CHAPTER 2

Intergenerational fairness and solidarity today and challenges ahead

1. Introduction ([87])

Reflections on inequalities in post-crisis Europe increasingly include intergenerational fairness. Several years into the recovery, it has become clearer that the crisis and its legacy had a particularly pronounced effect on younger people. High unemployment hit the young particularly hard and – together with increasing employment through temporary contracts - may scar their developing careers. By contrast, older people appear to have been generally less affected by the crisis, whether due to established positions in the labour market or to welfare systems, notably pensions, that protected them relatively well. Besides current labour market conditions and the situation of current and future welfare benefits, the large increase in public debt adds to the burden of the crisis that is to be shouldered predominantly by younger and future generations.

The impact of the crisis is likely to have reinforced generational inequalities implied by longer-term structural changes in European economies and societies. Technological change and intensifying globalisation have transformed labour markets in Europe, contributed to increasing inequality in incomes and posed new challenges to traditional welfare systems. With increased needs for flexibility, various atypical forms of work have emerged and working careers are now characterised by less stability. While more flexibility may respond to the needs of both firms and workers to a certain extent, it also entails social risks. Demand for some types of labour and skills has strengthened to the detriment of other types and inequality in the income distribution has risen; some workers are in an increasingly precarious position. Given the changing realities of the world of work, welfare systems tailored to traditional labour markets may not cover all those who need protection. All these developments may affect young people more than those at a more advanced stage of their career or those in retirement and may have implications for the realisation of their life projects. If so, this adds to the questions about intergenerational fairness, now and in the future.

The European Commission's recent White Paper on the future of Europe reflects these concerns by stressing that "Addressing the legacy of the crisis [...] remains an urgent priority" and that "the challenge is particularly acute for the younger generation. For the first time since the Second World War, there is a real risk that the generation of today's young adults ends up less well-off than their parents. Europe cannot afford to lose the most educated age group it has ever had and let generational inequality condemn its future" ([88]).

Looking forward, the constraints of population ageing now emerging will add to intergenerational fairness challenges. Reflecting both the trend decline in fertility rates in the EU and the key achievement of rising longevity, population ageing is already visible and is expected to intensify over the decades to come. Even under very optimistic labour market scenarios, a growing number of pensioners will have to be sustained with the income generated by a shrinking working-age population. This raises important concerns about the implications for economic growth as a source of welfare for all generations and the risk of a divide between old and

([87]) This chapter was written by Tim Van Rie, Jörg Peschner and Bettina Kromen.

([88]) European Commission (2017a).

young in terms of decision-making and living conditions ([89]).

The intergenerational contract underlying European societies and economies is being challenged. Societies in Europe and beyond have been characterised by an underlying intergenerational social contract which is based on the – at least implicit - understanding that each generation at its prime age carries a responsibility both for the generation that preceded it (the old who are no longer able to provide for themselves) and for the next generation (who in turn will provide for their parents once they become older). Over time, the welfare state has become key to facilitating such intergenerational solidarity via transfers to the old (mainly pensions) and to the young (e.g. for education), traditionally financed mainly by taxing the working age population. Intergenerational fairness may in the context of this contract imply a notion of sharing benefits (as in the case of economic growth) as well as burdens (e.g. imposed by the recent crisis) associated with changing economic circumstances across cohorts.

An expectation of increasing welfare over generations has underpinned welfare states but doubts have started to emerge. The above-mentioned system of fiscal transfers over the life cycle expanded and enjoyed wide support in a context of sustained economic growth which bolstered the widespread expectation that each generation would see its living standards improve relative to the previous one. Long-lasting adjustment needs, high unemployment and public debt in the post-crisis European economies may reduce the credibility of this promise of higher future living standards. Most Europeans expect that life for young children in the EU today will prove more difficult than that of their own generation ([90]).

The current challenges to the generational social contract thus need to be explored. If the above-mentioned labour market developments contribute to reducing the younger generations' long-run chances of productive employment, they will undermine their capacity to fulfil the obligations of the generational social contract. Likewise, demographic change and the resulting need to sustain a growing number of pensioners with the income generated by a shrinking working age population may put a strain on the generational contract if the growth in labour productivity remains subdued. With unchanged pension systems, the burden on the working age population would have become unsustainable, and many Member States have already undertaken reforms to improve sustainability. Were such reforms to put the entire burden on older generations, this would break the promise of the social contract given to them. Population ageing thus intensifies the need to consider trade-offs between investing in older and in younger generations, and is likely to have increased the pressure on the latter in particular. Sustained outflows of people, as observed in a number of Member States ([91]), may exacerbate unfavourable shifts in the demographic pyramid and thus intensify challenges to the sustainability of intergenerational transfers and the welfare system at large.

This report explores key issues regarding intergenerational fairness and solidarity and offers conclusions that aim to help strengthen and renew the intergenerational contract. In particular, the remainder of this chapter takes stock of the relative welfare of the generations today and sets out the demographic challenge to economic growth, which generates the resources available for (re)distribution and is thus relevant for the preservation of the intergenerational social contract. Given that productive employment of the working age generation aligns the interests of all generations, Chapter 3 then explores the labour market challenges facing especially younger generations today, and their consequences. Against the backdrop of population ageing, Chapter 4 discusses likely changes in the relative welfare of older people in the future and, in particular, explores the intergenerational implications of different reforms designed to address the challenges of an ageing population. Acknowledging that the State is not the only actor in furthering intergenerational fairness and solidarity, Chapter 5 explores the role social partners can play in this respect.

As reflected above, intergenerational fairness is understood to refer to generations' opportunities to develop their life projects as well as to the distribution of outcomes. Fairness ([92]) in life opportunities depends to a large extent on the relative starting position of generations, including access to education and career opportunities. Fairness in outcomes brings in factors such as labour market performance, income, wealth or the consumption possibilities of different generations This report

([89]) European Commission (2017b).

([90]) In the EU, 56 % of the population aged over 15 think that life for those who are children today will become more difficult than for those of their own generation, 20 % think it will become easier, a further 20 % think it will remain the same and the remaining 4% do not know. In 23 Member States, the most common opinion is that life will become harder (exceptions are Portugal, Lithuania, Ireland, Latvia and Poland). See European Commission (2016a).

According to data from the Pew Research Centre (2016), focusing on financial prospects, a majority expect that today's children will experience a deterioration vis-a-vis their parents. This is the case in all EU Member States for which data are available between 2013 and 2015 (Czech Republic, France, Germany, Greece, Italy, Poland, Spain, UK).

([91]) For example, Romania, Portugal, Lithuania, Latvia, Croatia and Bulgaria are particularly strongly affected by outward mobility. At least 8 % of these countries' working-age population (aged 15-64 years) live in another EU Member State. European Commission (2016b), p. 190.

([92]) Fairness is not only an issue between generations. European Commission (2017c) presents insights and evidence on what makes a society fair from different perspectives. European Commission (2015b, box 1.1) presents fairness approaches to pension adequacy (intergenerational, social, actuarial).

combines both perspectives. It discusses key outcomes, such as income, poverty and a wide range of areas in people's daily lives that determine their well-being, across generations and analyses corresponding drivers and opportunities.

2. Overview: Current situation of the generations and demographic change

How can intergenerational fairness best be achieved in the context of demographic change? According to Eurostat's 2015 demographic projections, the EU working-age population will decline by 0.35 % over the next 25 years, while the number of over-64s will increase by 1.6 %. In some Member States these effects are even stronger. This combination presents a challenge to inter-generational fairness even if one assumes that GDP is a given: as the elderly, dependent part of the population grows, it may absorb a larger share of GDP and leave prime-age and younger workers with a smaller share. The reduction in the number of potential workers and the increase in the dependency ratio places a stronger emphasis on the need to generate higher labour productivity growth, as it will become more difficult to rely on the labour input as a potential source of growth.

It is necessary to make better use of existing human resources and enhance productivity. Even though partly shaped by past developments, the projected future demographic reality cannot be considered exogenous. Both migration and fertility are factors that can to some extent be influenced by policy and which may ease the decline of the working-age population in the medium to long run. While changes in these demographic parameters will be part of the solution, ageing Europe may face new challenges to every generation's welfare, unless (1) the impact of a shrinking working-age population is cushioned by helping a higher percentage of potential workers into employment, and/or (2) those in employment become more productive.

Reaching higher employment growth requires an increase in the rate of utilisation of human resources on EU labour markets. Today almost 30 % of people aged 20 to 64 are not in employment. The chapter will therefore consider the potential of (much) higher activity rates to safeguard employment growth for as long as possible. A closing gender activity gap and longer working lives (including after the age of 65) play a significant role. To achieve higher productivity, the policy focus needs to shift towards innovation and developing the EU knowledge base through skills training and higher education, as well as technological progress and other means such as investment in R&D.

In Section 3, considering intergenerational fairness today, this chapter documents long-term trends in growth and income, as well as the distribution of income across different age groups and cohorts. It then considers the role of social expenditure and taxation, as well as the household dimension. Section 4 looks at the challenges ahead resulting from demographic change and its potential impact on employment and economic growth in the EU and in Member States. It then draws conclusions about the productivity gains necessary to sustain welfare-maintaining levels of economic growth in the future.

3. A first look at inter-generational fairness today

3.1. Long-term trends in income growth

When looking at the welfare of the different generations alive today it is important to distinguish two complementary perspectives.

A static perspective compares the situation of different age groups, say the young and the old, at a given point in time. While interesting in itself, this does not give a full picture of intergenerational fairness. Ideally, this is complemented by a dynamic view, which considers what happens to a given age cohort (all people born in a given year) over its entire life course and comparing this with other cohorts' lifetime experience.

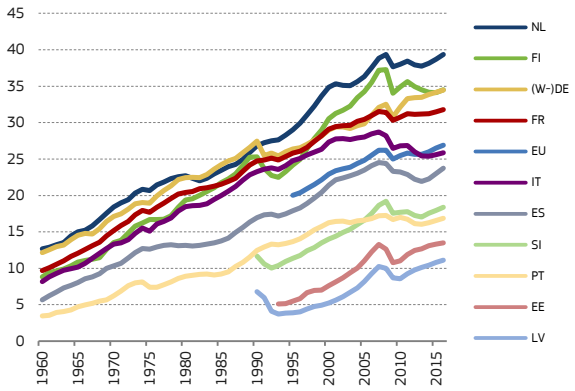
Given the limitations in the availability of corresponding long data series at the EU level, the current report mainly looks back at the past decade to analyse changes in the relative experience of different cohorts. Where available, longer-term trends are documented for selected countries.

Average living standards have steadily improved over recent decades, as shown by large increases in economic output per capita. However, the economic crisis of the late 2000s has had a critical impact in many Member States (see *Chart 2.1*). Since 2013, the EU has been on an economic recovery path.

Chart 2.1

The recent crisis interrupted a long-term trend of growth in Europe

Gross domestic product at 2010 reference levels per head of population (1960-2016)



Source: European Commission, AMECO

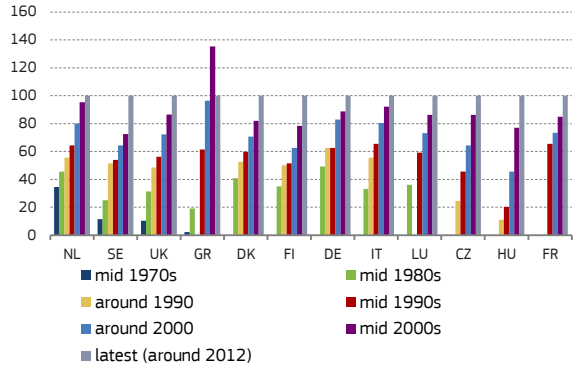
Click here to download chart.

The disposable income of households has increased over the past four decades (see *Chart 2.2*). For Member States where long-term data are available, average incomes more than doubled in nominal terms between the mid-1980s and late 2010s. The Central and Eastern European countries that joined the EU after 2003 have experienced strong income growth since the 1990s. For a number of countries, specific episodes of limited growth or recession can be identified. Examples include the Finnish and Swedish financial and economic crises of the early 1990s, or the particularly severe economic crisis in Greece since 2008.

Chart 2.2

Household income generally increased over the past four decades

Mean disposable income of total population (current prices), latest data year = 100



Source: OECD Stat

Click here to download chart.

3.2. The distribution of income across age groups and cohorts

Children and older people tend to have lower incomes than active age adults. If one disaggregates the distribution of income across different age groups, the disposable income of children (aged 0-17) ([93]) and older people (aged 65+) tends to be below the average of the population at any point in time. Relative income is highest among 'mature' adults. Over the past thirty years the relative income of young adults (aged 18-25) has fallen below the population average. Concurrently, older people have seen their incomes increase vis-à-vis the population average (*Chart 2.3*).

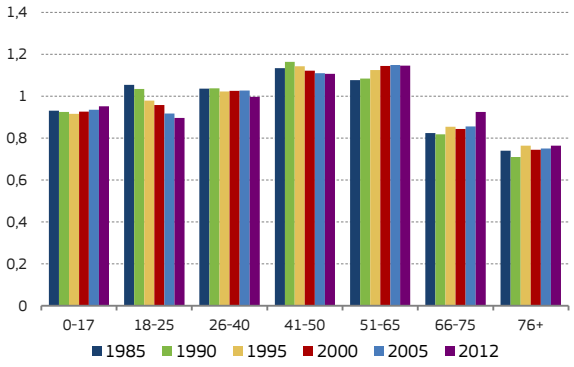
The 'baby boomers' have performed significantly above the long-term income trend in most countries. Between 1985 and 2005 people born shortly after the Second World War experienced more favourable income developments than older cohorts (born in 1935) or younger cohorts (including those born in 1975). While this pattern holds across different countries, the gaps between cohorts are particularly large in France, Spain and Italy. Generational differences have been more limited in the UK, Austria, Poland and Finland. ([94])

The income of the youngest generations may be (temporarily) underestimated due to their postponed entry into the labour market. A crucial question in this regard is whether younger generations will be able to catch up and experience a faster increase in incomes ([95]), capitalising on unprecedented investment in (tertiary) education. Moreover, if postponed entry into the labour market is combined with postponed exit (i.e. higher retirement ages) one could also expect a positive impact on the lifetime income of younger generations.

Chart 2.3

Relative income declined among 18-25 year olds, but increased among 51-65 and 66-75

Relative mean income by age group (population average = 100)



Note: Unweighted average of DK, FI, (W-)DE, IT, NL, SE, UK

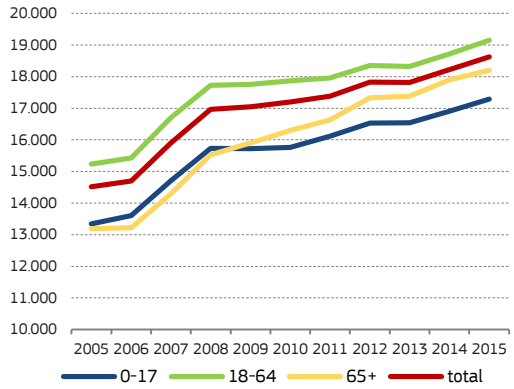
Source: OECD Stat

Click here to download chart.

Chart 2.4

During the crisis, mean income increased steadily for older people only

Mean income (EUR) by age category, EU27, (current prices)



Note: Equivalised disposable household income. Not including Croatia.

Source: Eurostat, based on EU-SILC

Click here to download chart.

The average incomes of children and working age adults were more affected by the crisis than those of older people. For working age adults and under-18s, mean incomes increased strongly from 2005 to 2008, but much more slowly between 2008 and 2012 (*Chart 2.4*). For older people, incomes

([93]) Children's income should be understood as disposable household income that is attributed to them, under the assumption of income pooling and equal sharing, see household dimension below.

([94]) Chauvel and Schroeder (2014).

([95]) Freedman (2017).

continued to rise at a steady rate, implying convergence towards the population-wide average. In particular, the mean income of older people increased steadily from 91 % of the population average in 2005 to 98 % in 2015. This pattern was observed in many Member States, and particularly those where incomes were most affected by the crisis.

These trends can be partly explained by differences in the cyclical sensitivity of the main income sources across the life cycle. Working age adults and their dependent children rely to a large extent on income from work. Income from self-employment is strongly influenced by the broader state of the economy. During economic downturns some employees may experience redundancies or a reduction in working hours. Recipients of working age social benefits (such as unemployment) may also see their entitlements diminish or expire after a certain period in a prolonged downturn. These benefits may in some cases be discontinued for failing to meet behavioural conditions (such as job search). In contrast, eligibility for old age pensions is typically based on criteria which are less sensitive to current economic conditions (such as age, work history or prior contributions) ([96]). Furthermore, old age pensions during the crisis years have increased in real terms in some Member States, due to the lagged effects of indexation mechanisms and inflation slowing down ([97]). This adds to the long term increase in real pensions, which reflects the higher wages (and pension rights) of better-educated newer cohorts ([98]).

3.3. Social expenditure and taxation

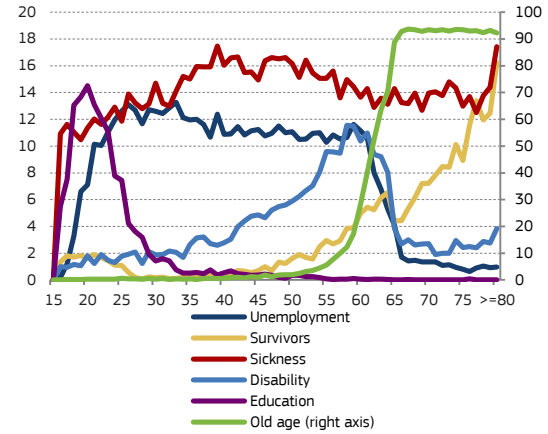
Cash social benefits have clear age-related profiles, corresponding to the social risks they cover (*Chart 2.5*). Unsurprisingly, education-related allowances are mainly granted to Europeans aged 18 to 30. Unemployment-related transfers mainly benefit those of working age, with a peak around age 25. Recipients of disability-related income replacement benefits increase gradually from age 30 to peak around age 60, when old age pensions become the main income replacement benefit. Survivor benefits are granted to both widow(er)s, and young adults. Sickness-related income benefits have the least clear age profile.

From the 1990s onwards, several attempts have been made to analyse the relative fiscal burden on different cohorts Such 'generational accounts' express in present value the net amount that current and future generations are expected to pay given the current fiscal policy ([99]). As such, their aim is to complement information on the existing stock of public debt (which for the EU28 in 2016 was, at 85 % of GDP, 27 percentage points higher than in 2007) ([100]) with a more forward-looking perspective. This method, which may have gained relevance since the onset of the financial crisis, has, however, been criticised on several grounds, including the assumptions of unchanged policies and the sensitivity of the estimates to the discount and growth rates used in the inter-temporal calculations ([101]). Nevertheless, the impact of the overall tax mix on intergenerational inequality is a relevant consideration.

Chart 2.5

Social transfers have different age profiles

Share of individuals receiving cash benefits, by broad benefit function, EU28, 2014



Source: Authors' calculation based on EU-SILC user database

Click here to download chart.

Overall, from 2001 onwards, there has been a gradual shift in expenditure from unemployment and family benefits towards old age pensions and health expenditure ([102]).

In more recent years, the notion of 'social investment' has gained prominence. In a context of constrained welfare budgets, its aim is to allocate public funds to social programmes that have the highest 'return on investment' ([103]). Using a life-cycle approach, the emphasis is on prevention of social risks, particularly through the provision of enabling services. These are seen as generally more effective and efficient compared with compensation ex-post via cash transfers. While this approach almost by definition entails a focus on young ages (including provision of high quality childcare and education), it also advocates services that allow older workers to extend their working lives. Recently, analytical work has been done to quantify the so-called 'return on investment' of such enabling policies on different socio-economic outcomes, and their interactions with cash transfers. Overall, findings suggest that there is considerable potential for social investment policies in

([96]) One might expect that during the recovery, the incomes of children and working age adults have once again increased faster than those of older people. See Gasior and Rastrigina (2017).

([97]) European Commission (2016b) p.50.

([98]) See Chapter 4. In addition, for Germany, Kochskämper and Niehues (2017) point to changes in the household composition : in contrast to the population as a whole, the proportion of the elderly living alone has decreased markedly since the mid-1980s.

([99]) Auerbach et al (1994); Raffelhüschen, B. (1999).

([100]) Eurostat [gov_10dd_edpt1].

([101]) Decoster et al. (2014).

([102]) European Commission (2015a) and Chapter 1 of this report.

([103]) European Commission (2016c) and COM(2013) 83 final.

promoting employment and productivity growth and reducing poverty ([104]). They also point to the importance of consistent policy packages, where different measures complement and reinforce each other (e.g. quality childcare for children and ALMP for their parents) and reach those most in need of support ([105]).

3.4. The household dimension

Households are a key factor in the distribution of income and wealth across generations. In addition to public transfers via the welfare system, private transfers between (grand)parents and (grand)children can have a substantial distributional impact across generations. The direction and the magnitude of such transfers depend on the specific needs of parents and children, as well as on the older generations' ability to provide such support ([106]).

Intergenerational support between family members takes different forms across Europe. In Nordic countries, children tend to leave the household at a relatively early age but financial transfers between households are relatively frequent and common. By contrast, in Southern Europe the dominant pattern is co-residence and income sharing between generations within such households. In Continental Europe both forms are found ([107]).

Age groups that benefit the most from public transfers redistribute at least part of this income at household level ([108]). Through cohabitation in multi-generational households a substantial proportion of working age Europeans are (indirect) beneficiaries of pensions. In Spain, for example, retirement pensions have been used as a means of diversifying income at household level to absorb shocks such as unemployment ([109]). Even if pensions are not targeted at children, a non-negligible share of (poor) children benefit from pensions paid to members of their household ([110]).

From a policy perspective, there may be drawbacks to such coping strategies. First, there is an element of arbitrariness in whether one has surviving (grand)parents that receive old age pensions. Secondly, such pensions have a less pronounced automatic stabilisation function than active age benefits such as unemployment insurance, which can help to smooth economic fluctuations economy-wide. Thirdly, when (young) unemployed adults depend on their parents' old age pensions, the synergies of income replacement benefits with enabling services, such as active labour market policies, remain unused. Such untapped potential is problematic, given the scale of demographic challenges that Europe is facing.

Today's older generations fare well, but challenges lie ahead. In the EU, household incomes have been increasing for decades now, and in most countries older people have been performing above the average long-term income trend. However, today's young Europeans and future generations face important challenges. Intensifying global competition and fast technological change will coincide with demographic change, to which the following section is dedicated.

4. THE DEMOGRAPHIC CHALLENGE AHEAD

4.1. The EU – a particular case

Up to the end of the last decade demography supported employment growth. Europe has just come through a protracted period of fast-growing working-age population as the baby-boom generation ([111]) gradually entered the labour market, a situation often referred to as a 'demographic dividend' ([112]).

Unprecedented changes lie ahead, however. As *Chart 2.6* shows, whereas previously demographic developments supported growth, they now make it much more challenging for the EU to achieve economic growth in the future. Apart from continuously increasing longevity, fertility declined from the end of the 1960s until the beginning of the 2000s, and recovering only very slightly afterwards ([113]). As a result, the EU's working-age population ([114]) peaked at 305 million in 2009 ([115]) and has been declining since then. Until 2040, Eurostat projects an average annual decline of 0.35 %. At the same time, total population will continue to increase by an annual average of 0.15 %.

([104]) Work, Welfare and Inequalities in Europe – The Research Perspective (October 10, 2016) http://ec.europa.eu/research/social-sciences/index.cfm?pg=newspage&item=160901.

([105]) Hemerijck et al (2016).

([106]) Mudrazija (2016).

([107]) Albertini and Kohli (2013).

([108]) Mudrazija (2016).

([109]) Gradin (2016).

([110]) Diris, Vandenbroucke and Verbist (2017).

([111]) This is the usual reference for those cohorts born between the end of World War II and the early 1970s.

([112]) See also Coomans (2012), p. 199-200, Peschner and Fotakis (2013), p. 7.

([113]) In countries where long time series are available (Germany, Belgium), average life expectancy at birth has increased from below 70 years in 1960 to above 80 in 2015. Total fertility was equal or above two in all Member States. Today all of them stay well below that threshold (average EU-28: 1.6 children per woman aged 15-49 years) (Source: Eurostat).

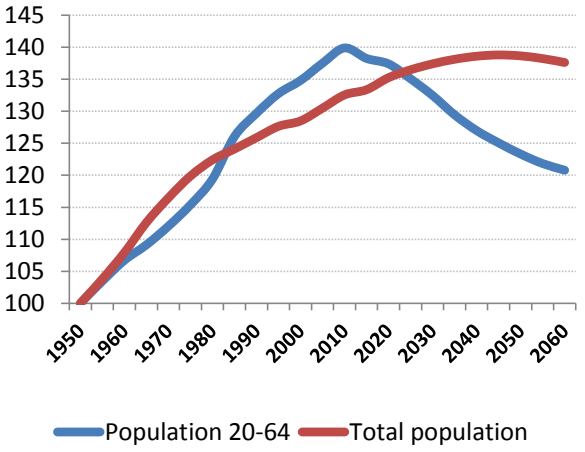
([114]) The working-age population is defined here as people aged 20-64.

([115]) Source: Eurostat EU Labour Force Survey.

Chart 2.6

Demographic reality to change fundamentally

Total population and working age population, EU-28



Source: Eurostat 2015 population projections and UN 2015 World Population Prospects

Click here to download chart.

Increasing demographic dependency will be a widespread phenomenon in the industrialised world. The proportion of working age people in the total population, a simple indicator for demographic dependency, is expected to fall from 2010 by ten percentage points, to just 51 % by 2060 (left hand side of *Chart 2.7*). The same is expected in many other industrialised regions, including the US.

Demographic trends will not support growth in the EU, in contrast with the US. The EU is particularly affected by ageing because its working age population is also falling in absolute terms, whereas the US working age population is expected to continue climbing, albeit more slowly than in the past (*Chart 2.7*, right hand side). In other words, economic growth in the US will be further supported by demographics whereas Europe will have to compensate for a shrinking working-age population. As regards the EU's overall relative future growth prospects, the EU's labour productivity gains have been lower than those of the US for decades ([116]) – a situation that adds to the demographic headwinds and that may be reinforced by ageing, to the extent that an ageing workforce may find it more difficult to generate higher productivity growth by investing in innovation ([117]).

4.2. Implications for growth ([118])

The impact of the EU's declining working age population on its labour supply (and hence on potential growth) will depend on whether the EU can succeed in making people active who have so far been inactive in the labour market. This section deals with the potential contribution to growth of policies that seek better utilisation of existing labour reserves. From there it goes on to consider what could be the necessary productivity growth to sustain growth in the long run.

([116]) See for example: van Ark et al (2013), Rincon-Aznar et al (2014).

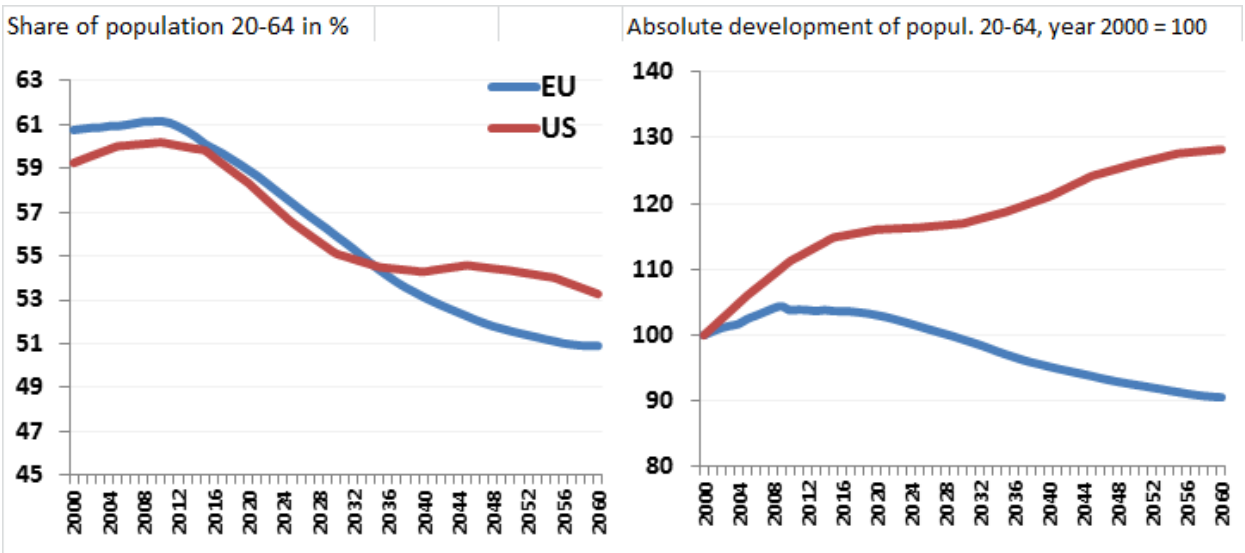
([117]) Aiyar et al (2016).

([118]) The following illustration is based on Peschner and Fotakis (2013), Fotakis and Peschner (2015). See also European Commission (2015c), pp. 43-52.

Chart 2.7

No demographic dividend in the EU, contrary to the US

Dependency ratio (left) and working-age population in the EU and the US



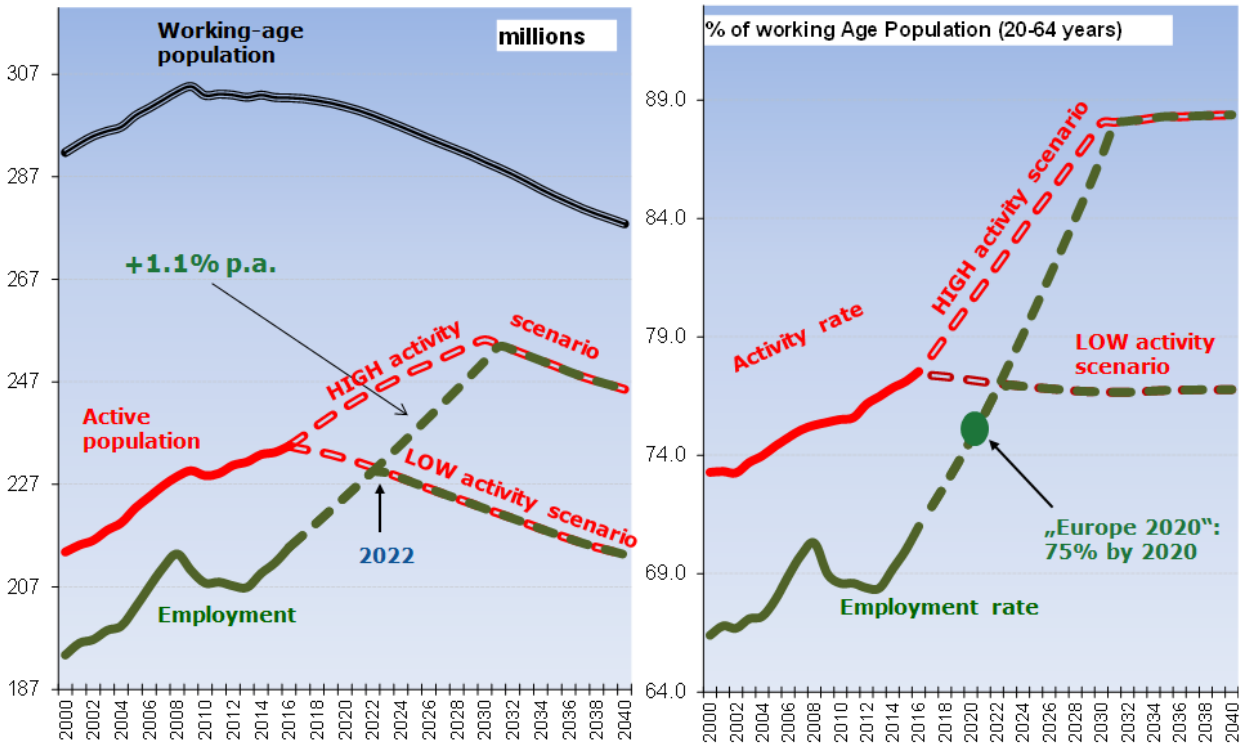
Source: Eurostat 2015 population projections (baseline) and UN 2015 World Population Prospects

Click here to download chart.

Chart 2.8

Potential employment growth soon to touch the limits

Working age population, active population, employment (age: 20 to 64 years), EU-28



Source: Eurostat EU LFS, Eurostat 2015 population projections (baseline), DG EMPL calculations; see Peschner and Fotakis (2013).

Click here to download chart.

The majority of people aged 20 to 64 without a job are inactive rather than unemployed. As reflected in *Chart 2.8*, which depicts the EU's working age population (aged 20 to 64) in activity and employment, some 90 million people in this age group were not in employment in 2015 ([119]). Only a minority of these non-working people were unemployed ([120]). The rest - some 70 million people - did not participate in the labour market. They were not active, i.e. they were not actively seeking a job.

The right hand side of *Chart 2.8* also shows employment and participation (activity) for 20 to 64 year-olds, but this time in percentages of the working age population (i.e., employment and activity *rates*). Following the recession that started in 2008, the employment rate was at its lowest in 2013 (68 %), but has been on the rise since then as labour markets have been gradually recovering (see Chapter 1 for details). It can be expected that if employment continues rising at the pace observed since 2013, i.e. by 1.1 % per year, the EU will reach its 75 % 'Europe 2020' employment rate target by the year 2020. This rate of employment growth would also correspond to the long-term pre-crisis average for the EU ([121]).

Taking this as a starting point, for the years after 2020, two simple scenarios are presented below for how people of working age can be successfully made active in the labour market – with a view to maintaining the historically observed 1.1 % employment growth in the future ([122]).

A 'low-activity' scenario. In a low-activity scenario it is assumed that age-specific activity rates remain constant from 2020 ([123]).

([119]) This report's focus is on inactive people not in education or training. As working age is considered to start from the age of 20, potential biases resulting from young people in education should be minimised (for example: rising activity rates among young people could be due to the reduction in early school leaving).

([120]) The difference between the active population and employment are the unemployed.

([121]) Yet it is optimistic relative to the Ageing Report 2015 (European Commission and Economic Policy Committee (2015)) that projected average annual employment growth between 2013-2023 of 0.2 %. The macroeconomic assumptions underlying the Ageing Report 2018 that take into account Eurostat's 2015 population projections will be published in autumn 2017, but they are not substantially different from those of the Ageing Report 2015 with regard to employment growth and participation rates.

([122]) The applied assumption on the prolongation of the Europe 2020 employment growth path after 2020 is neither a projection nor a forecast. The assumption is made for illustrative purposes so as to facilitate understanding of the link between labour market participation and potential employment growth. In reality, apart from demographics, long term employment growth depends on factors such as technological change, trade development and the speed of structural change in the economy. To incorporate those here would be beyond the scope of the chapter.

([123]) This means that there will be no further increases in the age-specific activity rates from 2020 on. In the US activity rates have been declining in recent years, see Chapter 1. A constant activity rate after 2020 (and a lower rate than in 2015) is more pessimistic than the Ageing Report 2015 that projected an

Box 2.1: Assumptions made in the high-activity scenario

The high-activity scenario combines three very optimistic assumptions about the future development of activity rates ([1]):

- The activity rate of older workers (aged from 55 to 64 years) has increased by 18 percentage points over the past 15 years. It is assumed that the increase will continue until 2030, that is an increase by a further 18 percentage points, up to 75%.
- A gender effect assumes that female labour market participation rates will catch up with those for males by 2030.
- An education effect: it is assumed that the educational progress observed in the past will continue in the coming decades. As activity rates are higher for more educated parts of the population, this structural effect will impact positively on the average activity rate ([2]).

([1]) A detailed description can be found in Peschner/Fotakis (2013), pp. 10-12. See also European Commission (2015:2), pp. 44, 45.

([2]) The proportion of high-educated and low-educated people aged 25-34 will be projected up to the year 2040. A simple log-linear progression prolongs the trend as seen between 2000 and 2015 into the future. The proportion of medium-educated people will be the residual. It is hence implied that educational progress will continue, but slow down somewhat. No further progress is assumed for age groups beyond 34 years.

A 'high-activity' (labour market on full steam) scenario. A high-activity scenario makes very optimistic assumptions about the labour market participation rates older workers and women will achieve by 2030. It also assumes that continuous educational progress will impact positively on activity rates. Thus, the high-activity scenario assumes the highest possible labour market participation, achievable only if all the EU's existing human resources are fully engaged and everyone who could possibly participate in the labour market does so. For a detailed description of the high-activity scenario see *Box 2.1*.

When considering these two scenarios, and how EU policies should develop so as to maximise the chances of approaching the high-activity scenario, a number of points should be noted.

Irrespective of the business cycle, employment in the EU could stop growing very soon. *Chart 2.8* shows that in the low-activity scenario further employment growth will no longer be possible shortly after 2020. With age-specific activity rates constant, the declining working age population will pull down the active population in parallel. The current annual employment growth of around 1 % per year could only be maintained until shortly after 2020. From then on, employment would cease to make any positive contribution to economic growth.

In reality, with the low-activity scenario, employment is unlikely to grow by around 1 % per year even until 2020. As employment expands, it will be necessary to recruit not only the unemployed but also, increasingly, people from the harder-to-reach inactive part of the working age population. The low-activity scenario was presented here to demonstrate that reaching out for those furthest away from the labour market may very soon be the only way of achieving employment growth in Europe. A more realistic scenario on the development of active population and employment is presented in Section 4.5.

If the EU taps into all its human resources (high-activity scenario), employment could continue growing for another decade. If, after gradual improvements, by 2030 there are much higher labour market participation rates for female and older workers, such a 1 % employment growth path will be feasible for around ten more years, until shortly after 2030. Then, with employment and activity rates at a theoretical 88 % for the whole of the EU, the labour market would run at full steam, with almost no-one idle. Importantly, even under those circumstances, after 2030 labour supply would reach its limits and employment growth would cease.

In the long run, economic growth will inevitably have to come from labour productivity gains ([124]) as employment falls. For economic growth to continue, there will have to be labour productivity gains to compensate for declining employment. Given projected demographic trends, productivity growth is likely to become the EU's only source of economic expansion in the long run. *Box 2.2* explains that in the long run in both scenarios productivity may have to double, compared with its long term average growth rate of 0.8 % per year between 2013 and 2016, in order to maintain the 1.4 % potential GDP growth path. Such a growth path has been projected in the baseline scenario of the 2015 Ageing Report by the

increase in the participation rate from 76.5 % in 2013 to 78.7 % in 2023 and 80.1 % in 2060.

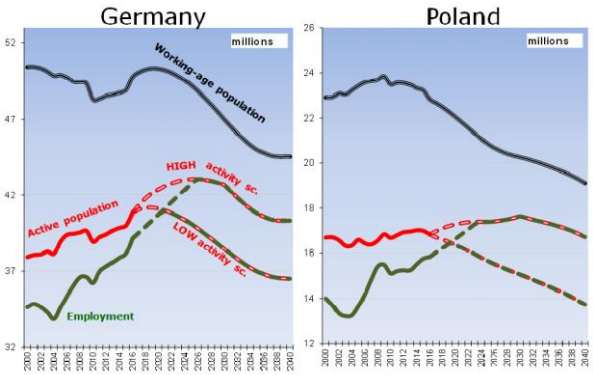
([124]) Labour productivity is here defined as real GDP per employed person. Increasing the number of working hours per employed person will, other things being equal, increase labour productivity on this definition. The potential contribution of hours worked is dealt with in section 4.7 below.

European Commission that was endorsed by the Economic Policy Committee.

The EU's total population is projected to expand further until the end of the 2040s. According to Eurostat's population projections, the EU's total population will increase, on average, by around 0.15 % per year between 2015 and 2040. Only from 2046 onwards will the EU's total population begin to shrink. In 2080 it will still be bigger than today. Hence, the EU as a whole cannot rely on a declining population to alleviate the pressure on higher productivity. In other words, the situation described here does not change significantly for decades if one considers growth of GDP per capita instead of GDP.

The EU-28 aggregate hides considerable differences - some Member States will be under strong pressure. For example, Germany and Poland will both see their working age population shrink fast (-0.5 % and -0.8 % per year until 2040 respectively). Employment in Germany has expanded by 1 % per year since 2013. Given already low unemployment, the country could not sustain such a pace of expansion beyond 2021 in the low-activity, or 2027 in the high-activity scenario ([125]). Germany's recent 0.7 % average productivity growth rate would have to double before 2030 to maintain the modest 1.0 % per year economic growth assumed for the country in the 2015 Ageing Report for the period until 2060.

Chart 2.9
Countries strongly affected by declining working-age population



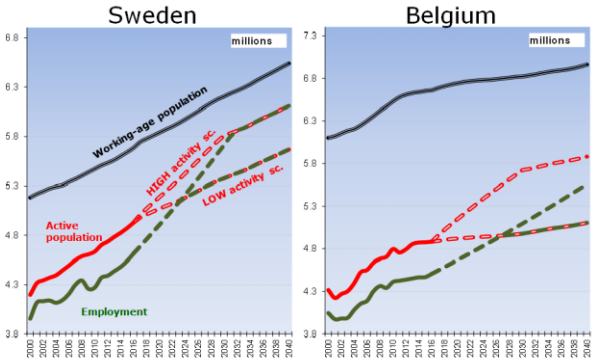
Note: Scenario: Starting from 2016, employment growth held constant at the pace observed since 2013, the start-year of the labour market recovery.

Source: Eurostat EU LFS, Eurostat 2015 population projections (baseline), DG EMPL calculations

Click here to download chart.

The Polish labour market has come out of the crisis relatively quickly. Since 2013, average employment growth has been very strong: 1.3 % per year. Such strong employment growth would come to an end before 2020 in the low-activity, and in 2022 in the high-activity scenario. Since 2013 Poland has seen its GDP grow by an annual average of 3.2 %. For the future Polish growth expectations are much more modest. The 2015 Ageing Report assumes potential growth at 1.6 % per year until 2060. To achieve this, the country would need to return to productivity growth rates of around 3 % per year after 2040, as seen in the first decade due to the catching-up process after accession to the EU.

Chart 2.10
In other countries working-age population is projected to increase further



Note: Scenario: Starting from 2016, employment growth held constant at the pace observed since 2013, the start-year of the labour market recovery.

Source: Eurostat EU LFS, Eurostat 2015 population projections (baseline), DG EMPL calculations

Click here to download chart.

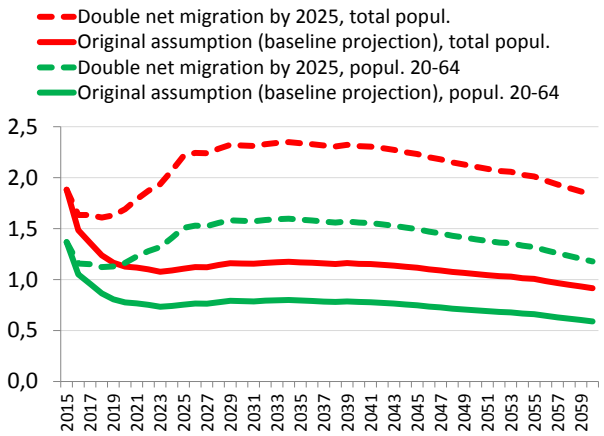
Other Member States are affected to a lesser extent. In particular, countries such as Sweden or Belgium will continue to see their working age population grow. Sweden has seen strong recent employment growth and low unemployment. Supply constraints will slow employment growth in the low-activity scenario only from 2024, but further expansion, albeit at a moderate pace, remains possible, supporting economic growth from the labour supply side. In Belgium, the moderate employment expansion of around 0.9 % every year seen since 2013 can in theory continue at least until 2030 even in the low-activity scenario without touching any limits, given the projected steady increase in the country's working-age population.

For the majority of EU countries and the EU as a whole the upcoming shortages have major policy implications. The illustration above has shown that the declining working-age population will start limiting potential GDP growth from the supply side of the labour market. To demonstrate the extent of the challenge, the entire pressure to keep GDP growth in the EU at around 1.4 % per year is laid on productivity growth only. While the implicit assumption of 1.4 % being necessary to maintain all generations' welfare remains disputable, it is clear that growth will no longer benefit from a demographic dividend so that the pressure on productivity growth will undoubtedly increase. Potential channels to alleviate the pressure are, most importantly, higher migration influxes and higher fertility rates.

([125]) Eurostat's 2015 population projection has incorporated Germany's recent strong inflow of refugees. The 2015 revision foresees a much more favourable outlook for Germany than was the case with the 2013 projections.

4.3. Higher migration may cushion supply-side growth constraints

Chart 2.11
Assuming a doubling of net migration into the EU by 2025



Source: Eurostat 2015 population projections (baseline), DG EMPL calculations (alternative assumption on net migration)

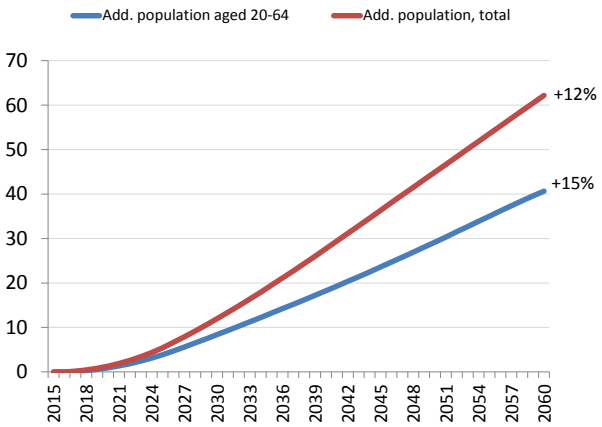
Click here to download chart.

Available population projections include further modest net immigration. The illustrations above use Eurostat's 2015 population baseline projection. Those assume that annual net migration into the EU will decline from its all-time high of 1.9 million people in 2015, down to some 1.1 million by 2020. In the long run, it is assumed to hover around 0.9 to 1.1 million per year until the year 2060, see *Chart 2.11* (solid curves).

No further migration would exacerbate the demographic challenge. Without any further net migration into the EU from now on, the decline of the working-age population would be much stronger than illustrated in *Chart 2.8*above. The working-age population would decline by almost 40 million people over the next 20 years (-13 %) and by more than 80 million people by 2060 (-28 %). That is, the decline would be around twice as fast as assumed in Eurostat's 2015 baseline projections ([126]).

By contrast, higher net immigration would allow growth in the working age population to resume in the medium term. In the EU the increase in the labour force observed in the decade starting in 2000 was to a large extent due to immigration ([127]). This points to the question of what role increasing (net) migration could play in the future to alleviate the projected workforce decline. To demonstrate the impact of higher net migration on potential employment and economic growth within the analytical frame used above, one could assume that the EU's net migration will double in the long run rather than using the original baseline assumption just mentioned, with a 10-year transition period until 2025 ([128]). This alternative assumption implies that by 2060 some 40 million more people of working age would live in the EU, or +15 % more than in Eurostat's original population projection without additional migration: see *Chart 2.12*.

Chart 2.12
Doubling net migration into the EU by 2025
Impact on total and working-age population, million people



Source: Eurostat 2015 population projections (baseline); DG EMPL calculations (alternative assumption on net migration)

Click here to download chart.

On this assumption, the working-age population would start climbing again from the middle of the 2030s. *Chart 2.13* plots the working-age population and potential employment in the higher-migration scenario (right) against the original (baseline) situation shown earlier (left).

Employment growth could thus continue. In the high-activity scenario with higher immigration, employment growth would slow down after reaching the ceiling in 2035 - some five years later than would be the case without additional migration. It would then resume its growth path in parallel with the increasing working-age population. In the low-activity scenario the increase in net migration would happen too slowly to make a sizeable difference in the next 10 years. But in the long run employment growth would be positive.

This would ease the pressure to raise productivity growth. *Box 2.2* demonstrates that such a higher-migration scenario would significantly ease the constraints for upholding economic growth in the future. This is because it would increase annual employment growth by 0.4 percentage points, thereby pulling employment back to positive growth rates by the end of the 2030s (even in the low-activity scenario).

([126]) Such a scenario has not been published yet in the official Eurostat population estimates. It was created by DG EMPL on the basis of Eurostat's age-specific assumptions on migration, fertility and mortality.

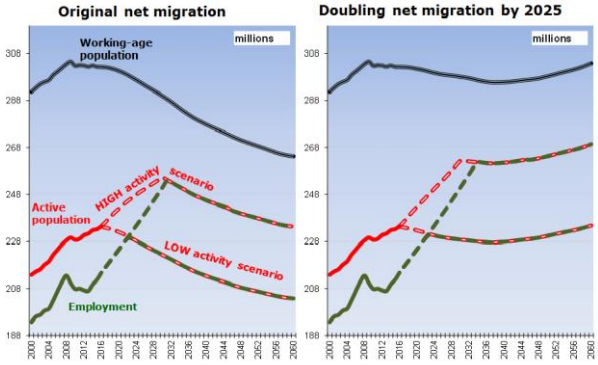
([127]) Lemaître (2014), p. 113, finds that immigrants represented 70 % of the increase in Europe's labour force between 2000 and 2010.

([128]) No such scenario exists in Eurostat's estimates. See previous footnote.

Chart 2.13

Higher net migration may keep employment from declining in the long run.

Doubling net migration into the EU by 2025: Impact on working-age population and employment, EU-28



Source: DG EMPL calculations based on Eurostat 2015 population projections (baseline)

Click here to download chart.

4.4. The benefits of higher fertility

Fertility rates in the EU remain low. Until the turn of the century, the EU's average total fertility rate ([129]) (TFR) for women aged 15 to 49 had been on a declining trend for decades. A variety of reasons have contributed to this trend, including a shift in cultural values towards an increasing emphasis on self-realisation (personal freedom) ([130]). In the western part of the current EU the strongest fertility decline happened during the 1970s, when such cultural change was complemented by newly available means of family planning ([131]). Eastern European countries saw their fertility rates fall most strongly during the 1990s, following high political uncertainty linked to the collapse of socialist regimes ([132]).

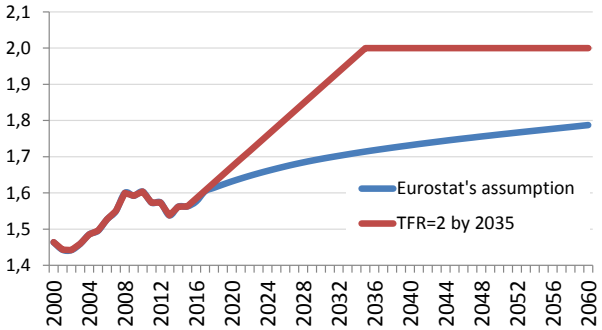
Research on current trends in fertility hints that the overall macro-economic situation could be a driving factor ([133]) for fertility. However, there is evidence from advanced economies that family policies also have an impact. In countries where fertility is higher this may be due to better "[organisation] to provide social support to those who have children" ([134]). Indeed, studies find a positive correlation between the availability of childcare services and flexible working-time arrangements on the one hand and total fertility on the other hand ([135]).

In the light of such findings and in order better to reconcile family life and work (and with the aim of stimulating female labour participation), many Member States have during the last decade stepped up the provision of formal childcare ([136]). While female labour market participation has continued to increase as a result of such policies ([137]), the average total fertility rate has been shifting slightly, from 1.5 to 1.6 children born per woman over the period since the year 2000. Eurostat's baseline demographic projection foresees a further slight increase up to 1.8 by the year 2060, see *Chart 2.14* (blue curve). This assumption is incorporated in the above illustrations for the EU in Section 4.2.

Chart 2.14

Assuming two children per woman by 2035

Assumption applied on the Total Fertility Rate (children per woman)



Source: Source: DG EMPL calculation based on Eurostat 2015 population projections (baseline)

Click here to download chart.

This section explores the implications of higher fertility. The secular decrease in fertility partly reflects lifestyle choices. However, to the extent that it also reflects obstacles to the realisation of people's life projects (see Chapter 3), future policy may have a significant impact on fertility. To illustrate the impact higher fertility could have on labour supply constraints, the (admittedly over-ambitious) assumption is made here that the EU manages, by 2035, to shift the total fertility rate back to 2 children per women, as shown in *Chart 2.14*.

Higher fertility can halt the employment decline, but with a significant time-lag. With fertility only gradually starting to increase above the baseline in 2017, these changes would impact on the working-age population only after 2036. By 2060, the working-age population would be higher by some 11 million people, or +4.2 %, but it would climb further thereafter.

([129]) The total fertility rate is the average number of live births a woman would deliver in her fertile ages (between the age of 15 and 49 years.

([130]) Davies (2013), p. 5.

([131]) All EU-15 countries for which data is available show TFR beyond 2 in 1968. In 1985 all but Ireland were below 2.

([132]) For example, Poland saw its total fertility rate fall from above 2 in 1991 to just 1.3 ten years later.

([133]) Lanzieri (2013), Eurostat 'Statistics in focus' 13/2013.

([134]) Those countries include EU countries France, Belgium, the Netherlands, Ireland, the UK and the Nordic Member States. See McDonald (2007), p. 25.

([135]) See, for example, Sleebos (2003), esp. p. 39, Davies (2013), p. 5.

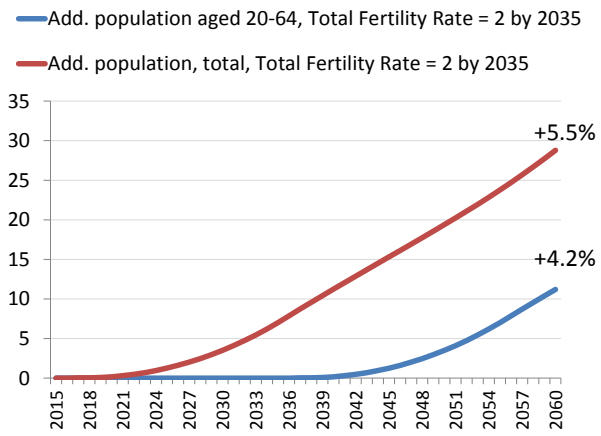
([136]) Platenga and Remery (2015), p. 22.

([137]) Female activity rates in the age group 15-64 has climbed by 8 percentage points since 2000, to 68 % in 2015 (Eurostat series [lfsa_argan]).

Chart 2.15

Total Fertility up to 2 children per woman by 2035: 11 million more people of working-age by 2060

Impact of higher fertility on working-age and total population, EU-28



Source: DG EMPL calculations based on Eurostat 2015 population projections (baseline)

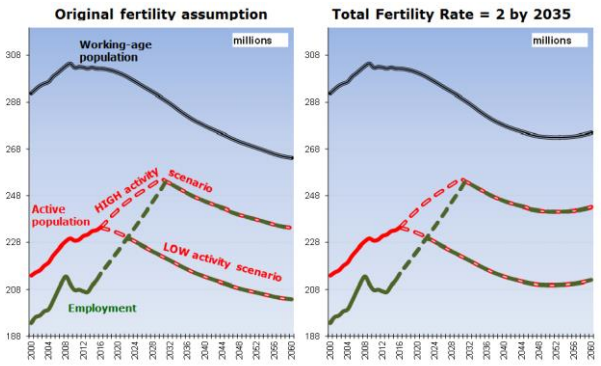
Click here to download chart.

As a result, *Chart 2.16* reveals that higher fertility would only change the outlook for the EU's employment potential after 2036. However, the working-age population would start to rise significantly after 2050, pulling up employment in parallel in both the high and the low-activity scenario (as the employment rate is also assumed to be constant in the high-activity scenario after reaching its maximum).

Chart 2.16

Higher fertility may stop the employment decline in the long run

Achieving a Total Fertility Rate (age 15-49) of 2 children per woman by 2035: Impact on working-age population and employment, EU-28



Source: Eurostat 2015 population projections (baseline) and Eurostat EU LFS, DG EMPL calculations (alternative assumption on fertility)

Click here to download chart.

Higher fertility thus eases the pressure to raise productivity growth in the long run. Higher fertility will strongly impact on employment growth, thereby reducing the pressure to achieve higher productivity growth, as demonstrated in *Box 2.2*. However, it will take two decades for the shift in fertility to start to have an impact on the working-age population. Once it has started, the impact will intensify in the following decades.

4.5. A realistic labour market scenario

To illustrate the range of possible developments and their implications, the analysis has so far relied on two extreme scenarios, based on rather mechanical assumptions about future employment and activity rates. The current section complements that with a more realistic scenario.

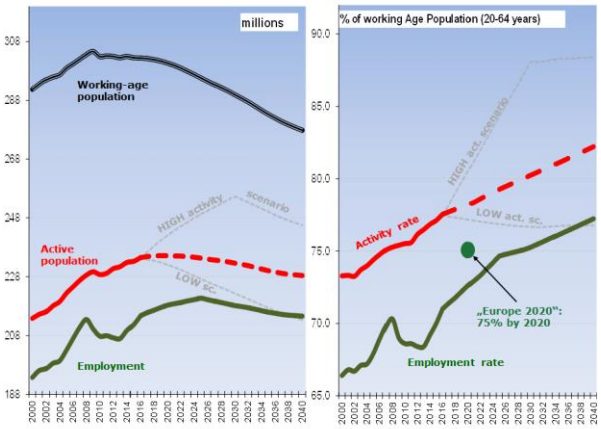
Realistically, the development of the EU's active population is likely to lie between the low and the high-activity scenarios developed above, while employment growth may be lower. Most current projections for medium-term employment growth fall short of the rate of around 1 % per year underlying the scenarios above ([138]). Therefore, the following scenario is based on the current skills demand and supply forecast to 2025 of the European Centre for the Development of Vocational Training (Cedefop). In Cedefop's projection the active population climbs until 2019 and then starts to decrease, pulled down by the declining working-age population - despite continuing increases in activity rates. Employment is projected to rise steadily by some 0.3 % on average per year between 2015 and 2025 ([139]).

In addition to these projections, it is assumed that after 2025 the EU's activity rate will continue to increase at the same pace as between 2015 and 2025. In line with Cedefop, it is assumed that the proportion of unemployed in the working-age population will fall back to its 2008 level (some 5 %) by 2030 ([140]) and then remain at this low level.

Chart 2.17

Intermediate assumptions on activity

Employment and activity, following CEDEFOP



Source: DG EMPL calculations based on Eurostat 2015 population projections (baseline) and Eurostat EU LFS; CEDEFOP

Click here to download chart.

([138]) This was the reference point in the scenarios above as such a pace would allow for reaching the Europe 2020 target of a 75 % employment rate by 2020.

([139]) See http://www.cedefop.europa.eu/en/events-and-projects/projects/forecasting-skill-demand-and-supply/data-visualisations.

([140]) CEDEFOP (2016), p. 7. This would correspond to an unemployment rate (unemployed as percentage of active population) of 6.6 %.

Box 2.2: Productivity growth may have to double, but higher fertility and migration may help.

In the past, roughly half of the EU's GDP growth came from productivity growth. To demonstrate how the shrinking working-age population could impact on economic growth, *Chart 1* shows annual average GDP growth (blue) and its two underlying components: employment growth (green) and productivity growth (orange). In the past, before the crisis struck, the EU's real GDP grew by a long-term average of almost 2 % per year. During the crisis, GDP growth collapsed, mainly due to falling employment ([1]). Since 2013, however, annual GDP growth has come back to almost 2 % GDP growth per year, roughly half of which comes from each of the two sources: employment and productivity growth ([2]).

EU productivity growth would have to accelerate to sustain economic growth. The blue curve in *Chart 1* depicts GDP growth. It is assumed that, starting from today, the annual average GDP growth until 2040 will be lower than the recent performance of 1.4 % per year. This growth performance corresponds to the assumption made in the 2015 Ageing Report by the Commission and the Economic Policy Committee for the period until 2060 (baseline scenario). The green graph shows the annual rate of change of employment.

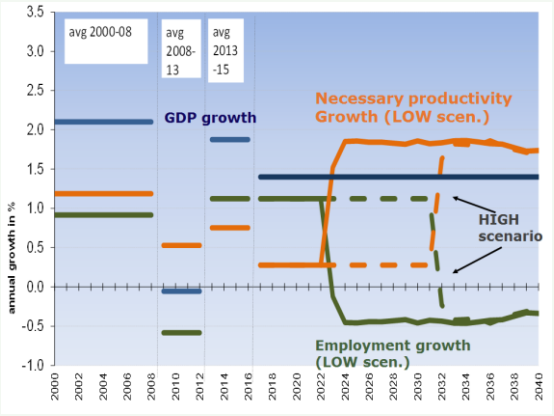
Employment would decline sooner or later. For the future, *Chart 1* assumes the two employment growth scenarios developed in section 4..2. Given the labour supply restrictions, employment would start declining from 2022 in the 'low scenario'. That is, employment growth would turn negative in the low-activity scenario. In the 'high scenario' (dotted line) this would happen 10 years later. GDP growth is the sum of employment and productivity growth. Hence, if GDP growth were to be sustained at 1.4 % per year, the EU's productivity growth (orange curve) would have to compensate for the decline in employment growth.

Productivity growth would then be the engine of GDP growth. Maintaining an average GDP growth path of 1.4 % for the EU in the future would in fact require roughly doubling the contribution from productivity growth ([3]) relative to what was observed in the recent past. This situation would become a reality sooner (after 2022 in the low activity scenario) or later (after 2032 in the high activity scenario). ([4])

Chart 1

EU to double productivity growth sooner or later

GDP growth, employment growth, necessary productivity growth, EU-28



Source: Peschner/Fotakis (2013). Data source: Eurostat EU-LFS, Eurostat 2015 population projections (baseline), DG EMPL calculation

The requirements in terms of future productivity growth needs are in line with Commission analysis of long-term growth trends. The 2015 Ageing Report assumes that growth will come entirely from productivity (+1.4% per year), the contribution of labour input (which includes the number of hours worked) being negative. Such scenario is very close to the low activity scenario if one looks at the period until 2040([5]) (+1.4% p. a. necessary productivity growth). In the high scenario, average productivity requirements are much lower (+0.8%). The finding of significant progress to be made on future productivity growth is also in line with the latest Commission projections that see potential GDP grow by 1.2 % per year in the EU until 2026, but all of this coming from productivity growth.

Higher migration would ease the pressure to raise productivity growth. The scenario of doubling net migration (gradually until 2025) as developed in Section 4.3 would have a positive impact on employment growth. The pressure on higher productivity growth would remain substantial at least in the medium term. In the long run the impact of higher net migration would shift employment growth up by 0.4 percentage points

([1]) The employment decline was a result of labour shedding at the extensive margin, i.e., due to job losses following the demand slump.

([2]) (Labour) productivity is being measured here as GDP per employed person. In this definition it is the sum over the contributions from total factor productivity, capital accumulation, and hours worked per worker.

([3]) Productivity growth here is the sum of the contributions from total factor productivity and capital accumulation.

([4]) This thought experiment may suggest that policies first try to keep employment growing for as long as possible and then accelerate productivity growth. In reality these two policy strands would coincide as they are complementary to each other. Investing in people's qualifications will generate higher employment and improve their productivity.

([5]) Growth rates do not differ in the two scenarios as from the middle of the 2030s, see Chart 1. Hence, extending the horizon up to 2060 would make little sense.

(Continued on the next page)

Box (continued)

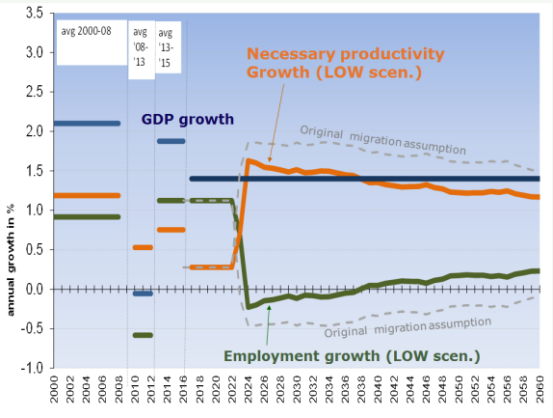
every year (see *Chart 2* for the low-activity scenario). The necessary productivity growth would decline correspondingly.

Higher fertility would ease the pressure – in the long run. Section 4.4 has developed a scenario that assumes a gradual shift in the total fertility rate (TFR) to 2 children per woman aged 15 to 49 years, by the year 2035, up from today's 1.6. That is, it is assumed that fertility increases much faster than assumed in Eurostat's baseline assumption that is incorporated in the growth scenario of *Chart 1* ([6]). Such a high-fertility scenario would start making a difference in 20 years. In the very long run it would reduce the required productivity growth significantly. The productivity growth rate necessary in 2060 to achieve a 1.4 % GDP growth path would decline from 1.5 % to 1.2 % in both ([7]) activity scenarios (*Chart 3*). It would continue to decline after 2060.

Chart 2

Higher net migration may ease the pressure on productivity growth by keeping employment from falling in the long term.

Employment growth, necessary productivity growth to achieve 1.4 % GDP growth per year, EU-28



Note: Scenario: Doubling net migration by 2025 Source: Source: DG EMPL calculations based on Eurostat 2015 population projections and EU LFS

Source: DG EMPL calculations based on Eurostat 2015 population projections (baseline) and Eurostat EU LFS

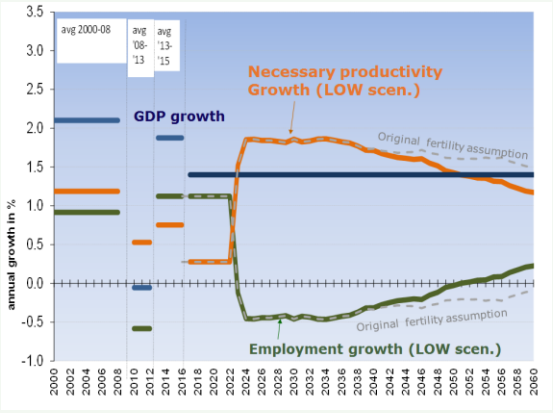
([6]) Eurostat's assumption incorporates a shift of TFR to only 1.8 by 2060.

([7]) The rate of employment decline is the same in both scenarios after 2032 after employment in the high scenario will have reached its maximum. From then on, employment will decline in parallel to working-age population in both scenarios.

Chart 3

Accelerating growth in fertility will make a difference - in 20 years

Employment growth, necessary productivity growth to achieve 1.4 % GDP growth per year, EU-28



Note: Shifting total fertility to 2 children per women by 2035 - compared to 1.8 by 2060 (starting from 1.6 today).

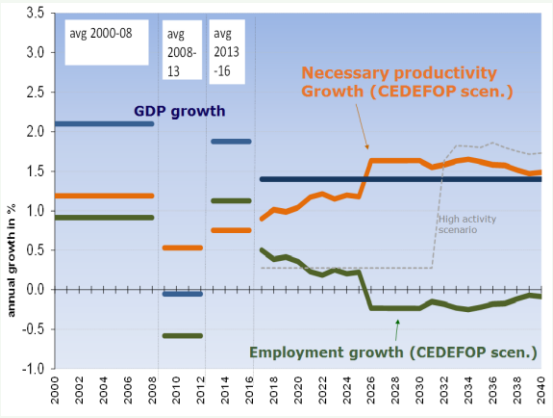
Source: DG EMPL calculations based on Eurostat 2015 population projections (baseline) and Eurostat EU LFS

Lower employment growth today will increase the pressure on productivity already now. Obviously, the less ambitious the EU will be in terms of employment growth in the near future, the longer it will take until employment growth will reach its limits. This would lower the pressure on productivity growth in the further future but aggravates it today. Following Cedefop one could assumes employment to grow much more slowly from now on, by only 0.3 % per year until 2025 – as in the scenario developed in section 2.3.5. With employment growth much lower now the pressure on higher productivity growth would start already now (see *Chart 4*).

Chart 4

A realistic labour market scenario (Cedefop)

Employment growth, necessary productivity growth to achieve 1.4 % GDP growth per year, EU-28

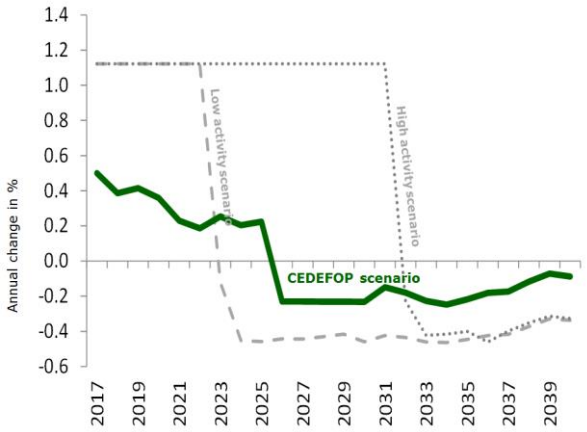


Source: Source: DG EMPL calculations based on Eurostat 2015 population projections (baseline) and Eurostat EU LFS; CEDEFOP

Chart 2.17 reflects this scenario. It shows that the EU's employment rate would increase continuously up to 77 % by 2040. This implicitly (and realistically) assumes that unemployment decreases gradually until 2030. After 2030, the unemployment *ratio* ([141]) is assumed not to fall any further, implying that an increasing percentage of people are recruited from the inactive population. Employment would increase, in absolute terms, at a moderate pace until 2030 and then be pulled down in parallel to the decline in the active population, with the proportion of unemployed people remaining stable in the long run.

Pressure on productivity growth would be somewhat less pronounced in the long run in this scenario. *Chart 2.18* shows the imputed annual employment growth. In the near future Cedefop assumes employment grows much more slowly than was the case in both scenarios developed above. In contrast, employment growth in the long run will be higher (i.e. employment will decrease more slowly) because the scenario still allows for further increasing employment rates ([142]). Thus, the pressure to generate higher productivity growth would obviously be lower in the long run compared with the scenarios discussed above.

Chart 2.18
Annual employment growth in %, compared to the high and the low- activity scenario



Source: DG EMPL calculations based on Eurostat 2015 population projections (baseline) and Eurostat EU LFS; CEDEFOP

Click here to download chart.

The pressure to generate higher productivity growth would not disappear but be distributed differently across time. Today's lower employment growth would already require significantly higher productivity growth before 2020. *Box 2.2* demonstrates that sustaining the reference 1.4 % GDP growth path from now on would require much higher productivity growth before 2020 than was the case in the high-activity scenario above. This further underlines the importance of supporting labour market performance in the face of population ageing to buy time for the necessary investments supporting productivity growth, with a view to sustaining economic growth benefiting all generations.

4.6. Increasing the effective retirement age will make an important contribution in the medium term

The age group 65+ has increasingly gained policy attention. The above analysis considered as working-age population those aged 20 - 64. This definition has been chosen by reference to the 'Europe 2020' employment target, which is to achieve an employment rate of 75 % in the EU by 2020 for that particular age group. However, those just over the age of 65 have been increasingly at the centre of policy attention; some Member States have undertaken labour market reforms and shifted the statutory retirement age beyond 65 to increase activity in this part of the workforce, even if many of these reforms affect future pensioners only ([143]). Today, the employment rate of those aged 65 to 69 years is still only 12 %, up from 9 % in 2000.

The current labour market recovery has started reaching 65-69 year-olds. While starting from a low base, recent growth in employment in the age group from 65 to 69 has been pronounced: 6 % p.a. on average since the labour market recovery started in 2013, compared with only 1.1 % for the overall working age population (aged 20-64).

But there is significant scope for making the 65-69 age group even more active in the workforce. To show the effect of longer working lives on employment growth, this section revisits one of the core assumptions included in the high-activity scenario developed in section 4.2 above, namely: gradually increasing activity rates for older workers by 18 pps during a transition period between now and 2030 ([144]). It extends this assumption to the age group 65-69. This implies more than a doubling of this age group's activity rate, to 30 % by 2030. 'Older workers' for the purposes of this section are therefore those aged 55 to 69 . Correspondingly, the definition of working-age population is extended to include people aged from 20 to 69.

([141]) The unemployment ratio is here defined as the number of unemployed aged between 20 and 64 years, relative to the population of the same age.

([142]) In both the high and the low activity scenario above, employment will reach the limit of active population sooner (low scenario) or later (high scenario). From then on, further increases in the activity and employment rates will no longer be possible.

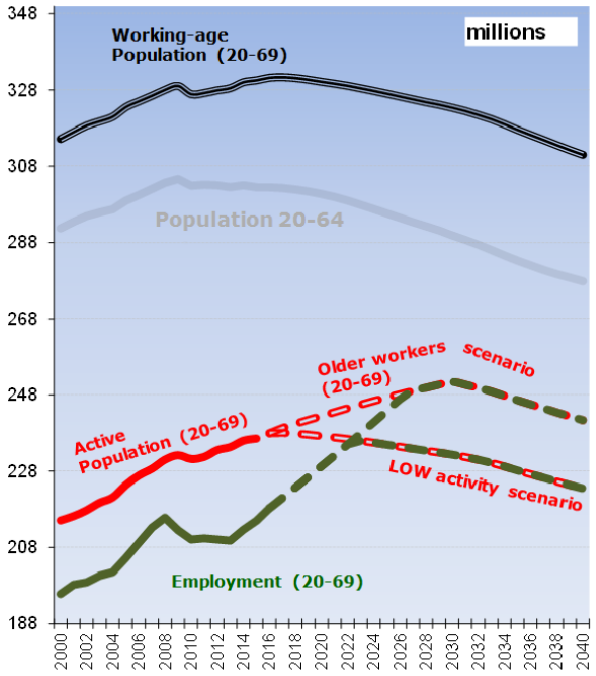
([143]) See Chapter 4.

([144]) Section 4.2 assumed a strong increase in the activity rate of older workers, there defined as aged 55 to 64 , by another 18 pps until 2030 (to 75 %) – repeating during the next 15 years the same increase as the EU has seen during the past 15 years.

Chart 2.19

By working longer, the EU will gain more time for implementing productivity-enhancing reforms.

Working-age population (aged 20-69) , active population and employment after increasing the activity rate (55-69) by 18 pps by 2030 (older workers scenario), EU-28



Source: DG EMPL calcuations based on Eurostat 2015 population projections (baseline) and Eurostat EU LFS

Click here to download chart.

Working longer will increase the workforce significantly. *Chart 2.19* shows that, in the older workers scenario, after 2030 the working-age population would have increased by some 18 million people (or 6 %), compared with the low-activity scenario, which assumes no increase in age-specific activity rates. This increase is hence significantly higher (by 6 million people) than was the case in *Chart 2.8* above which did not include 65 to 69 year-olds in the working-age population.

Working longer will allow for higher employment growth during the transition period. Employment growth could continue at the rate recently observed, 1.3 % per year ([145]), until 2026 (i.e. for four more years than in the low-activity scenario) and remain positive until 2030. The pressure to generate higher productivity growth would not disappear in the long run, but it would be significantly reduced in the medium run. The EU would gain more time to implement productivity-enhancing reforms for the period after 2030.

4.7. The potential contribution of extending hours worked

Increasing employment rates have supported growth while the decline in hours worked has dampened it. The demographic dividend that contributed to employment growth in recent decades, up to 2010, came from higher headcount employment associated with the increasing working-age population. However, in order to measure the total labour contribution to economic growth it is important also to look at hours worked per worker. The trend here has clearly been downwards in countries where data is available ([146]). The positive contribution of the rate of employment growth to economic growth (the demographic dividend) was dampened by the negative growth contribution of average hours worked per employee.

Therefore, reversing the trend of declining hours may help sustain growth in the future in the face of the demographic challenge. It would help to underpin productivity as the main engine of growth (in the above analysis, productivity was simply defined as GDP per person employed and would thus be raised by longer hours worked per employed person ([147])). There may be scope for raising hours worked. For instance, today more than one in four people working part-time in the EU do so involuntarily. One option to slow down the trend towards declining hours would thus be to reduce that proportion.

However, the corresponding boost to growth is likely to be limited. It is questionable whether the overall trend towards declining number of hours worked per employed person could or should be reversed. First, it is the result of "gradual but fundamental changes in the world of work which have been taking place in recent decades. These include higher proportions of women and older workers in the workforce, new types of labour contracts, technical innovations and the increasing significance of part-time work. Many of these changes have been beneficial for the quality of work, flexibility and higher [hourly] productivity" ([148]). Secondly, a reversal of these trends would be counter-productive to the extent that it could impact negatively on the number of people in employment, thereby dampening the growth of total labour input. Indeed, higher part-time employment has contributed to the strong increase in older workers' and female employment.

5. CONCLUSIONS

After decades of improving living standards, there are concerns that today's young Europeans may end up less well off than their parents. During the downturn, the incomes of older people were relatively well protected, whereas (young) adults

([145]) This compares with the annual average 1.1 % observed for 20 to 64 year-olds that was used in the scenarios above.

([146]) See the annual hours worked per person employed in the Commission's AMECO database. For the EU-15 there was a decline of yearly working hours by almost 110 (more than -6 %) over the last 20 years. http://ec.europa.eu/economy_finance/ameco/user/serie/ResultSerie.cfm.

([147]) To that extent measuring labour productivity per hour worked provides a better picture of productivity developments in the economy than labour productivity per person employed, as it eliminates differences in the full time/part time composition of the workforce across countries and years (Eurostat 2017).

([148]) Peschner and Fotakis (2013), p. 24.

appear to have been particularly exposed to the impact of the crisis. In a context of constrained public budgets, pensions and healthcare represent a growing share of public expenditure.

It is not yet clear what role the crisis plays in explaining the recent change, particularly as the relative decline of the income of young adults had already started before the crisis. It remains to be seen how the crisis and structural changes in the economy will ultimately affect young people. This will depend to a large extent on their labour market and educational performance in the years to come and on the impact of policies that have been refocused from income redistribution towards investment in enabling services.

Demographics may bring increasing scarcities, limiting economic growth and complicating the distribution of its fruits between generations. Intergenerational fairness is not only a question of how fairly a given level of GDP is distributed among young and old. Lower GDP growth means that fewer resources are available for distribution across all generations, both young and old. It will hence make distribution from one group in society to another more controversial. In other words: growth limits will affect the resources available to all future generations and will thus further complicate the task of achieving inter-generational fairness.

Pressure for productivity growth will intensify. Before the crisis, the EU had seen its GDP grow by around 2 % per year as a long-term average. Without more immigration and/or higher fertility than assumed in Eurostat's 2015 population projection, productivity growth would have to double after 2030, compared with its long-term average, for the EU to keep an annual growth of close to 1½ % per year in the future – the rate assumed in the Commission's 2015 Ageing Report. This would have to happen even under very optimistic assumptions on labour market participation, especially of women and older workers. The decline of the EU's total population will start only after 2046. Only after that year will the situation slowly start to become less pressing as a given level of GDP will be distributed to fewer people.

Engaging more people actively in the labour market will make an important difference in the medium term. Today almost 30 % of people aged 20 to 64 are not in employment: 7% are searching for employment but 23 % - the inactive - are not. The EU can no longer afford so many inactive people. Engaging those people actively in the labour market - by reducing the gender employment gap, by further educational progress and by extending working lives (including beyond the age of 65) - would gain the EU more time in the medium term to implement the productivity-enhancing reforms that will be needed to maintain growth in the long term. This is all the more true as the potential boost from increasing working hours is likely to be limited.

Realistically, inducing efficient immigration management and higher fertility are one way to alleviate the strains. Increasing fertility would make a contribution towards easing the pressure sustainably. However, even assuming a strong increase in fertility starting now, its positive effect would not materialise before the mid-2030s. Higher migration would have an immediate effect on potential labour supply. Even if it is unlikely to keep employment growth from slowing down, it will enable it to remain positive if combined with successful integration policies.

But productivity-enhancing reforms will inevitably gain more policy attention. The declining workforce and the unavoidable pressure to generate higher productivity growth will increasingly call for the development of skills and better education, combined with measures to improve the business environment. Extensive analysis by the European Commission has shown the effectiveness of such investment in human capital in achieving both higher employment *and* higher productivity ([149]). These policies trigger capital accumulation and increase the complementarity between labour and other production factors via upskilling and reskilling. At the same time they speed up technological progress by increasing the workforce's innovative capacity. Instead of trying to achieve higher productivity growth only through capital deepening and through rationalisation, human capital investment policies put the quality of labour at the forefront of policy action. Such re-thinking of productivity-enhancing policy will be even more important as an ageing workforce may find it more difficult to generate higher productivity growth ([150]).

The expectation of higher living standards over the life cycle and across generations is increasingly challenged. While the welfare position of today's older people is still favourable, this could be challenged in future decades because of the new scarcities and younger people are already experiencing situations that are less favourable than those experienced some decades ago. It is therefore important to identify evolving inequalities and underlying structural factors with a view to deciding where policy change is needed. Chapter 4 will explicitly consider the distribution of resources across generations, focusing on how today's young cohorts and those not yet born will be affected by the demographic change and by policies that address this challenge.

([149]) For example: Peschner and Fotakis (2013), Sec. 4.2, European Commission (2013), Chapter 1.6, European Commission (2014), Chapter 2.4.

([150]) Aiyar et al (2016).

References

Aiyar, S., Ebeke, C., and Xiaobo, S. (2016), The Impact of Workforce Aging on European Productivity, IMF Working paper WP 16/238.

Albertini, M., and Kohli, M. (2013), The generational contract in the family: An analysis of transfer regimes in Europe, *European Sociological Review*, 29(4), pp.828-840.

van Ark, B., Chen, V., Colijn, B., Jaeger, K., Overmeer, W., and Timmer, M. (2013), Recent Changes in Europe's Competitive Landscape — How the Sources of Demand and Sup-ply Are Shaping Up, in: European Economy, Economic Papers 485, April 2013. http://ec.europa.eu/economy_finance/publications/economic_paper/2013/pdf/ecp485_en.pdf

Auerbach, A. J., Gokhale, J. and Kotlikoff, L. J. (1994), Generational accounting: a meaningful way to evaluate fiscal policy, *The Journal of Economic Perspectives*, 8(1), pp.73-94.

Cedefop (2016). *Future skill needs in Europe: critical labour force trends*. Cedefop research paper; No 59, Luxembourg: Publications Office of the European Union. http://www.cedefop.europa.eu/en/publications-and-resources/publications/5559

Coomans, G. (2012): *The EU workforce and future international migration*, in OECD (2012). Free Movement of Workers and Labour Market Adjustment: Recent Experiences from OECD Countries and the European Union, p. 197-211, http://www.oecd-ilibrary.org/social-issues-migration-health/free-movement-of-workers-and-labour-market-adjustment_9789264177185-en

Chauvel, L. and Schröder, M. (2014), Generational Inequalities and Welfare Regimes, *Social Forces*, 92(4), pp.1259-1283.

Davies, R. (2013), Promoting fertility in the EU, Social policy options for Member States, Library Briefing, European Parliament, 21/05/2013.

http://www.europarl.europa.eu/RegData/bibliotheque/briefing/2013/130519/LDM_BRI%282013%29130519_REV2_EN.pdf

Decoster, A., Flawinne, X., and Vanleenhove, P. (2014). Generational accounts for Belgium: fiscal sustainability at a glance, *Empirica*, 41(4), pp.663-686.

Diris, R., Vandenbroucke, F., and Verbist, G. (2017), The impact of pensions, transfers and taxes on child poverty in Europe: the role of size, pro-poorness and child orientation, *Socio-Economic Review*, https://doi.org/10.1093/ser/mww045.

European Commission (2013), EU employment in the global context. Chapter 1 in *Employment and Social Developments in Europe 2013*, Luxembourg: Publications Office of the European Union..

European Commission (2014), Investing in human capital and responding to long-term challenges. Chapter 2 in *Employment and Social Developments 2014*, Luxembourg: Publications Office of the European Union.

European Commission (2015a), The efficiency and effectiveness of social protection systems over the life course. Chapter III.2 in *Employment and Social Developments in Europe 2015*. Luxembourg: Publications Office of the European Union.

European Commission (2015b), *The 2015 Pension Adequacy Report: current and future income adequacy in old age in the EU, Volume I, Joint Report prepared by the Social Protection Committee (SPC) and the European Commission (DG EMPL),* Luxembourg: Publications Office of the European Union, http://ec.europa.eu/social/BlobServlet?docId=14529&langId=en

European Commission (2015c), *Demography Report – 2015 edition,* Luxembourg: Publications Office of the European Union. http://ec.europa.eu/eurostat/web/ess/-/demography-report-2015-edition

European Commission (2016a), *Special Eurobarometer 451, Future of Europe, Report.* Brussels: European Commission.

European Commission (2016b), *Employment and Social Developments in Europe. Annual Review 2016*. Luxembourg: Publications Office of the European Union.

European Commission (2016c), '*Fighting Poverty and Exclusion through Social Investment: A European Research Perspective*', Brussels, European Commission.

European Commission (2017a), *White Paper on the Future of Europe*, COM(2017)2025, 1.3.2017.

European Commission (2017b), *Reflection Paper on the Social Dimension of Europe*, COM(2017)206, 26.04.2017

European Commission (2017c), *What makes a fair society? Insights and evidence*. Luxembourg: Publications Office of the European Union.

European Parliament (2013), Promoting fertility in the EU, Social policy options for Member States, Library Briefing (21.05.2013); author: Davies, R. http://www.europarl.europa.eu/thinktank/en/document.html?reference=LDM_BRI(2013)130519

Fotakis C., Peschner, J., *Demographic change, human resources constraints and economic growth – the EU*

challenge compared to other global players, European Commission, DG EMPL, Working Paper 1/2015. http://ec.europa.eu/social/BlobServlet?docId=13727&langId=en

Freedman, M. (2017), Are Recent Generations Catching Up or Falling Behind? Trends in Inter-Generational Inequality, *Luxembourg Income Study (LIS) Working Papers*, 689.

Gasior, K. and Rastrigina, O. (2017). Nowcasting: timely indicators for monitoring risk of poverty in 2014-2016, *Euromod Working Paper Series*, EM 7/2017.

Gradín, C. (2016). Why is Income Inequality so High in Spain? in Cappellari, L., Polachek, S.W and Tatsiramos, K. (Eds.): *Income Inequality Around the World*, Emerald Group Publishing Limited, pp.109–177.

Hemerijck, A., Burgoon, B., Di Pietro, A., and Vydra, S. (2017), *Assessing Social Investment Synergies*, Luxembourg: Publications Office of the European Union.

Kochskämper, S. and Niehues, J. (2017), Entwicklung der Lebensverhältnisse im Alter, *Vierteljahresschrift zur empirischen Wirtschaftsforschung*, 44(1), Köln: Institut der deutschen Wirtschaft Köln.

Lanzieri, G., *Towards a 'baby recession' in Europe?*, Eurostat Statistics in focus 13/2013. http://ec.europa.eu/eurostat/documents/3433488/5585916/KS-SF-13-013-EN.PDF

Lemaître, G., *The demography of occupational change and skill use among immigrants and the native-born*, in: Matching Economic Migration with Labour Market Needs, OECD publishing (2014).

McDonald, P., *Low Fertility and Policy*, Ageing Horizons, Issue No. 7, 22-27.

Mudrazija, S. (2016), Public transfers and the balance of intergenerational family support in Europe, *European Societies*, 18(4), pp.336–358

Peschner, J. and Fotakis, C. (2013), *Growth potential of EU human resources and policy implications for future economic growth*, European Commission, DG EMPL, Working Paper 3/2013. http://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=7662&type=2&furtherPubs=yes

Pew Research Centre (2016), *Global Indicators Database*. [online] Available at: http://www.pewglobal.org/database/indicator/74/survey/all/

Platenga, J., Remery, C., Provision of Childcare Services: A Comparative Review of EU Member States, CESifo DICE Report 1/2015 (March), https://www.cesifo-group.de/portal/.../135BA81A80A24D7AE05400144FAFB1DA

Raffelhüschen, B. (1999), Generational accounting in Europe, *The American Economic Review*, 89(2), pp.167-170.

Rincon-Aznar, A., Foster-McGregor, N., Pöschl, J., Stehrer, R., Vecchi, M., Venturini, F., *Reducing Productivity and Efficiency Gaps: the Role of Knowledge Assets, Absorptive Capacity and Institutions*, The Vienna Institute for International Economic Studies, Research Report 396, September 2014. https://wiiw.ac.at/reducing-productivity-and-efficiency-gaps-the-role-of-knowledge-assets-absorptive-capacity-and-institutions-dlp-3380.pdf

Sleebos, J. E., Low Fertility Rates in OECD Countries: Facts and Policy Responses, OECD Social, Employment and Migration Working Paper No. 15, DELSA / ELSA / WD / SEM(2003)15, 7. Oct. 2003.