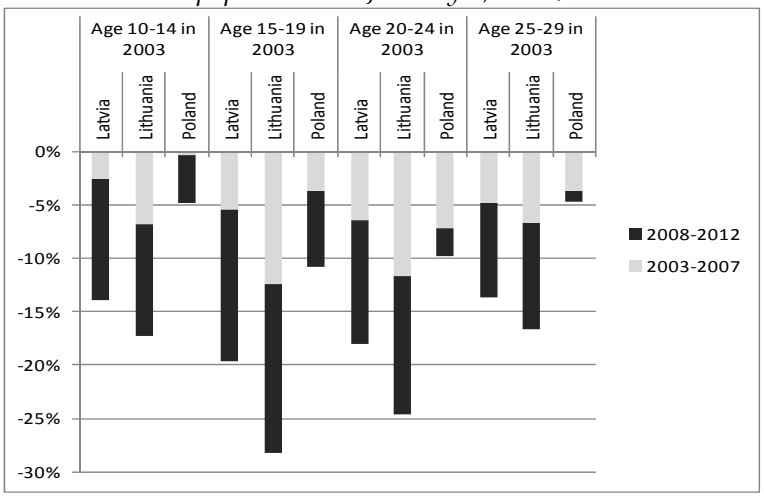
The most mobile countries—the Baltics and Poland—lost sizable shares of their younger populations to emigration. Tracking the size of youth cohorts over time gives some idea of the effect of post-EU enlargement migration on younger generations given that we can assuming these age cohorts are almost unaffected by natural change. Figure 31 illustrates the effect of migration after enlargement on youth cohorts by tracking their size over the period of 2003-2012. There was a substantial fall in the size of cohorts aged 15-19, 20-24 and 25-29 years since 2003 in Latvia, Lithuania and Poland. Latvia and Lithuania show the biggest drop in the size of these younger cohorts, which accelerated during the crisis and post-crisis five years (2008-2012). In ten years, Latvian cohorts aged 15-19, 20-24 and 25-29 years at the beginning of 2003,

[30] The discussion on the migration experience of Poland and the Baltic countries in this section is based on a background paper for the study: Hazans (2015) *Migration Experience of Poland and the Baltic Countries in the Context of Economic Crisis*.

have sent abroad, respectively, a 20 percent, 18 percent and 14 percent share of their members, while corresponding Lithuanian cohorts in the same period lost to migration 28 percent, 25 percent and 17 percent. These data are based on official population statistics, which may underestimate emigration in the post-crisis period (Hazans 2013). In Poland, given that official population statistics are problematic as they underestimate the actual scale of emigration, Eurostat and OECD data is used to estimate the number of Polish expats aged 20-24, 25-29, 30-34 and 35-39 at the beginning of year 2013, in the EU and European Free Trade Association (EFTA) countries,[31] as well as the number of Polish expats from the same cohorts who were there ten years earlier (i.e. aged 10-14, 15-19, 20-24 and 25-29 at the beginning of year 2003). This estimates the decline in the size of these age cohorts, respectively, as 5 percent, 11 percent, 10 percent and 5 percent of the size of these cohorts of the Polish population since the beginning of year 2003. This losses are quite substantial although smaller than those found in Latvia and Lithuania.

Figure 31. Younger generations decreased in size due to post-EU enlargement immigration in the most mobile Central European and Baltic countries

Change in the size of selected age cohorts. Latvia, Lithuania and Poland, 2003-2012 (in percent of population on January 1, 2003)



Notes: For Poland, the data presented diverge substantially from the official Polish population statistics which underestimate emigration.

Sources: Hazans (2015) based on Latvia and Lithuania: Population statistics (Eurostat) and own calculations. Poland: Eurostat and OECD statistics on Polish nationals among population of EU and EFTA countries and own calculations.

Migration has become the new norm for citizens from the most mobile Central European and Baltic countries—Latvia, Lithuania, Estonia and Poland.[32] Prior to accession—despite high unemployment and large wage differentials with EU-15 countries—the high costs of migration and the unfavorable institutional framework led to only limited out-migration flows with highly-skilled and tertiary educated workers being over-represented. With accession and gradual implementation of free movement of labor within the EU and as a result of growing migrant networks, the costs of job search abroad and migration decreased, while the demand for

[31] Available data from non-European OECD countries were not detailed enough.

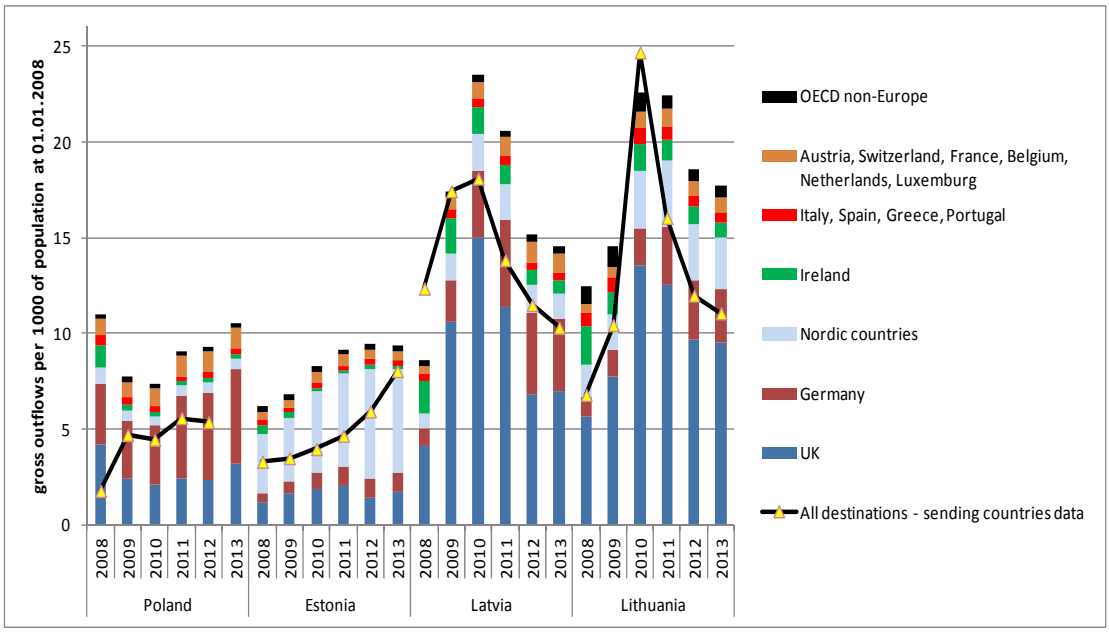
[32] Hazans (2014).

migrant labor in EU-15 countries was growing, and higher income and better working conditions abroad operated as strong pull factors, especially for the lower-skilled and less educated workers. As a result of these factors, in the five post-accession years from 2004 to 2008, Estonia, Latvia and Lithuania lost to a share of their population emigration equal to 2.0 percent, 3.2 percent and 5.3 percent, respectively, while Poland lost 2.8 percent.

The crisis spurred on migration in the Baltics and despite better economic conditions did not halt it in Poland. During the crisis—employment was particularly hard hit over 2009-2010—push factors, mainly joblessness and wage cuts, but also the inability to pay back loans, weak social protection systems and uncertain prospects for the future led to a substantial increase in out-migration in the Baltics: outflows doubled or almost doubled compared to the pre-crisis levels in 2009 in Latvia, in 2010 in Lithuania and in 2012 in Estonia. In Poland, on the contrary, where growth performance was stronger, emigration slowed down, while return migration intensified given the worsening economic outlook of receiving countries. Even so, during the two crisis years the stock of Polish emigrants in EU/EFTA countries increased by 10 percent. Most of those who left the Baltics and Poland during (and after) the crisis were not risk-takers: on the contrary, they perceived staying as too risky, and destination countries as a safe haven. This implied a strong shift from temporary emigration of breadwinners towards long-term or permanent emigration of entire families.

Figure 32. Emigrants have headed to the economies that first opened their labor markets

Gross emigration of nationals from Poland and the Baltic countries to main OECD destinations, 2008-2013



Source: Hazans (2015) based on Eurostat and OECD data on immigration of foreigners by nationality; Ireland and the UK data on allocation of social security numbers. For 2013, data were available on outflows to the UK, Germany, Nordic countries, Ireland, the Netherlands and Austria (these destinations covered more than 90 percent of outflows in 2012); the remaining flows were (conservatively) predicted.

The choice of destination countries for migrants during the post-accession period has unsurprisingly been heavily influenced by policies toward EU new member state migration. Ireland, the UK and to a lesser extent Sweden became the destination of choice from May 1, 2004, when these countries became the first to open their borders to new EU member states. Flows from Estonia to Finland sped up since 2006 when conditions were eased for migrants (check). On opening its labor market for EU new member states in 2011, Germany increased its share in the Baltic and the Polish emigration flows (Figure 32).

It is likely that emigration will continue to be high, with pull factors and non-economic reasons mainly explaining intentions to emigrate. The vast majority of the population in the Baltics and Poland now have close relatives or friends who have moved abroad. Migration flows are shaped by these migrant networks, along with already formed intentions to emigrate in the future.[33] The expectation is that the Baltic/Polish diasporas will keep growing in the years to come.

Push factors have been strong in countries that lost younger workers to migration.[34] These include joblessness and wage cuts, but also lost confidence in the future. Individuals and families typically move when and where they expect to be better off than at their current location. There has been a shift towards longer-term emigration in recent years in Poland and the Baltics. Why has this occurred? Consultants from European Employment Services (EURES) in Latvia found that the strong shift from temporary emigration of breadwinners toward long-term or permanent emigration of entire families was associated with people wanting to find permanent skilled employment and social security rather than the lower skilled temporary employment that was common in the past (Table 2). Evidence from surveys on emigration intentions in Estonia conducted in 2006, 2010 and 2013 suggests that both economic and non-economic push factors, including better social security abroad, sharply increased. It is not clear whether the incentives to emigrate will weaken substantially as economies recover from the 2008/09 crisis.

Better jobs and favorable tax and benefit regimes for low-income families may reduce the push factors that drive emigration. Given that most emigrants are lower part of the distribution of income earners prior to leaving their home country, supporting further low-income families by raising minimum non-taxable income and allowances for dependents, increasing the role of targeted rather than universal benefits and other ways of promoting progressivity seems to be the right direction in further developing the tax and benefit system. General business climate improvement measures to aid job recovery are additionally important. As there is a high proportion of former registered unemployed among emigrants, investments in training programs for the unemployed that help them find jobs may help.

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[33] Survey evidence points a rise in the intension to emigrate. In Latvia, the share of adult working-age (18-64 years) population prepared to accept an offer implying long-term emigration has increased from 55 percent in 2010 to 68 percent in 2012. In Lithuania, the share of potential emigrants in the population group aged 18 to 75 increased from 40 percent to 50 percent between 2011 and 2012. There has been a slight decrease in Estonia, where the intention to migrate fell from 36 percent to 34 percent between 2010 and 2013.

[34] According to surveys reported by Holda et al (2011), the share of Polish emigrants staying in the UK (respectively, Ireland) for more than three years increased from 14 percent in 2007 to 39 percent in 2009 (respectively, from 10 percent in 2007 to 32 percent in 2009).

Table 2. Changing profile of EURES clients in Latvia, 2004-2010

2004-2007	2008-2010
Planning to move alone	Planning to move with family
Looking for temporary, low-skilled job	Looking for permanent, skilled job
Minimal knowledge of foreign languages	Better knowledge of foreign languages, higher qualifications
Planning to return	Interested in legal employment and social security

Note: Daily records of European Employment Services (EURES) consultants in Latvia.
Source: Hazans (2013: Table 4.6)

High emigration from Central Europe and the Baltics does involve significant challenges, for instance in terms of the potential loss of human capital and the sustainability of the social protection systems of "sending countries", but it also brings benefits. Remittances and increased productivity or salaries upon return are just two ways emigrants bring benefits back to sending countries. The possibility for people to migrate during economic downturns can reduce unemployment. Having a large diaspora can offer benefits in terms of trade, investment, and know-how; in this regard, governments should foster the diaspora's engagement in economic and social development and expand "virtual borders".

Shrinking numbers of younger workers may increase incentives for Central European and Baltic countries to make more of the available pool of potential immigrants, for example, in non-EU neighboring countries. This would involve an accompanying policy agenda, including measures to facilitate international mobility and the validation of professional qualifications, and to reduce barriers for immigrants to take up formal employment.

6.2 Fertility

Starting in the mid-2000s, a small rise in fertility was experienced in all Central European and the Baltics countries. This follows a general trend of rising total fertility rates in many countries globally, not just those with the lowest fertility. Partly this has been explained by the diminishing impact of women having children later in life on annual fertility (see Box 7). The average age of women at first birth has been increasing since the 1970s, which reduced annual fertility rates, some of which was subsequently recuperated later in life. From 2000 onwards, the rise in the age of women at childbirth slowed and women started to have the children they had postponed. Recent changes in fertility rates suggest, however, that the observed rise in total fertility rates stopped in many countries and indeed reversed in others.

Given continued low fertility, reducing the obstacles to people having children has become an issue of growing importance in the policy agenda of many Central European and Baltic countries. Persistently falling fertility has pressed policymakers into action in many countries, with the aim of reducing barriers to family formation. Indeed, the evidence is that people in general want two children and yet are having on average smaller families that they would like. The gap between intended and achieved fertility is shown in Figure 33. The

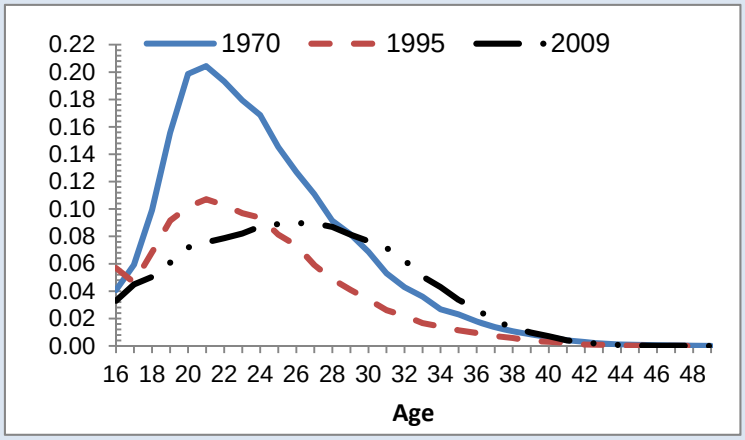
"ultimately intended family size" is estimated by summing the number of children that women aged 25-39 "intend" to have and those already born. The two-child family emerges as the dominant ideal in all European countries.[35]

Box 7. Total fertility Rate as a measure of cohort fertility

The total fertility rate (TFR) represents the number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with current age-specific fertility rates. It is a constructed measure that calculates total fertility by summing up age-specific fertility rates based on actual births that occurred during a year for the female population aged 15 to 50. It is a synthetic measure not based on the behavior of an actual cohort of women, but rather the fertility of all women in any one year. By contrast, the completed fertility rate (CFR) shows the actual fertility rate of a cohort of women over their childbearing years.

The TFR is sensitive to the timing of births: the delaying of childbirth to later in the life cycle lowers the TFR. This has been termed the tempo effect and can depress annual fertility through a delay in the timing of births. Some authors have therefore proposed alternative TFR estimates adjusted for variations in mothers' age at childbirth (Bongaarts and Feeney 1998, and Goldstein et al. 2009, Bongaarts and Sobotka 2012). When a large increase in childbearing age takes places, annual TFR measures underestimate fertility. The tempo effect reduced TFRs during the 1990s due to a postponement of births for cohorts of women born after 1970. However, the pace of the rise of the age of women at childbirth is diminishing and the tempo effect has been found to have fallen in the 2000s. Bongaarts and Sobotka (2012) estimate the average tempo effect on the TFR in 2006 to have been 0.12 births per women. As the "birth postponement' transition completes, the tempo effect should taper out. Figure B7.1 below shows how the transition to higher births has taken place in Bulgaria: the proportion of women having their children at a certain age is highest at age 21 in 1970 and 1995, but this shifts to around 27 in 2009.

Figure B7.1 Age-specific fertility rate profile in Bulgaria

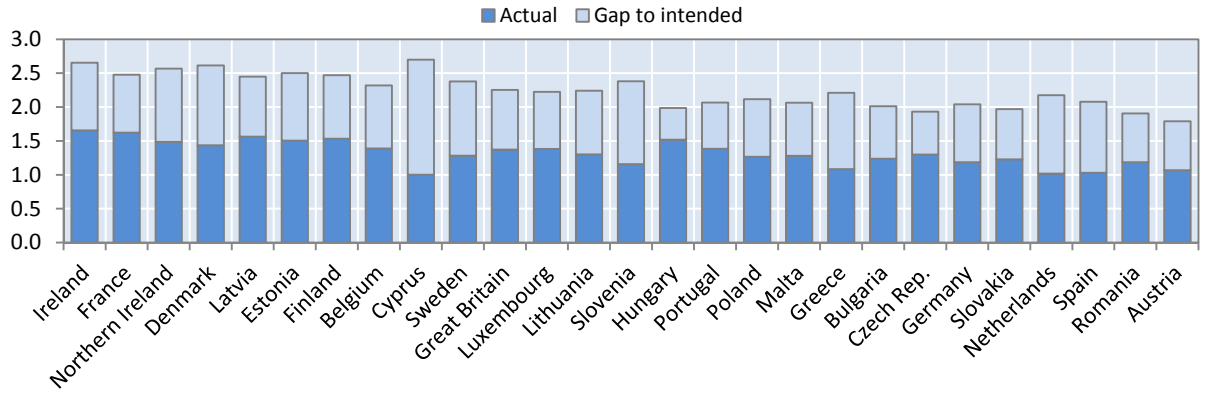


Notes: The figures shows the number of births occurring for the indicated years (1970, 1995 and 2009) per 1,000 women of reproductive age classified by single-year age groups.
Source: Greulich, Dasre and Inan (2014)

[35] European Commission (2014). Respondents to the survey do not say they want two children in every country: the intended family size is particularly small in Italy, Spain and Austria where ideals of fertility are below the replacement rate (Goldstein et al. 2003).

Figure 33. Women have fewer children than they say they want

Actual and ultimately intended number of children of women age 25-39, 2011



Note: Countries are ranked by the decreasing number of ultimately intended family size of respondents. This information is based on survey responses to the question: "And for you personally, what would be the ideal number if children you would like to have or would have liked to have?"
Source: World Bank calculations based on European Commission (2014).

The decline in fertility in Central Europe and the Baltics is mostly due to women not having a second child. Childlessness is unusual. Only 12 percent of women on average have no children in Central Europe and the Baltics, compared to 22 percent in Italy or 24 percent in Germany.[36] However, while in the higher fertility countries like Denmark, Ireland, or Sweden, about 80 percent of women having one child decide in favor of a second child, in some Central Europe and the Baltics countries under 60 percent of women make have two children.

Improving families' economic circumstances is important for increasing fertility in Central European and the Baltic countries. Affordability or economic stability seems to dominate the decision to have a second child in Central European and Baltic countries. Several studies suggest that job instability along with income uncertainty are important reasons explaining low fertility in Central European countries such as Poland, Hungary or the Czech Republic.[37] For less rich EU countries then the general economic circumstances facing families would appear critical in driving the decision for whether or not to have more children.

For the highest income countries, there is evidence that "successful" labor market integration after the birth of a first child seems to facilitate women's decision to have a second child. Recent research points to a re-increase in fertility in several highly developed countries (Myrskilä et al 2009; Greulich-Luci and Thévenon 2014). For these countries, the pattern between total fertility rates and economic development is actually inverse J-shaped. This means that the correlation between economic development, as measured by GDP per capita, and fertility turns from negative to positive from a certain relatively high level of development on.[38] The re-increase

[36] The analysis is based on data on the number of children that women aged 39 to 45 have in each country represented in the 2008 EU-SILC. Data from 2008 was used to avoid any impact of the 2008/2009 economic crisis.
[37] For example, Goldstein et al. (20092013) or Mishtal (2009)
[38] Luci-Greulich and Thévenon (2013) estimate this GDP per capita threshold as around 30,000 USD.

in fertility that comes hand in hand with economic development is particularly striking in countries such as France and the United States. In other countries like Germany and Austria, this rebound is less developed, and fertility has stagnated—despite high levels of economic development—at relatively low levels below the replacement rate. Economic development is thus not sufficient to explain why the fertility rebound occurs in some developed countries, but not in others. Empirical evidence points to female employment as the main explanatory variable behind the re-increase in fertility (Luci-Greulich and Thévenon 2014). In other words, the fertility rebound happens only in those countries in which female employment rates are relatively high.[39] A recent analysis for the EU economies, finds that women being in stable employment after having a first child significantly increases the odds of having a second child (Luci-Greulich, Thévenon and Guergoat-Larivière 2013). These results are stronger for high-fertility countries, such as Denmark, France, the Netherlands, Norway, and Sweden. However, they do not hold in all Central European and Baltic countries, such as Bulgaria, Latvia, Lithuania, Romania, the Slovak Republic, and Slovenia, which have high full-time employment rates, low fertility rates, and a low average probability of a second child. In these countries, the evidence suggests that even for those in employment the costs of having a further child may be too high to bear.

Child care coverage for young children (aged 0 to 2) appears to be the most important family policy instrument for the decision to have a second child in comparison to other policies such as maternity and parental leave or cash benefits.[40] Cross-country studies have investigated the impact on fertility rates of money transfers, leave and childcare policies, and expenditures for families (Gauthier and Hatzius 1997; Adsera 2004; D'Addio and Mira D'Ercole 2005; Hilgeman and Butts 2009; Kalwij 2010; Luci-Greulich and Thévenon 2013). Each instrument of the family policy package (paid leave, childcare services and financial transfers) is found to have a positive influence on average, suggesting that the combination of these forms of support for working parents during their children's early years is likely to facilitate their decision to have children. These results are consistent with the findings of studies focusing on country-specific situations and/or analyzing more precisely the impact of a single measure or a policy reform. Policy levers are not found to have the same weight, however: the provision of childcare services for children under age three have a larger potential influence on fertility (Luci-Greulich and Thévenon 2014). However, from the results of this analysis and those of country-specific studies, country context is clearly important. For countries where unstable or low incomes prevent families from growing, progressive tax and benefit policies may play an important role in supporting families to expand.

[39] Indeed, several OECD studies show that the correlation between fertility and female employment is not negative any more. Most high fertility countries like the Nordic countries and France show high levels of female employment, and in particular full-time employment of mothers with young children.

[40] A growing literature is attempting to assess the influence on fertility behavior of policies targeting families with children (see Thévenon and Gauthier, 2011 for a recent overview).

7. So What's Next?

Countries in Central Europe and the Baltics have made significant progress on many, though not all fronts identified above. But more is needed. While the remaining challenges are clear and certainly not insurmountable, they will require sustained measures on behalf of governments, employers and individuals. Having a wide debate on reform options to build consensus on issues such as raising labor force participation, health inequality, long-term care and pensions is critical.

Improve labor supply at older ages. Demographic forces will affect the size and age structure of the labor force in the countries of Central Europe and the Baltics in the coming decades, but higher labor force participation at older ages can counteract the rise in dependency ratios. Currently, relatively low retirement ages (including generous provisions for early retirement) are not providing appropriate incentives for older workers to remain in the labor force. Moreover, employment protection regulations and the under-utilization of part-time and flexible employment contracts are preventing many older workers from fulfilling their aspirations of gradual retirement. Within the EU, the largest room for improvement exists in Slovenia, Greece, Croatia, Romania and Poland, where employment rates of individuals aged 55 and above is below 53 percent and the lowest in the EU. Hungary, Bulgaria, and Slovakia are performing somewhat better, with between a half and two-thirds of older individuals still in employment, while the three Baltic states and the Czech Republic are doing relatively well, but still show room for further improvements, especially for older age groups.

Increase female labor force participation. Another segment of the working-age population that can be better activated to mitigate the impact of aging demographics is women, particularly young mothers and women around the retirement age. Compared to EU-15 countries, Central European and Baltic countries are doing relatively well, but Poland, Romania, the Slovak Republic, and the Czech Republic have a relatively large female gender gap in employment. To attract women to enter (or to return) to the labor force, policies need to address the availability, affordability, and quality of childcare and eldercare supply. Moreover, equalization of pension ages for women and men is still to be completed, with the exception of Hungary, Latvia, and the Slovak Republic. As noted earlier, such equalization can not only motivate women to extend their working lives, but also facilitate longer labor force participation for men, given the preference for joint retirement.

Improve the employability and productivity of older workers. Several policies undertaken by the Public Employment Services in different countries have been demonstrated to be effective for maintaining employment among older workers and facilitating re-employment of older job-seekers. Besides implementing such public policies, governments can encourage firms to proactively adapt production processes and human resource policies to their aging workforce. Some successful examples include the creation of mixed-age teams, the provision of training—especially on-the-job training—to older workers, investments in workers′ health, adjustments in workplaces to an older workforce, and the assignment of age-specific tasks to match the capabilities of older workers (Bloom and Sousa-Poza 2013; Göbel and Zwick 2012;

Lovasz and Rigo 2013). Dispelling the myths about older workers and raising awareness about age discrimination can also help to counteract employers' negative attitudes towards older workers.

Enhance skills of future cohorts. In countries where the younger generations are shrinking due to the fertility shock, raising the productivity of these generations is important for overall growth. Moreover, there is a significant association between formal education and the length of working lives as well as the probability of involvement in lifelong learning. As shown above, many countries face challenges in ensuring that the upcoming cohorts are sufficiently well skilled to overcome the effect of demographic forces on the size of human capital stock. There are also some worrying lead indicators for the skills level of the young workforce in a number of countries, namely low PISA scores for 15-year-olds. The PIAAC tests of literacy, numeracy and problem-solving reveal additional challenges for the existing 16-65 year-old working-age population. Thus, a critical part of the aging agenda in Central Europe and the Baltic will be to increase the quality of education, and to promote continued learning throughout the life cycle.

Increase health promotion efforts. Public health information campaigns can encourage healthier behaviors and help people take charge of checking and managing any risk factors that raises a person's likelihood of suffering from heart disease and other health problems, such as diabetes. Effective targeting of the less advantaged in society is a key part of any such activity as these groups are more likely to smoke and to engage in problematic alcohol use.

Strengthen provision and access to primary health care. Delivering the majority of health improvements can be done at the primary and outpatient care level. Detecting, treating and monitoring risk factors to achieve major cardiovascular gains can be done at low cost at lower levels of health care services not involving hospitals. Estimates are that at least two-thirds of the life expectancy gap can be addressed at these lower levels of care (Smith and Nguyen 2013). Demands for health budgets to support the legacy of an overly big hospital infrastructure in many Central European and Baltic countries has hampered the development of the non-hospital sector, although progress is being made to transform health services delivery away from inpatient settings. Continuing these advances will be important.

Deliver better health care to the less advantaged. Target and strengthen the delivery of primary care services to less well-off and unhealthier patients prior to the onset of acute conditions will be necessary to close the life expectancy gap given the large contribution of inequality to shorten average lifespans in Central Europe and the Baltics. On the supply side, this will involve strengthening primary care provision and following countries such as France in implementing targeted disease management programs to target risk factors for specific conditions that impact disadvantaged individuals. Improving financial accessibility will also be necessary. Out-of pocket expenditures can be high, particularly in the area of drugs, which account for 75 percent of out-of-pocket spending in Bulgaria and where Estonia and Poland have some of the highest spending shares among OECD economies. There is some evidence to suggest that even low pharmaceutical co-payments can result in non-adherence and lead to higher costs later on for the health system (Smith and Nguyen 2013). At the level of the individual, the

challenge is complex as poor health does not develop in isolation from the general socioeconomic conditions a person faces. Labor market history, access to education and health services throughout the life course, poor living conditions all can contribute to poor health outcomes. The higher incidence of mental health problems among older individuals in Central European and Baltic countries—often associated with poor employment prospects—further compounds this challenge.

Put in place a wider enabling agenda. Pension policy changes in isolation will not be enough as oftentimes the success of pension policies largely depends on inputs from other sectors. For example, higher retirement ages require improvements in health status of the population, increased opportunities for life-long learning and the elimination of rigidities in the labor market preventing older workers from postponing retirement, all of which fall outside the scope of the pension system. Evidence from labor markets suggests that longer working lives are possible. However, important changes to tax and benefit systems, labor market regulations, and social perceptions, are necessary. Making fiscal space for pensions involves the participation of other government entities, such as the Ministries of Economy, Finance, Education, Health, and others, all of which may have to broaden their spheres of interest to accommodate required changes in pension and supportive policies.

Reexamine the role of pension systems and prioritize pension spending. While increasing the size of the labor force expands the policy choices available, it will likely not be enough to preserve the current levels of pension spending across this group of countries. Policy solutions vary between Central European and Baltic economies and largely depend on the magnitude of the projected decline in working-age populations and the size of the low-productivity informal sector. Nevertheless, all countries will likely need to reexamine the role of their pension systems and prioritize pension spending. This would entail deciding on which segments of society need to be protected first and what level of benefits will be affordable. If budgets do not allow earnings-related pensions to be provided for some in addition to poverty protection for all elderly people, priorities will have to be set.

Move retirement duration towards the 15 years that was common in the 1970s. One policy direction entails targeting the duration of retirement at 15 years, as was common in the European pension systems of the 1970s, effectively restricting the number of pensioners. By withholding pensions until people are too old to work, pension systems could afford to retain their earnings-related features without overburdening budgets or exposing pensioners to increased risk of old-age poverty due to long periods of retirement. The current generosity levels in many of Central European and Baltic economies are possible only because of the sizeable general revenue subsidies. Restoring the link between contributions and benefits and eliminating regressive general budget transfers in an environment where contributors are projected to decline means that the pension system will not be able to afford high enough returns on contributions to permit long duration of retirement at adequate benefit levels. Therefore, if counties choose to retain the earnings-related component of their pension systems, they will need to significantly reduce the duration of retirement.

Support better health, but plan for increased disability. Even with improvements in health outcomes, some people will not be healthy enough to work until age 70, and the numbers of people qualifying for disability benefits may increase from current levels. Some countries are already experiencing an upsurge in disability applications, but the full effect of the reforms increasing the effective retirement age has not been yet felt given their gradual implementation. As reforms are fully phased in, countries will likely face larger numbers of people seeking to retire through disability. Therefore, it is important that countries undertake parallel reforms to disability programs to avert a potential spillover from old-age programs. Disability reforms could include tighter eligibility conditions (including length of service requirement commensurate with age, no remaining capacity to retrain, inability to do any job, etc.), increased focus on rehabilitation and retraining, improvements in work environments to accommodate an aging workforce and people with disabilities (often times accommodations for the disabled also benefit aging workers), incentives for employers to retrain and try to place workers with disabilities in alternative positions within the company. Such measures could help ensure that limited fiscal resources available for publicly-financed disability programs are preserved for truly disabled individuals who cannot work. Also, they would empower individuals to remain independent and socially integrated through their jobs for as long as possible.

Savings should play a growing role in providing an earnings-related benefit, although given current saving rates of the 50 plus population this will not occur quickly. If countries chose to shift the focus of their public pension systems away from income replacement and toward poverty prevention, the level of the benefits for middle and high-income groups will likely be extremely modest compared to their pre-retirement income. Therefore, it is important that countries provide an enabling framework for increased private pension savings in any form, in order to help individuals replace some of their former income, above what the public pension system can afford. Automatic enrollment mechanisms, with the possibility to opt out, are a promising vehicle for increased savings, blurring the line between mandatory and voluntary saving. Some government incentives for additional voluntary savings in the form of matching contributions can also be explored, although attention has to be paid to ensure that this policy does not benefit only the higher income bracket. Corporate structures and professional organizations can also be enlisted to raise pension savings levels.

Savings are low, however, as are wages for many people, and it will take time for citizens to have sufficient savings to cover retirement. Analysis from Poland shows that currently working cohorts aged 20-50 will have to save on average about 10 percent of their annual earnings to guarantee the level of pension generosity enjoyed by current pensioners and those close to retirement (cohorts that acquired rights under the old defined-benefit system).[41] Available data suggests that current wealth accumulation among cohorts aged 50 and over is low in Central Europe and the Baltics, indicating that increased savings as a tool to supplement retirement income is primarily applicable to younger cohorts—which are also the ones facing the steepest declines in public pension system replacement rates. Importantly, younger cohorts are

[41] World Bank 2014.

in a position to save for longer periods and to benefit from compound interest rate effects, since they are expected to retire in the remote future.[42]

Build debate on pensions and consensus on reform. The limited impact of reforms so far is also the result of poor communication with the public. Most countries failed to hold a meaningful public debate around the need for pension reforms and build a social consensus around the necessary tough choices ahead. Without a proper understanding of reforms, as soon as pension system changes began to lead to increased retirement ages and cuts in benefits, people demanded they be revered.

Create better jobs and a favorable tax and benefit regime for low-income families. These are some major push factors that drive emigration. Given that most emigrants come from the lower part of the distribution of earnings,[43] supporting further low-income families by raising minimum non-taxable income and allowances for dependents, increasing the role of targeted rather than universal benefits and other ways of promoting progressivity seems to be the right direction in further development of the tax and benefit system. General business climate improvement measures to aid job recovery are additionally important.

Harvest the benefits of the diaspora. Remittances and increased productivity or salaries upon return are just two ways emigrants can bring benefits back to sending countries. The possibility for people to migrate during economic downturns can decrease unemployment. In addition, a large diaspora can offer benefits in terms of trade, investment, and know-how; in this regard, governments should foster diaspora's engagement in economic and social development and expand "virtual borders".

Embrace immigration as part of the solution. Shrinking numbers of younger workers may call for Central European and Baltic countries to make more of the available pool of potential immigrants, for example, in non-EU neighboring countries. This would involve an accompanying policy agenda, including measures to facilitate international mobility and the validation of professional qualifications, and to reduce barriers for immigrants to take up formal employment.

Reduce the obstacles to people having the number of children they want. Persistently falling fertility has pressed policymakers into action in many countries, with the aim of reducing barriers to family formation. Indeed, the evidence is that people in general want two children and so are having on average smaller families that they would like. Affordability or economic stability seems to dominate the decision to have a second child in Central Europe and the Baltics Therefore, improving families' economic circumstances is important for fertility, including through policies directed at supporting women reconciling work and family life.

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[42] Also, efforts to increase net returns on pension savings should not be neglected. In this regard, employing life-cycle portfolios, index benchmarking, limiting administrative fees, centralized collection and record-keeping could contribute. Finally, prudent macro-fiscal policies that limit government borrowing needs, attention to developing deeper financial markets, and a vibrant economy offering good investment opportunities are all needed for the successful operation of pension funds.

[43] Hazans 2015.

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