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# Demography & Inequality

How Europe's changing population will impact on income inequality

Benoit Guerin



EUROPE

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# Demography and Inequality

## How Europe's changing population will impact on income inequality

Benoit Guerin

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# Preface

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This policy brief was developed by RAND Europe, which in 2011 was appointed by the European Commission's Directorate-General for Employment, Social Affairs and Inclusion to provide content and technical support for the European Alliance for Families platform.

The European Alliance for Families (EAF) was set up to explore demographic and economic challenges in the EU from a family perspective. Its purpose is to share the best of policymaking for families and to foster cooperation and mutual learning in the field. This is achieved through information provided on the EAF website, which enables policymakers from the Member States to search evidence-based family practices from around the EU and to share knowledge about practices that are being developed, and also by bringing together government, civil society and European Union representatives for seminars and workshops to exchange ideas and learn from each other.

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The document is designed to provide insights into issues of interest to policymakers. It has been reviewed by one of the EAF's external experts in family policy, and internally, following RAND's quality assurance processes.

The opinions expressed do not necessarily reflect the position of the European Commission.

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## Core Messages

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- Income inequality in Europe is most sensitive to population ageing, since the elderly face high poverty risks and represent a growing share of the population. As pension systems come under increased strain, meeting the Europe 2020 poverty targets will partly hinge on sustainable pensions.
- Families are changing and new family structures may pose particular challenges to child upbringing and the provision of support, including to the elderly.
- Growing education rates for women will create opportunities and risks for income inequality: higher employment rates for women may bring about greater income inequality while potentially creating imbalance owing to delayed childbirth or the growth of childlessness among couples.
- A rise in the number of first- and second-generation migrants will increase the share of people who traditionally are less well educated and less well integrated; tackling migrant integration will be key to reducing poverty.
- The interplay between life expectancy, household structure and education rates indicates that future policy will need to take into account interactions between different demographic factors and their combined effect on income inequality over the coming decades in Europe.

## Summary

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Analysing future demographic trends will help policymakers successfully implement Europe's poverty strategy for 2020 by reducing at-risk-of-poverty rates for a significant number of EU citizens. Sections of the population most at risk of poverty that are likely to grow in size include the elderly and migrants, as well as elderly women and single heads of households. Successfully managing the transition to an increasingly ageing population while continuing to maintain high welfare standards will depend upon continuing reform of pensions systems, healthcare systems and labour markets. Similarly, in light of Europe's aim to reduce poverty and income inequality, changing family structures and increasing numbers of households at higher risk of poverty will require careful attention. Predicted future demand for highly skilled individuals and declining demand for low-skilled workers may amount to a stretch in earnings between low and high-income households. Finally, the predicted rise in the proportion of migrants in the European population could present significant challenges for social mobility and labour market integration policies.

# 1. Introduction

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Poverty risks and income inequality are complex and interlinked policy challenges. Various indicators suggest that both phenomena have been on the rise in Europe over past decades.<sup>1,2</sup> The European Union estimates that more than 80 million people in the EU are at risk of poverty, whilst in-work poverty rates stand at around 8 percent.<sup>3,4</sup> As part of the Europe 2020 targets, the EU aims to reduce the number of people in or at risk of poverty and social exclusion by 20 million.<sup>4</sup> The proportion of a population at risk of poverty impacts on income inequality (which has tended to rise over the past few years, especially as the share of top incomes increased). Income inequality in turn reduces income growth and social mobility for poorer individuals, thereby fostering higher risks of poverty.<sup>5,6</sup>

Inequality and poverty risks are affected by a range of factors including economic growth, globalisation, technological change, labour markets, social protection mechanisms, and demography. Demography is the study of the size, structure, and distribution of populations, and this brief focuses on the impact that it may have on income inequality in the 2020–2060 horizon, with a view to helping decisionmakers factor demographic change into long-term strategies for the reduction of inequality and poverty in Europe.

While inequality in income distribution is mostly driven by changes in the distribution of wages, several demographic variables should also be considered: these relate to the social situation of individuals and the choices they make. The European Social Situation Observatory has undertaken work to decompose income inequality, and has highlighted the importance of several variables (see Figure 1). This brief focuses on four factors related to demography, all of which have been shown to have an impact on income inequality<sup>7</sup>: age structure, household structure, ethnic composition of the population, and education levels of the household head.<sup>8</sup> For each of these factors, key demographic trends are outlined, as well as their

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<sup>1</sup> EC (2012b), *Employment and Social Developments in Europe 2011*, Luxembourg: Publications Office of the European Union.

<sup>2</sup> OECD (2011b), *Growing Income Inequality in OECD Countries: What Drives it and How Can Policy Tackle it?*, Forum, Paris, 2 May 2011. As of 30 March 2013: <http://www.oecd.org/social/socialpoliciesanddata/47723414.pdf>

<sup>3</sup> EC (2011), *The Social Dimension of the Europe 2020 Strategy – A report of the Social Protection Committee*, Luxembourg: Publications Office of the European Union.

<sup>4</sup> EC (2012a), *Europe 2020 targets*, European Commission website. As of 30 March 2013: [http://ec.europa.eu/europe2020/europe-2020-in-a-nutshell/targets/index\\_en.htm](http://ec.europa.eu/europe2020/europe-2020-in-a-nutshell/targets/index_en.htm)

<sup>5</sup> Jackson, B., and Segal, P. (2004), *Why inequality matters*, Catalyst Working Paper, October 2004. As of 30 March 2013: [http://paulsegal.org/documents/Why\\_Inequality\\_Matters.pdf](http://paulsegal.org/documents/Why_Inequality_Matters.pdf)

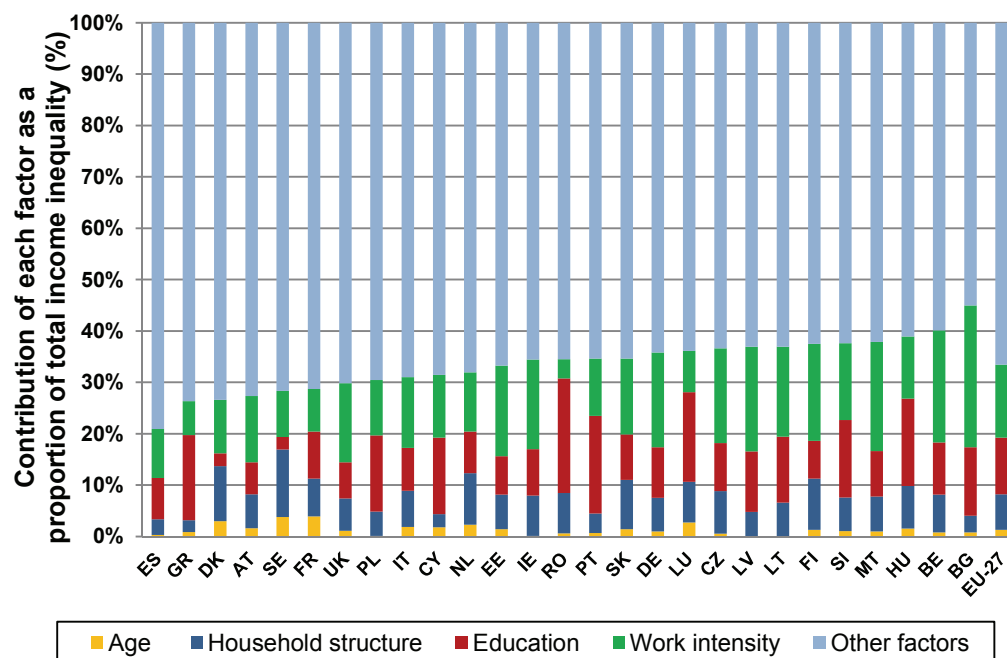
<sup>6</sup> Heshmati, A. (2004), *Growth, Inequality and Poverty Relationships*, IZA Discussion Paper No. 1338, Bonn; Institute for the Study of Labor. As of 30 March 2013: <http://ftp.iza.org/dp1338.pdf>

<sup>7</sup> EC (2012b).

<sup>8</sup> The head of the household is defined as the householder and person providing support and maintenance to individuals related to him or her.

likely evolution; the main potential underlying mechanisms by which they affect inequality and poverty are explored, and policy challenges and solutions are examined.

**Figure 1: Combined effect of differences in age, household structure, education level and household work intensity on overall inequality of income, income year 2008**



SOURCE: European Commission, European Social Situation Observatory - Income distribution and living conditions, calculations based on EU-SILC 2009 (2011).

Given the wide range of impacts that demography has on public expenditure commitments for education, welfare and long-term care, labour markets, housing demand and so forth, any forecasting can only be probabilistic. It should also be noted that the magnitude of the impact of each demographic variable on income inequality varies across the EU. For instance, education levels of the head of the household account for 22 percent of overall inequality in Romania, but only 2–3 percent in Denmark (as can be seen in Figure 1), and the education profile of the population differs between the EU-15<sup>9</sup> and the EU-12 Member States that joined the EU after 2004.<sup>10</sup>

<sup>9</sup> The EU-15 designates the Member States of the Union before the accession of the 12 new Member States after 2004, and is composed of Austria, Belgium, Denmark, Germany, Greece, Finland, France, Ireland, Italy, Luxembourg, Portugal, Spain, Sweden, the Netherlands and the United Kingdom. The EU-12 Member States that joined the European Union after 2004 are Bulgaria, Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, and Slovenia.

<sup>10</sup> Social Situation Observatory (2010a), *Decomposition of inequality by population sub-groups*. As of 30 March 2013: <http://www.socialsituation.eu/monitoring-report/income-distribution/decomposition-of-income-inequality>

## 2. Age has a limited effect on income inequality

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### 2.1. A demographic shift is taking place in Europe

Europe's population is ageing. By 2030, the EU-27 population as a whole is projected to increase to 522.3 million according to Eurostat,<sup>11</sup> and it is estimated that 23.5 percent of the share of the total population of Europeans will be 65 or older in 2030.<sup>12</sup> However, projections are not forecasts, and serve only to illustrate a trend that would develop under a range of assumptions about fertility, life expectancy and (especially) migration, which may not be realised.<sup>13,14</sup> As Europe's population grows, the share of elderly citizens will increase, owing partly to the projected rise in life expectancy, although there is scholarly disagreement on the pace and level that will be reached by 2030.

Europe's relatively low fertility rates will also contribute to population ageing. The declining Total period Fertility Rate (TFR)<sup>15</sup> illustrates this change. The TFR for the EU-27 dropped from 2.1 in the 1970s to 1.6 in 2009.<sup>16,17</sup> Data indicate variation between the EU-12 – 1.3 children per woman in 2006 – and the EU-15 – 1.6 children per woman in 2006.<sup>18</sup> Eurostat data from 2008 indicate that in 11 of the 27 EU Member States, decreasing birth rates have led to a negative natural increase. While around a quarter of the European population lives in countries where fertility rates are close to the replacement level, about 75 percent of the EU population lives in countries where fertility rates are well below replacement levels,

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<sup>11</sup> Eurostat (2012a), *1st January population by sex and 5-year age groups*, Eurostat website, code proj\_10c2150p. As of 30 March 2013: [http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=proj\\_10c2150p&lang=en](http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=proj_10c2150p&lang=en)

<sup>12</sup> Giannakouris, K. (2010), *Regional population projections EUROPOP2008: Most EU regions face older population profile in 2030*, Eurostat Statistics in focus, 1/2010. As of 30 March 2013: [http://epp.eurostat.ec.europa.eu/cache/ITY\\_OFFPUB/KS-SF-10-001/EN/KS-SF-10-001-EN.PDF](http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-SF-10-001/EN/KS-SF-10-001-EN.PDF)

<sup>13</sup> OECD (2012), *The Future of Families to 2030*, Paris: OECD. As of 30 March 2013: <http://dx.doi.org/10.1787/9789264168367-en>

<sup>14</sup> Mamolo, M., and Scherbov, S. (2009), *Population Projections for Forty-Four European Countries: The Ongoing Population Ageing*, European Demographic Research Papers 2. Vienna: Vienna Institute of Demography of the Austrian Academy of Sciences. As of 30 March 2013: [http://www.oeaw.ac.at/vid/download/edrp\\_2\\_09.pdf](http://www.oeaw.ac.at/vid/download/edrp_2_09.pdf)

<sup>15</sup> The TFR is measured as the average number of children that would be born to a woman over her lifetime if she were to experience the exact current age-specific fertility rates (ASFRs) throughout her life.

<sup>16</sup> European Commission, European Social Situation Observatory (2011), *Income distribution and living conditions, combined effect*, Social Situation Observatory website, and personal correspondence. As of 30 March 2013: <http://www.socialsituation.eu/monitoring-report/income-distribution/decomposition-of-income-inequality/the-effect-of-the-degree-of-urbanisation-on-income-distribution>

<sup>17</sup> Eurostat (2011), *Migrants in Europe: A statistical portrait of the first and second generation*, 2011 edition, Eurostat Statistical books, Luxembourg: Publications Office of the European Union.

<sup>18</sup> Van Nimwegen, N., and Van der Erf, R. (eds.) (2010), *Demography Monitor 2008: Demographic Trends, Socio-Economic Impacts and Policy Implications in the European Union*, Monitoring Report prepared by the European Observatory on the Social Situation – Demography Network, Netherlands interdisciplinary demographic institute, Amsterdam: KNAW Press.

irrespective of fertility indicators.<sup>19</sup> The fertility rate is projected to remain below replacement levels (around 2.1 children per woman)<sup>20</sup> at around 1.6 by 2030 in the EU-25.<sup>21</sup>

Figure 2 shows that according to Eurostat population projections for the EU-27 in 2060, the share of the population aged 65 and over will grow, while the population under 20 and the working-age population will decrease. The old-age dependency ratio<sup>21</sup> is expected to rise from 25.4 percent in 2008 to 38 percent in 2030, and reach 51 percent by 2050.<sup>22,23</sup> At the same time, the lower share of younger members of the workforce has not equated to improvements in youth employment over the past 30 years.<sup>24</sup>

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<sup>19</sup> Kotowska, I. (2012), 'Family Change in Europe from the Transition to Adulthood Perspective', in Knijn, T. (ed.), *Work, Family Policies and Transitions to Adulthood in Europe*, Basingstoke: Palgrave Macmillan.

<sup>20</sup> Replacement level refers to the fertility rate that would be needed for the current generation to be replaced by a future generation, assuming net migration is zero.

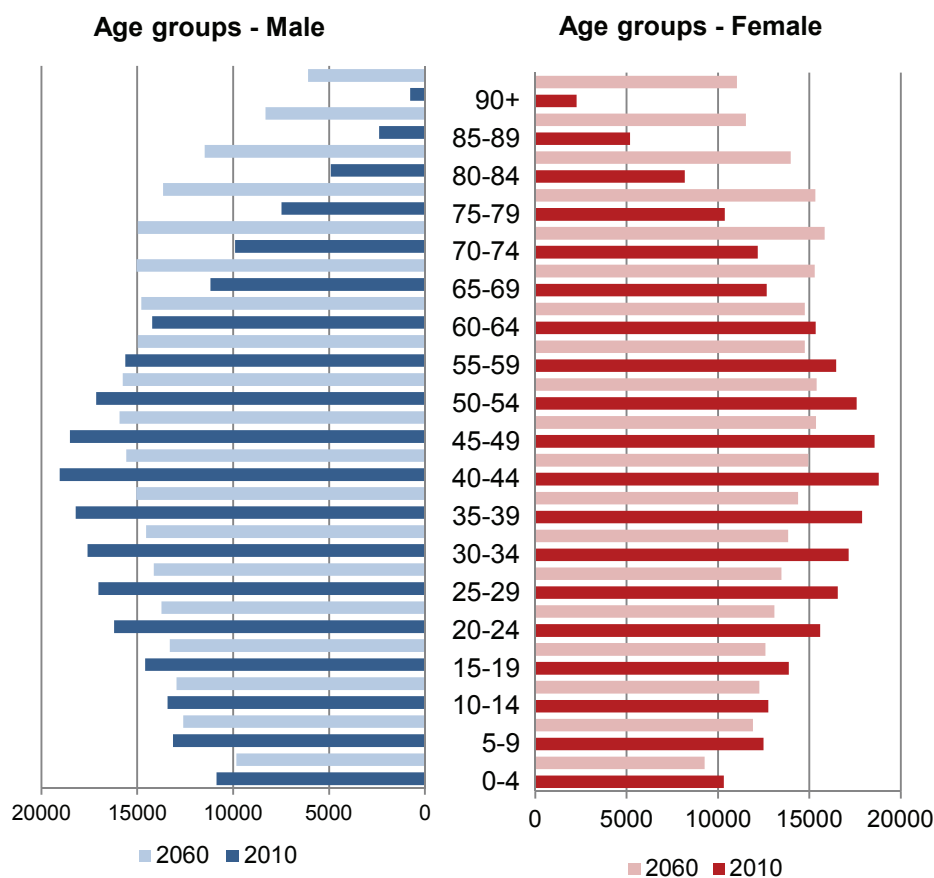
<sup>21</sup> The old-age dependency ratio is defined as the ratio between the total projected number of elderly citizens (aged 65 and over) and the total projected number of working-age people required to support them (individuals aged 15–64).

<sup>22</sup> Giannakouris (2010).

<sup>23</sup> Commission of the European Communities (2007), *Joint Report on Social Protection and Social Inclusion: Supporting Document*, SEC(2007) 329. As of 30 March 2013: [http://ec.europa.eu/employment\\_social/social\\_inclusion/docs/2007/joint\\_report/sec\\_2007\\_329\\_en.pdf](http://ec.europa.eu/employment_social/social_inclusion/docs/2007/joint_report/sec_2007_329_en.pdf)

<sup>24</sup> Van Stolk, C., Hoorens, S., Brutscher, P-B., Hunt, P., Montoya, S. and Janta, B. (2011), *Life after Lisbon: Europe's Challenges to Promote Labour Force Participation and Reduce Income Inequality*, Santa Monica, Calif.: RAND Corporation, MG-1068-RE. <http://www.rand.org/pubs/monographs/MG1068.html>

Figure 2: Population pyramids by age group and sex (in thousands), EU-27 in 2010 and 2060



SOURCE: DG ECFIN and AWG (2012); personal correspondence; European Commission Services; Eurostat; EUROPOP2010.

## 2.2. Europe's ageing population will affect the sustainability of the welfare system

Research by Jäntti (1997) on the impact of demographic characteristics on inequality in five countries in the 1980s found that neither the population's age structure nor living arrangements were significant predictors of increasing inequality.<sup>25</sup> More recently, according to a study conducted by the Social Situation Observatory (2010), which has decomposed the demographic drivers of income inequality in Europe, the age of the household head has a limited effect on the extent of overall inequality in income distribution,<sup>26</sup> and only accounted for 4 percent of overall inequality in France in 2008 (where the effect is particularly salient).

Europe's ageing population will create significant policy challenges. Until now, pension provisions have been adequate. However, under the influence of budget restrictions owing to the financial crisis and to population ageing, and given the emergence of more complex household patterns, current pension

<sup>25</sup> EC (2012b).

<sup>26</sup> The Social Situation Observatory's research quantifies the effect of a variable on income inequality both in proportionate terms (the relative amount of inequality that a specific factor accounts for, based on regression models) and in absolute terms (how much a given factor contributes to the value of the Gini coefficient).

provision may become gradually inadequate. Finding solutions to these issues will stem the increase in at-risk-of-poverty rates in old age.

The elderly, young people aged 16–24, and children feature among the core groups with a higher-than-average poverty risk in Europe, often due to income levels below the poverty line, compared to people of working age.<sup>27,28,29</sup> EU-SILC data suggests that in the 2008 period, risk of poverty levels for both the elderly and children were approximately three percentage points higher than the risk of poverty of the overall population in the EU-27.<sup>30,31</sup> In 2012, the at-risk-of-poverty rates for the EU-27 tended to be lower for individuals aged 65 or over (16 percent in 2010) compared to those below the age of 65 – 16.4 percent in 2010.<sup>32</sup> However, at-risk-of-poverty rates are higher for the oldest cohorts aged 75 and over (18.2 percent in the EU-27 in 2010) compared to younger cohorts, owing partly to the fact that women face higher risks of poverty and social exclusion, live longer than men on average, and therefore dominate the oldest age cohort.<sup>33</sup>

Transformations in Europe's population structure will affect the economy and labour markets, impacting on labour supply and demand, and earnings inequality in particular. The European Commission's Directorate-General for Economic and Financial Affairs (DG ECFIN) projects that the annual average potential gross domestic product (GDP) growth rate in the EU will fall from 2.4 percent in the period 2004–2010 to 1.2 percent between 2031 and 2050.<sup>34</sup> These changes will affect living standards. As GDP growth rates are underpinned by employment and productivity, lower GDP growth is likely have the most effect on those not in employment, such as individuals who are retired or children (depending on parental income) in particular, which in turn may drive up at-risk-of-poverty rates among these population groups.

As the share of the elderly population rises, the affordability of pensions systems comes under pressure. Since the economic situation of the elderly is determined by previous economic activity, and by public transfers via pensions systems, two problems in particular can be highlighted: discrepancy between different types of pension systems, and changes in pension payments that may undermine the income of elderly citizens. Theoretical economic models posit that all other things being equal, an ageing population and a rising old-age dependency ratio tend to increase income inequality. This is because of the increased pressure on financing public transfer systems, which in turn influence the distribution of disposable

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<sup>27</sup> Atkinson, A.B., Cantillon, B., Marlier, E., and Nolan, B. (2005), *Taking forward the EU Social Inclusion Process*, independent report commissioned by the Luxemburg Presidency of the Council of the European Union. As of 30 March 2013: [http://www.esri.ie/pdf/BKMNEXT067\\_Taking%20Forward.pdf](http://www.esri.ie/pdf/BKMNEXT067_Taking%20Forward.pdf)

<sup>28</sup> Aassve, A., Davia, M., Iacovou, M., and Mazzucco, S. (2007), 'Does leaving home make you poor? Evidence from 13 European countries', *European Journal of Population/Revue Européenne de Démographie* 23.3: pp.315–338.

<sup>29</sup> Breen, R., García-Peñalosa, C., and Orgiazzi, E. (2008), *Factor Components of Inequality: Cross-Country Differences and Time Changes*, Luxembourg Income Study Working Paper Series, Working Paper No. 503. As of 30 March 2013: <http://www.lisproject.org/publications/liswps/503.pdf>

<sup>30</sup> EC (2011).

<sup>31</sup> Van Stolk et al. (2011).

<sup>32</sup> Social Protection Committee and EC DG EMPL (2012), *Pension Adequacy in the European Union 2010–2050*. As of 30 March 2013: <http://ec.europa.eu/social/BlobServlet?docId=7805&langId=en>

<sup>33</sup> Zaidi, A. (2010), *Poverty Risks for Older People in EU Countries – An Update*, European Centre Policy Brief, January 2010. Vienna: European Centre for Social Welfare Policy and Research.

<sup>34</sup> Economic Policy Committee and EC DG ECFIN (2006).



income, particularly for the elderly.<sup>35</sup> The rise in the share of elderly individuals will create discrepancies with regard to income from pensions, since countries with high levels of universal and comprehensive public pension benefits delivering a flat-rate pension will favour income distribution in old age by improving the relative income status of former poorer workers. In contrast, private retirement pension systems tend to link the value of pensions to pre-retirement income, thereby maintaining and sometimes strengthening pre-retirement income disadvantages and producing skewed income distribution in retirement years.<sup>36</sup>

The affordability of pension systems creates challenges insofar as the income of elderly individuals tends to hover around the poverty risk threshold (this was the case for about one fifth of individuals aged 65 or over in 2012), which means even slight changes in income could see large swathes of the elderly population cross at-risk-of-poverty thresholds in the future.<sup>37,38</sup> In short, the quality of the public pension levels directly affects the proportion of individuals aged 65 or over who are at risk of poverty or social exclusion. This has implications for inequality and for welfare since inequality in income has been linked to health outcomes.<sup>39</sup> Other factors such as living arrangement patterns for the elderly (living with children or alone) may also have an impact on their economic situation.<sup>40</sup>

As the old-age dependency ratio increases, the greying European population is likely to expect governments to maintain levels of welfare provision for the elderly. If this means an increasing share of government revenue goes to the elderly, the amount of support available for younger workers and working-age households would be reduced.<sup>41</sup> Further challenges may be created as labour becomes scarce, with services (including services to the elderly) becoming increasingly expensive in relation to other goods. Another issue to consider is the role of gender, since older women face higher risks of poverty than older men. Women's longer life expectancy means they are over-represented in the ranks of retired Europeans: in 2008 women accounted for 59 percent of the population of the EU-25 aged 65 or over.<sup>42</sup> Yet women are more likely to have lower earnings from pensions. The negative impact of gender on pensions is likely to be especially acute in countries where pension earnings are linked to pre-retirement wages, since women's earnings are lower than men's owing to the gender pay gap and to interruptions in employment linked to family care.<sup>43</sup>

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<sup>35</sup> Von Weizsäcker, R.K. (1995), *Public Pension Reform, Demographics, and Inequality*, Centre for Economic Policy Research Discussion Paper 978. As of 30 March 2013: <http://www.jstor.org/stable/pdfplus/20007465.pdf?acceptTC=true>

<sup>36</sup> Brown, R.L., and Prus, S.G. (2003), *Social transfers and income inequality in old-age: a multi-national perspective*, SEDAP Research Paper No. 109. As of 30 March 2013: <http://socserv.mcmaster.ca/sedap/pl/sedap109.pdf>

<sup>37</sup> Brandolini, A., and D'Alessio, G. (2001), *Household structure and income inequality*, Centre for Household, Income, Labour and Demographic Economics Working Paper N. 6/2001. As of 30 March 2013: [http://www.child-centre.unito.it/papers/child6\\_2001.pdf](http://www.child-centre.unito.it/papers/child6_2001.pdf)

<sup>38</sup> Social Protection Committee and EC DG EMPL (2012).

<sup>39</sup> Deaton, A.S., and Paxson, C. (1998), 'Aging and Inequality in Income and Health', *The American Economic Review* 88.2: Papers and Proceedings of the Hundred and Tenth Annual Meeting of the American Economic Association (May, 1998), pp.248–253.

<sup>40</sup> Radner, D.B. (1986), *Family income, age, and size of unit: selected international comparisons*, Social Security Administration, Office of Research, Statistics, and International Policy Working Paper Number 32. As of 30 March 2013: <http://www.ssa.gov/policy/docs/workingpapers/wp32.pdf>

<sup>41</sup> Kenworthy, L. (2009), 'The High-Employment Route to Low Inequality', *Challenge* 52.5: pp.77–99.

<sup>42</sup> Eurostat (2008), *The life of women and men in Europe: A statistical portrait*, Eurostat Statistical books, Luxembourg: Publications Office of the European Union.

<sup>43</sup> Plantenga, J., and Remery, C. (2006), *The gender pay gap – Origins and policy responses: A comparative review of 30 European countries*, Group of experts on Gender, Social Inclusion and Employment report, Luxembourg: Office for Official Publications of the European Communities.

## 2.3. Meeting 2020 poverty targets could hinge on successful pension reform

The EU's ability to meet the 2020 target of lifting 20 million people out of poverty hinges partly on preventing poverty among the elderly. Given the strain caused by increasing demand on pensions as a result of the shifting old-age dependency ratio, pension systems in the EU may need to be reformed to ensure sustainability.<sup>44,45</sup> However, pension systems reform could create tensions between sustainability and the possibility of maintaining comprehensive and universal public pension benefits.<sup>46</sup> It is estimated that income replacement rates (the extent to which retirement pensions relate to earnings during an individual's working life) will decrease by 5 percent or 10 percent in most EU Member States between 2010 and 2050 for a male retiring at the age of 65 after having worked for 40 years.<sup>47</sup> Given that pension incomes are close to poverty thresholds, changes in replacement rates could result in a large share of the elderly population being at greater risk of poverty. The extent to which the projected decline in replacement rates between 2010 and 2050 is likely to raise income inequality is difficult to predict accurately using current indicators.<sup>48</sup> In order to combat the challenges linked to pensions reform, governments have sought to raise the pensionable age, to progressively reduce the replacement rates for given retirement ages, to push for supplementary pensions to ensure adequacy of retirement income, and also to encourage individuals to work longer to help offset the reduction in pensions (active ageing). A major challenge will be to continue addressing the gender gap in employment rates as well as in earnings and pensions for women.

Other measures available to the EU and its Member States to stem the effects of an ageing population can be broken down into three categories: those that aim to reform the labour market to improve older workers' incentives to work; those that aim to remove the barriers to the entry of younger workers into the job market; and those aiming to reduce at-risk-of-poverty rates in old age for specific groups. Examples of each include:

- The EU has committed to supporting active ageing and the increased participation of the elderly in the labour market as well as better job opportunities and working conditions for elderly workers in Europe. During the 2012 European Year for Active Ageing and Solidarity between Generations, it was suggested that the longer and healthier lives of Europe's elderly citizens could generate economic benefits for society as a whole through extended working lives or volunteering. Reaching the Europe 2020 target of 75 percent employment rate across the EU-27 for the population aged 20-64 partly hinges on such strategies.
- Through a range of initiatives such as Erasmus and other programmes, European policies have aimed to up-skill younger workers and to raise their employment prospects and employability. The European Commission's flagship 'Youth on the Move' policy aims to modernise education and

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<sup>44</sup> Social Protection Committee and EC DG EMPL (2012).

<sup>45</sup> DG ECFIN and AWG (2012), *The 2012 Ageing Report: Economic and budgetary projections for the EU27 Member States (2010–2060)*. As of 30 March 2013: [http://ec.europa.eu/economy\\_finance/publications/european\\_economy/2012/pdf/ee-2012-2\\_en.pdf](http://ec.europa.eu/economy_finance/publications/european_economy/2012/pdf/ee-2012-2_en.pdf)

<sup>46</sup> Brown and Prus (2003).

<sup>47</sup> Social Protection Committee and EC DG EMPL (2012).

<sup>48</sup> Social Protection Committee and EC DG EMPL (2012).

training, but also to support learning and job mobility for Europe's youth. Policies aiming to help the active population grow may help offset the old-age dependency ratio and may therefore alleviate concerns relating to income inequality and Europe's ageing population.

- Targeted measures aimed at reducing poverty rates for specific groups, particularly elderly women, could reduce income inequality owing to age. Policies to increase the employment rates of women in particular could help raise the overall employment rate and reduce pressure on the old-age dependency ratio while reducing risks of poverty in old age for this group.

## 3. Household structure and size is a driver of inequality

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### 3.1. The structure of European families is changing

Household structures are changing across Europe, with implications for the extent and form of income inequality. Key issues include the fact that parenthood is starting at a later average age, that a growing proportion of men and women are remaining childless, that marriages are less stable and divorces more frequent, and also that cohabitation without marriage, single-parent households and step-parenting are increasingly common. These factors are changing the living arrangements of Europeans.<sup>49</sup> Evidence from EU-SILC data shows that the proportion of the population in the EU-27 living in a single-adult household (which face higher at-risk-of-poverty rates) rose from 12.5 percent in 2005 to 13.4 percent in 2010. The increase was larger in certain countries, while the proportion declined in others. During the same period, the proportion of single adults with dependent children remained stable (around 4.4 percent), while the proportion of large households of two adults with three or more dependent children (which are also more likely to be in poverty) decreased slightly to 6.9 percent in 2010. This illustrates the complexity of forecasting trends in household structure, which depends on a range of micro and macro factors.<sup>50</sup>

Both past and recent research on income inequality has found that living arrangements have had some (albeit little) impact on inequality in Europe and in OECD states.<sup>51,52,53</sup> The impact of household structure on overall income inequality varies across Europe. According to the Social Situation Observatory's decomposition of drivers of income inequality in Europe, household structure accounts for 13 percent of overall inequality in Sweden, but only 3 percent or less of overall inequality in Greece (see Figure 1). A relationship between changes in household structure and income inequality has been identified in Germany, Canada and the United States, although the strength of the relationship is

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<sup>49</sup> Hantrais, L., Philipov, D., and Billari, F.C. (2006), 'Policy implications of changing family formation: Study prepared for the European Population Conference 2005', *Population Studies* 49, Strasbourg: Council of Europe publishing.

<sup>50</sup> Billari, F. (2005), 'Partnership, childbearing and parenting: Trends of the 1990s,' in Macura, M., MacDonald, A.L., and Haug, W. (eds.), *The new demographic regime. Population challenges and policy responses*, New-York, Geneva: United Nations.

<sup>51</sup> Jäntti, M. (1997), 'Inequality in Five Countries in the 1980s: The Role of Demographic Shifts, Markets, and Government Policies', *Economica* 64.255: pp.415–440.

<sup>52</sup> OECD (2011a), *Divided We Stand: Why Inequality Keeps Rising*, Paris: OECD. As of 30 March 2013: <http://dx.doi.org/10.1787/9789264119536-en>

<sup>53</sup> Harkness, S. (2010) *The Contribution of Women's Employment and Earnings to Household Income Inequality: A Cross-Country Analysis*, LIS Working Paper No. 531. As of 30 March 2013: <http://www.lisproject.org/publications/liswps/531.pdf>

debated. Some researchers suggest that changes in household structure increase household earnings and therefore income inequality, while others think this change only has a marginal effect.<sup>54,55</sup>

### 3.2. A growing proportion of at-risk-of-poverty households? The implications of changing family types on income inequality

Although the evidence on the impact of household structure on income inequality is mixed, projections indicate that changing family and household structures in Europe are likely to affect overall income inequality in two ways. First, the proportion of household types that face higher poverty risks (such as single-adult households) is set to rise. Second, it is probable that trends in fertility, assortative mating (whereby high earners and highly-educated men and women marry within the same income or education groups) and education rates among educated couples may contribute to increasing their income, thereby creating a stronger discrepancy in earnings between household types.

As Figures 3a and 3b demonstrate, two types of households face higher risks of poverty: single-adult households (that is, single parents with dependent children, or without children); and households featuring a greater number of children (also see Guigère, 2008). Poverty among single-person households can be higher than in two-adult households, where income pooling can facilitate responses to income shocks if they affect one of the two individuals.<sup>56,57</sup> Also, single-adult households are often composed of young, unemployed individuals or elderly pensioners, both of which face higher risks of poverty.<sup>58</sup> Women are especially at risk since they are over-represented both among single-parent households (in several European states, more than 80 percent of all single-parent households are headed by women) and among single-adult households, since elderly female pensioners are more likely to live alone than elderly men.<sup>59</sup> Risks of poverty among lone parents hover around 30 percent or more in 24 of Europe's Member States.<sup>60</sup> Child poverty has been associated with lone parent households, which are often headed by women, and therefore already at a disadvantage in terms of earnings, partly since the income available to support the child is limited.<sup>61,62</sup>

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<sup>54</sup> Daly, M.C., and Valletta, R.G. (2006), 'Inequality and Poverty in United States: The Effects of Rising Dispersion of Men's Earnings and Changing Family Behaviour', *Economica* 73: pp. 75–98.

<sup>55</sup> Peichl, A., Pestel, N., and Schneider, H. (2010), *Does Size Matter? The Impact of Changes in Household Structure on Income Distribution in Germany*, Deutsches Institut für Wirtschaftsforschung, SOEP papers No. 280. As of 30 March 2013: [http://www.diw.de/documents/publikationen/73/diw\\_01.c.353955.de/diw\\_sp0280.pdf](http://www.diw.de/documents/publikationen/73/diw_01.c.353955.de/diw_sp0280.pdf)

<sup>56</sup> OECD (2011a).

<sup>57</sup> Peichl, Pestel and Schneider (2010).

<sup>58</sup> Lelkes, O., and Zólyomi, E. (2008), *Poverty Across Europe: The Latest Evidence Using the EU-SILC Survey*, European Centre Policy Brief, November 2008. Vienna: European Centre for Social Welfare Policy and Research.

<sup>59</sup> Fagan, C., Urwin, P., and Melling, K. (2006), *Gender inequalities in the risks of poverty and social exclusion for disadvantaged groups in thirty European countries*, Expert Group on Gender, Social Inclusion and Employment report, Luxembourg: Office for Official Publications of the European Communities.

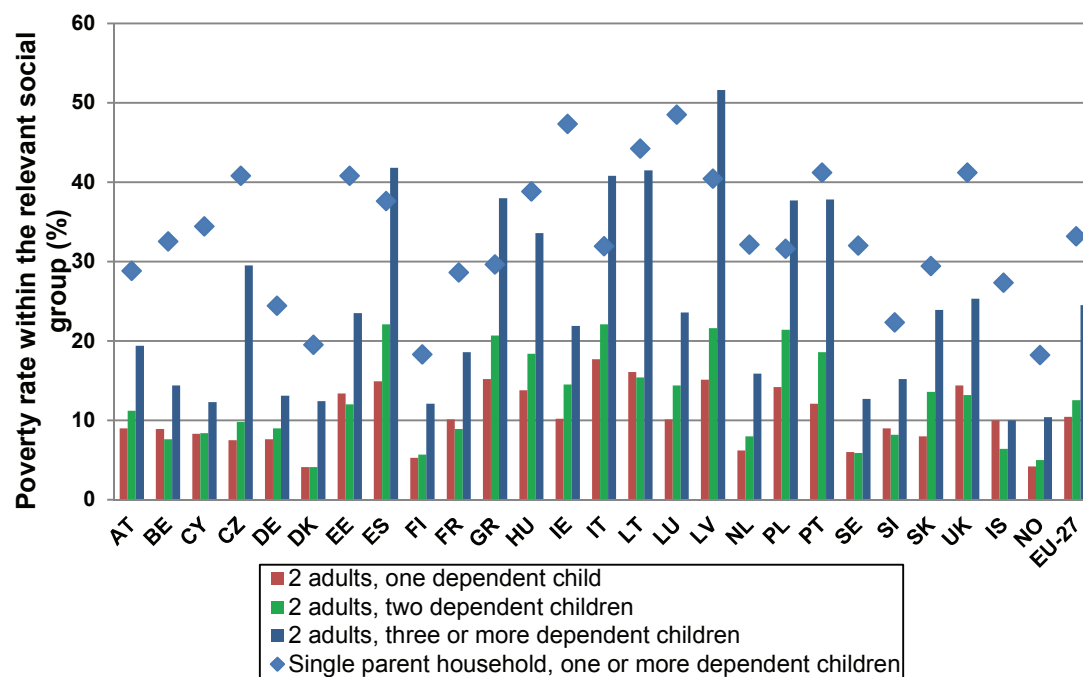
<sup>60</sup> Lelkes, O., Medgyesi, M., and Tóth, I.G. (2009), 'The Factors Affecting the Risk of Poverty and Inequalities in Income Distribution', in Ward, T., Lelkes, O., Sutherland, H., and Tóth, I.G. (eds.), *European Inequalities: Social Inclusion and Income Distribution in the European Union*, Társi: Budapest, pp.45–69.

<sup>61</sup> Jäntti, M., and Bradbury, B. (1999), *Child poverty across industrialized nations*, Innocenti Occasional Papers, Economic and Social Policy Series, No. 71, Florence: UNICEF. As of 30 March 2013: <http://smtp.lisproject.org/wps/wps/205.pdf>

<sup>62</sup> OECD (2012).

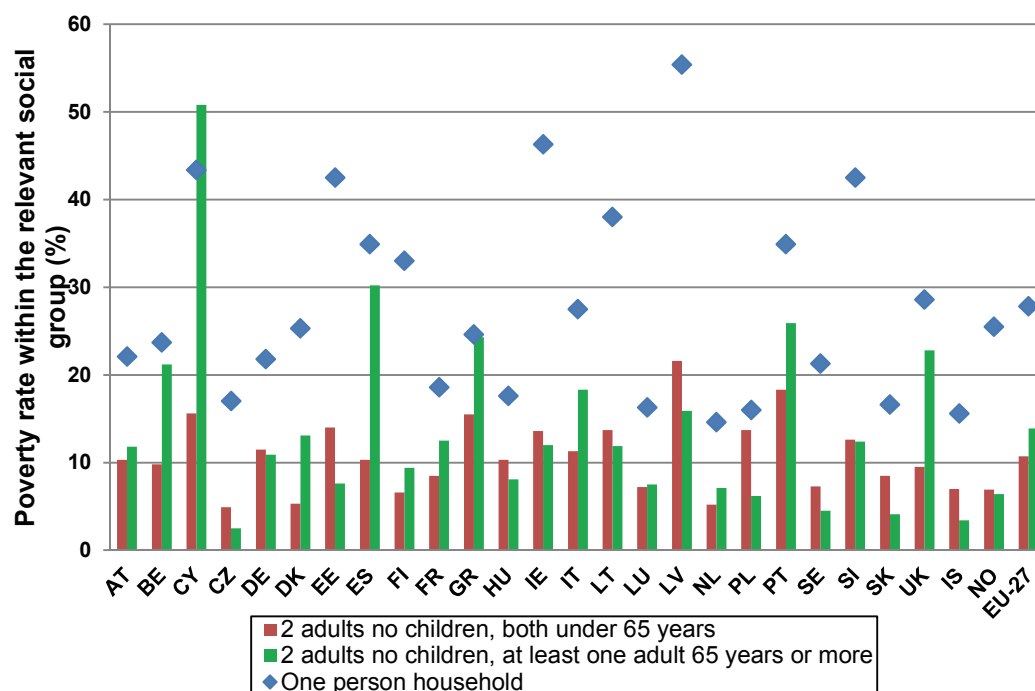
On the other hand, Figure 3a shows that poverty risks increase with the number of children. The poverty rate for families with three or more dependent children is double that of families with only two dependent children. This is due mostly to the fact that the share of income available to support each family member is reduced. As family structures continue to evolve in Europe and the number of ‘recomposed’ families comprising children from former relationships rises, it may be that the proportion of families with dependent children facing higher poverty risks will increase.

Figure 3a: Risk of poverty by household type, for households with children, 2006



SOURCE: Lelkes and Zólyomi (2008); European Commission; European Social Situation Observatory.

Figure 3b: Risk of poverty by household type, for households without children, 2006



SOURCE: Lelkes and Zólyomi (2008); European Commission; European Social Situation Observatory.

Figures 3a and 3b show that poverty risks for single-adult households are significantly higher across the EU-27, whether the household includes children or not, compared to two-adult households with or without children, which face lower overall risks of poverty. The share of people living in single households has grown in OECD and EU countries, thus raising the question of growing poverty risks for larger parts of the population.<sup>63</sup> In the EU-27, the share of single-person households went from 21 percent in 1980 to 28 percent in 2005, owing partly to ageing.<sup>64</sup> The average household size has been declining slowly in the EU-27 from 2.5 in 2005 to 2.4 in 2010, and the elderly are over-represented in the share of single-adult households.<sup>65</sup> The proportion of single-parent families, which face higher poverty risks, has remained stable in the EU-27 over past years. Overall, the growing share of smaller households is likely to increase earnings inequality given the characteristics of individuals living alone – the elderly or migrants – and could lead to a higher number of families facing risks of poverty.<sup>66</sup>

It is difficult to estimate how household size will impact inequality, partly since little research has been conducted on future trends.<sup>67</sup> Yet if the trend towards single-adult households continues to develop, owing notably to an increase in the number of elderly Europeans (especially widowers) living alone,

<sup>63</sup> UNECE (2012), *One person household by Age, Sex, Measurement, Country and Year*, United Nations Economic Commission for Europe Statistical Database. As of August 2012:

[http://w3.unece.org/pxweb/dialog/varval.asp?ma=09\\_GEFHOnePerHous\\_r&path=../database/STAT/30-GE/02-Families\\_households/&lang=1&ti=One+person+household+by+age+and+sex](http://w3.unece.org/pxweb/dialog/varval.asp?ma=09_GEFHOnePerHous_r&path=../database/STAT/30-GE/02-Families_households/&lang=1&ti=One+person+household+by+age+and+sex)

<sup>64</sup> Van Nimwegen and Van der Erf (2010).

<sup>65</sup> Eurostat (2012b), *Average household size (Source: SILC)*, Eurostat website, code ilc\_lvph01. As of 30 March 2013:

[http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=ilc\\_lvph01&lang=en](http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=ilc_lvph01&lang=en)

<sup>66</sup> OECD (2012).

<sup>67</sup> Ahlo, J., and Keilman, N. (2010), 'On future household structure,' *Journal of the Royal Statistical Society* 173.1: pp.117–143.

inequality is likely to rise along with poverty in the Europe of 2020–2030. The OECD projects that by 2030 in several Western European countries the number of single-adult households will increase by between 17 percent and 75 percent (in Germany and France respectively), while the number of childless couples (who are usually wealthier) and single-parent families (which face higher risks of poverty) are also set to increase.<sup>68</sup>

Income inequality may be further stretched in Europe over the coming years owing to an increase in the wealth of two-adult, highly educated households that are well off through increasing assortative mating, or ‘marital homogamy’, whereby high earners marry individuals within the same income bracket, or whereby individuals increasingly tend to marry equally highly educated partners, especially in Western Europe.<sup>69,70</sup> Evidence suggests that the husband’s earnings remain one of the main drivers of income inequality.<sup>71</sup> Still, women are increasingly qualified: the share of women among tertiary students increased from 53.5 percent in 2000 to 55.4 percent in 2010, and in 2006, 123 women were enrolled in higher education for every 100 men.<sup>72,73</sup> In nearly all EU-27 Member States, men are more educated than women in cohorts born before 1960; the trend has reversed in cohorts born after 1960 and currently a gender gap in education is growing, whereby men’s education rates are lower than women’s. This has pushed women’s employment rate up, and a dual-earner model has spread, whereby women are becoming breadwinners instead of caregivers, which means wives’ earnings increasingly determine a family’s living standards.

Increasing female earning potential and education levels increase the likelihood of assortative mating. This impacts on income inequality, as wealth is increasingly concentrated among highly educated dual-earner couples.<sup>74</sup> About 40 percent of working couples in OECD countries feature partners whose incomes hover around similar earning deciles, compared to 33 percent two decades ago.<sup>75</sup> By increasing the wealth of higher-income households, this trend fosters growing inequality in earnings, although the magnitude of its effect is debated.<sup>76,77,78</sup>

The effect of women’s earnings on income inequality remains largely unexplored, and the evidence is mixed depending on the measures used. In theory, earnings inequality could increase as a result of higher female employment rates, especially among households where the high earnings of spouses are correlated. Yet if wives’ earnings are concentrated in households that would otherwise have low earnings, inequality

<sup>68</sup> OECD (2012).

<sup>69</sup> OECD (2011a).

<sup>70</sup> Blossfeld, H.P., and Timm, A. (2003), ‘Assortative Mating In Cross-National Comparison: A Summary Of Results And Conclusions’, in Blossfeld, H.P., and Timm, A. (eds.), *Who Marries Whom? Educational Systems as Marriage Markets in Modern Societies*, Dordrecht: Kluwer Academic Publishers.

<sup>71</sup> Reed, D., and Cancian, M. (2001), ‘Sources of Inequality: Measuring the Contributions of Income Sources to Rising Family Income Inequality’, *Review of Income and Wealth* 47.3: pp.321–333.

<sup>72</sup> Eurostat (2012c), *Share of women among tertiary students Total – science, mathematics and computing – engineering, manufacture and construction (%)*, Eurostat website, code tps00063. As of 30 March 2013:

<http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tps00063>

<sup>73</sup> EACEA (2009), *Key Data on Education in Europe 2009*, P9 Eurydice, Brussels: Education, Audiovisual and Culture Executive Agency.

<sup>74</sup> Blossfeld and Timm (2003).

<sup>75</sup> OECD (2011a).

<sup>76</sup> Jäntti (1997).

<sup>77</sup> OECD (2011a).

<sup>78</sup> Schwartz, C.R. (2010), ‘Earnings Inequality and the Changing Association between Spouses’ Earnings’, *American Journal of Sociology* 115.5: pp.1524–1557.



could be reduced.<sup>79</sup> In the past, researchers have argued that the effect of women's employment on income inequality was negative; in contrast, more comprehensive recent data has shown that women's employment tends to have an equalizing effect on income distribution as an inverse relationship between female unemployment and income inequality in OECD countries has emerged.<sup>80,81,82,83</sup>

Another way in which two-adult households may become wealthier is through the increased enrolment in education, higher overall educational attainment and participation in the labour market of women, which has affected demographic behaviour and led to greater birth postponement (the tempo effect) as more-educated individuals tend to delay childbearing, notably to seek career opportunities.<sup>84,85,86,87</sup> The mean age of couples at the birth of the first child has risen by about two years in several European states over the past 30 years, while the gap between desired and actual fertility at specific ages has also increased.<sup>88,89,90</sup> The trend to postpone marriage (and potentially childbearing) is likely to continue over the coming years.<sup>91</sup> Moreover, rising education levels, particularly among women, are likely to continue influencing delayed family formation and entry in the labour market, and potentially contribute to growing childlessness.<sup>92</sup>

Voluntary childlessness is on the rise in Europe. Childless couples face lower poverty risks and are better off financially, owing partly to the absence of dependent children in the household. The share of households without dependent children in the EU-27 has risen to 49.5 percent in 2010, up from 47.7 percent in 2005, while in 2010, 27 percent of women aged 33–37 were still childless.<sup>93,94,95</sup> Evidence on

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<sup>79</sup> Amin, S., and DaVanzo, J. (2002), *The Impact of Wives' Earnings on Earnings Inequality among Married-Couple Households in Malaysia*, Santa Monica, Calif.: RAND Corporation, DRU-2881-WFHF. As of 30 March 2013: <http://www.rand.org/pubs/drafts/DRU2881>

<sup>80</sup> EC (2012b).

<sup>81</sup> Cancian, M., and Reed, D. (1998), 'Assessing the Effects of Wives' Earnings on Family Income Inequality', *The Review of Economics and Statistics* 80.1: pp.73–79.

<sup>82</sup> Cancian, M., and Reed, D. (1999), 'The Impact of Wives' Earnings on Income Inequality: Issues and Estimates', *Demography* 36.2: pp.173–184.

<sup>83</sup> Harkness (2010).

<sup>84</sup> Sobotka, T. (2004), *Postponement of Childbearing and Low Fertility in Europe*, doctoral thesis, Dutch University Press: The Netherlands.

<sup>85</sup> Lappegård, T., and Rønsen, M. (2005), 'The Multifaceted Impact of Education on Entry into Motherhood', *European Journal of Population* 21.1: pp.31–49.

<sup>86</sup> Van Bavel, J. (2010), 'Choice of study discipline and the postponement of motherhood in Europe: the impact of expected earnings, gender composition, and family attitudes', *Demography* 47.2: pp.439–458.

<sup>87</sup> Gustafsson, S., and Worku, S. (2005), 'Assortative Mating by Education and Postponement of Couple Formation and First Birth in Britain and Sweden', *Review of Economics of the Household* 3: pp.91–113.

<sup>88</sup> Van Bavel, J. (2011), *Implications of the shifting gender balance in education for reproduction in Europe: Speculations for a new research programme*, Wittgenstein Centre for Demography and Global Human Capital, International Conference: Implications of the shifting gender balance in education for reproduction in Europe, 30th November – 1st December 2011. As of 30 March 2013: <http://www.oew.ac.at/vid/edugloft/download/S5-Van%20Bavel.pdf>

<sup>89</sup> Van Bavel (2010).

<sup>90</sup> Testa, M.R. (2012), *Family Sizes in Europe: Evidence from the 2011 Eurobarometer Survey*, Wittgenstein Centre, Vienna: Vienna Institute of Demography of the Austrian Academy of Sciences.

<sup>91</sup> Billari (2005).

<sup>92</sup> Rubery, J., Smith, M., and Fagan, C. (1999), *Women's Employment in Europe: Trends and Prospects*, New York: Routledge.

<sup>93</sup> European Commission (2010), *Household structure in the EU*, Eurostat Methodologies and Working papers, Luxembourg: Publications Office of the European Union.

<sup>94</sup> Sobotka, T. (2011), *Reproductive Decision-Making in a Macro-Micro Perspective (REPRO) Synthesis and Policy Implications*, Vienna: Vienna Institute of Demography, Austrian Academy of Sciences.

<sup>95</sup> Eurostat (2012d), *Distribution of population by household types in percent - Households without dependent children (Source: SILC)*. Eurostat website, code tesov190. As of 30 March 2013: <http://epp.eurostat.ec.europa.eu/tgm/refreshTableAction.do?tab=table&plugin=1&pcode=tesov190&language=en>

the link between higher education levels and lower fertility for women – and vice versa – is mixed: while this association applies to the UK and in Germany to an extent,<sup>96,97</sup> it is weaker in other European countries such as the Nordic states and France.<sup>98</sup> Although women’s labour force participation and fertility were negatively correlated until the 1980s, the relationship became positive as labour markets and family policies favoured work-life balance and as the perception of women’s participation in the labour market changed.

The rise of dual-earner, professional and highly educated European couples delaying childbearing or living in households without dependent children on the one hand, and of smaller or single-adult households where women are not likely to work (thus facing higher poverty risks) on the other, is likely to ‘stretch’ earnings and income inequalities in the future if current trends continue.

### 3.3. The role of policies for supporting families and fostering work-life balance

Member States have introduced an array of policies in response to the challenges that changing household structure pose for the future of inequality in Europe. Alongside a broader set of socio-economic policies, family-focused policies endeavour to support new parents, offer benefits to large families, improve parental leave entitlements and provide housing subsidies.<sup>99</sup>

Policy interventions designed to encourage family formation and fertility aim to offset the declining dependency ratio between an active workforce and retired pensioners in Europe, and increase fertility in Europe to rebalance the ageing population. Evidence shows that fertility is to an extent linked to the provision of childcare.<sup>100</sup> However, given the complex range of factors that influence family formation decisions, policies designed to facilitate work-life balance and encourage greater fertility have only a limited effect. In order for work-life balance policies to be more effective, governments have to change individual attitudes and behaviours.<sup>101</sup> It has been shown that “women-friendly” reconciliation policies play a major role in facilitating work-life balance for female second earners in households, thus increasing household income and countering inequality.<sup>102</sup> On the other hand, pronatalist policies could mitigate delayed childbirth, notably among highly educated couples, thereby slowing the increase in wealth of two-adult households without dependent children. Sweden’s pronatalist policies have contributed to reduced childbirth postponement as related to education levels by facilitating the combination of work and family

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<sup>96</sup> Sigle-Rushton, W. (2008), ‘England and Wales: Stable fertility and pronounced social status differences’, *Demographic Research* 19.15: pp.455–502.

<sup>97</sup> Ekert-Jaffé, O., Joshi, H., Lynch, K., Mougin, R., and Rendall, M. (2002), ‘Fertility, timing of births and socio-economic status in France and Britain’, *Population* 57.3: pp.475–508.

<sup>98</sup> Andersson, G., Rønsen, M., Knudsen, L.B., Lappegård, T., Neyer, G., Skrede, K., Teschner, K., and Vikat, A. (2009), ‘Cohort fertility patterns in the Nordic countries’, *Demographic Research* 20.14: pp.313–352.

<sup>99</sup> Billari (2005).

<sup>100</sup> EC and Eurostat (2011), *Demography report 2010: Older, more numerous and diverse Europeans*, Social Europe, Luxembourg: Publications Office of the European Union.

<sup>101</sup> Hoorens, S., Clift, J., Staetsky, L., Janta, B., Diepeveen, S., Morgan Jones, M., and Grant, J. (2011), *Low fertility in Europe: Is there still reason to worry?*, Santa Monica, Calif.: RAND Corporation, MG-1080-RE. As of 30 March 2013: <http://www.rand.org/pubs/monographs/MG1080>

<sup>102</sup> Kenworthy (2009).

life, notably through paid and protected parental leave, which helps households adapt working arrangements without loss of income, while also increasing life satisfaction.<sup>103,104,105</sup>

The growing participation of women in the labour market raises certain questions, about the quality of employment and working conditions as the EU has sought to develop a gender equality agenda in the face of the growing number of women leaving and re-entering the labour market. Gender pay gaps remain a stubborn challenge, resulting in a range of policy responses designed to tackle wage disparities between men and women, and to favour gender mainstreaming<sup>106</sup>:

- Active labour market policies working notably through public employment services, which seek to improve employment prospects for targeted groups, particularly women.
  - Pay and career policies that may help reduce the gender gap in wages across EU Member States.
  - Reconciliation policies to facilitate work-life balance, notably for women to balance their career and family commitments while not compromising their career prospects.
  - Governments may set up 'flexicurity' policies designed to enable flexibility in the workplace while guaranteeing job security; such policies are especially relevant for women and new parents owing to childcare duties.

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<sup>103</sup> Gustafsson and Worku (2005).

<sup>104</sup> Anxo, D., Fagan, C., Cebrian, I., and Moreno, G. (2007), 'Patterns of labour market integration in Europe – a life course perspective on time policies', *Socio-Economic Review* 5.2: pp.233–260.

<sup>105</sup> Eurofound (2010), *Second European Quality of Life Survey: Family life and work*, Luxembourg: Office for Official Publications of the European Communities. As of 30 March 2013:  
[www.eurofound.europa.eu/pubdocs/2010/02/en/1/EF1002EN.pdf](http://www.eurofound.europa.eu/pubdocs/2010/02/en/1/EF1002EN.pdf)

<sup>106</sup> Plantenga, J., Remery, C., and Rubery, J. (2008), *Gender mainstreaming of employment policies: A comparative review of 30 European countries*, Group of experts on Gender, Social Inclusion and Employment report, Luxembourg: Office for Official Publications of the European Communities.

## 4. Education has a variable contribution to inequality

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### 4.1. A growing share of the European population is educated to higher levels

The number of Europeans in the EU who are enrolled in tertiary education (as a proportion of total education enrolments) went from 15.6 percent in 2002 to 17.4 percent in 2006.<sup>107</sup> Educational attainment has a significant impact on wage dispersion and employment rates.<sup>108</sup> According to findings from the Social Situation Observatory, education levels of the household head account for income inequality more than some other factors, although there is variation among European states. The study reports that in proportionate terms, the variable accounts for as much as 19 percent of overall inequality in income in Portugal, compared to only 3 percent in Sweden (see Figure 1). However, its effect has increased in magnitude between 2004 and 2008 in most EU-27 states.<sup>109</sup>

For instance, the supply of highly skilled women in Europe will continue to grow over the coming decades, notably thanks to the expansion of higher education, which is forecast to continue. At the same time, while some projections estimate that the positive trend in female labour supply will reverse between 2025 and 2050,<sup>110</sup> the female employment rate will increase from 55 percent in 2004 to about 65 percent by 2025, partly due to higher educational attainment and changing sociocultural perceptions of women's participation in the labour market.<sup>111</sup> As the previous section spells out, this trend may impact childbearing, household structure and the distribution of earnings.

Life expectancy is associated with educational attainment. In Europe, highly educated individuals tend to live longer, with significant variation across European states: whereas in 2008, the life expectancy of a highly educated Czech man at age 30 is likely to be 13 years above that of a man with low education levels, the life expectancy of a highly educated 30 year old Maltese woman will only be 1.6 years above the life expectancy of a Maltese woman of the same age with a low education level.<sup>112</sup> Longer life expectancy for highly educated individuals will also impact on the distribution of wealth in Europe.

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<sup>107</sup> EACEA (2009).

<sup>108</sup> OECD (2011a).

<sup>109</sup> Social Situation Observatory (2010).

<sup>110</sup> Economic Policy Committee and DG ECFIN (2006).

<sup>111</sup> Kotowska (2012).

<sup>112</sup> EC and Eurostat (2011).

## 4.2. Demand for highly skilled individuals is set to rise

Changes in education rates may impact inequality in two ways. Increased demand for highly qualified individuals could mean that poorly qualified individuals face higher poverty risks. However, growing demand for better qualified individuals should foster higher overall wages, and could contribute to a decline in the share of income inequality accounted for by education levels.

By 2050, the proportion of men and women aged 20–64 with high qualifications<sup>113</sup> will grow (by up to 10 percent for women), while the proportion of men and women aged 20–64 with low qualifications is set to decline (see Figure 4). Eurostat data on the population at risk of poverty (but not severely materially deprived and not living in a household with low work intensity) shows that the proportion of the population at risk of poverty decreases as education levels rise, from 13.8 percent for individuals educated to primary school level (ISCED 0–2) to 4.8 percent for highly educated individuals – ISCED 5–6.<sup>114</sup> Human capital theory posits that individuals with higher levels of education are more productive and therefore enjoy higher wages. It has been argued that technological change may foster income inequality since it increases the advantage of highly educated workers compared to those with lower education levels, who may therefore face higher risks of poverty in the future.<sup>115,116</sup>

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<sup>113</sup> In Figures 4 and 5, qualifications thresholds are derived from International Standard Classification of Education (ISCED) levels defined in UNESCO (1997), but they are defined differently. Please note that in Figure 4, 'No qualification' designates individuals who have not received any education, 'Low qualification' encompasses individuals educated to ISCED levels 0–1 (pre-primary and primary education or first stage of basic education), 'Medium qualification' designates individuals educated to ISCED levels 2–4 (lower and upper secondary and post-secondary non-tertiary education) whilst the 'High qualification' category refers to individuals educated to ISCED levels 5–6 (first and second stages of tertiary education). By contrast, in Figure 5, 'Low qualification' refers to individuals having completed primary education (ISCED 0–3c short), 'Medium qualification' encompass individuals educated to the second cycle of secondary education (ISCED 3–4 other than 3c short) and 'High qualification' designates individuals educated to tertiary levels (ISCED 5–6).

<sup>114</sup> Eurostat (2012e), *Intersections of Europe 2020 Poverty Target Indicators by education level (population aged 18 and over)*, Eurostat website, code ilc\_pees05. As of 30 March 2013:

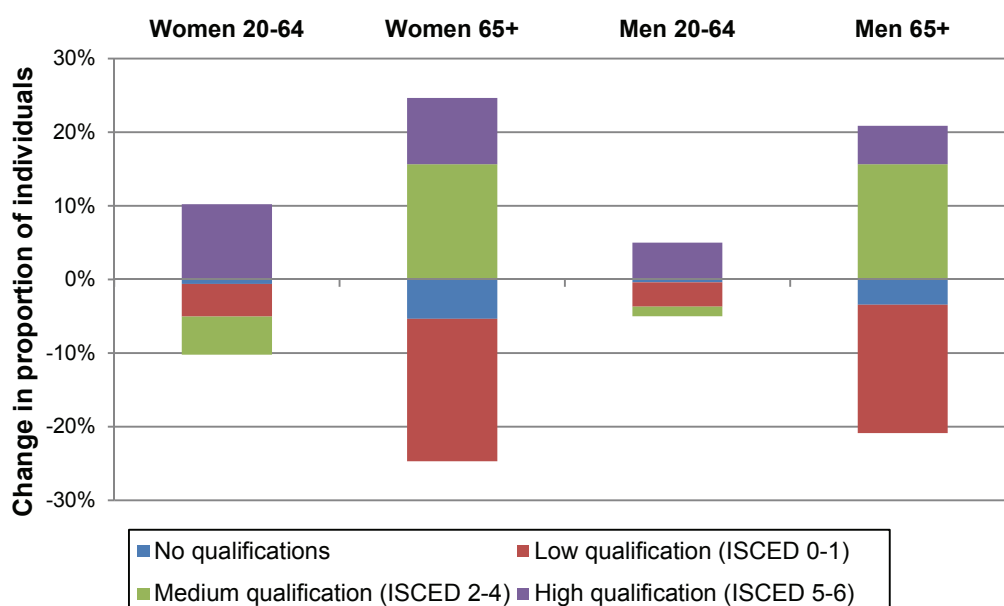
[http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=ilc\\_pees05&lang=en](http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=ilc_pees05&lang=en)

<sup>115</sup> Lelkes, Medgyesi and Tóth (2009).

<sup>116</sup> Goldin, C., and Katz, L.F. (2009), *The Race between Education and Technology: The Evolution of U.S. Educational Wage Differentials, 1890 to 2005*, revised version of NBER Working Paper No. 12984. As of 30 March 2013:

[http://scholar.harvard.edu/lkatz/files/the\\_race\\_between\\_education\\_and\\_technology\\_the\\_evolution\\_of\\_u.s.\\_educational\\_wage\\_differentials\\_1890\\_to\\_2005.pdf](http://scholar.harvard.edu/lkatz/files/the_race_between_education_and_technology_the_evolution_of_u.s._educational_wage_differentials_1890_to_2005.pdf)

Figure 4: Projection of the change in the proportion of men and women in specific demographic categories and at a given qualification level from 2010 to 2030 in the EU-27 (historical trends scenario)



SOURCE: IIASA and VID (2010); KC et al. (2010); UNESCO 1997; author's estimations.

OECD countries in particular have seen the demand for highly skilled workers increase at the expense of low-skilled workers due to globalisation and the growing integration of global markets, as well as technical progress.<sup>117</sup> Demand for low-skilled labour may also be reduced by international competition, which is likely to favour the growth of ICT.<sup>118,119</sup> Declining supply and demand for low-skilled labour (see Figure 5) may trigger a rise in wages. However, the interplay between household structure and other demographic factors may continue to exist if high education levels remain correlated with higher childlessness. This would mean increasingly educated Europeans would have fewer children, although recent evidence has shown a change in the negative relationship between fertility and development.<sup>120</sup>

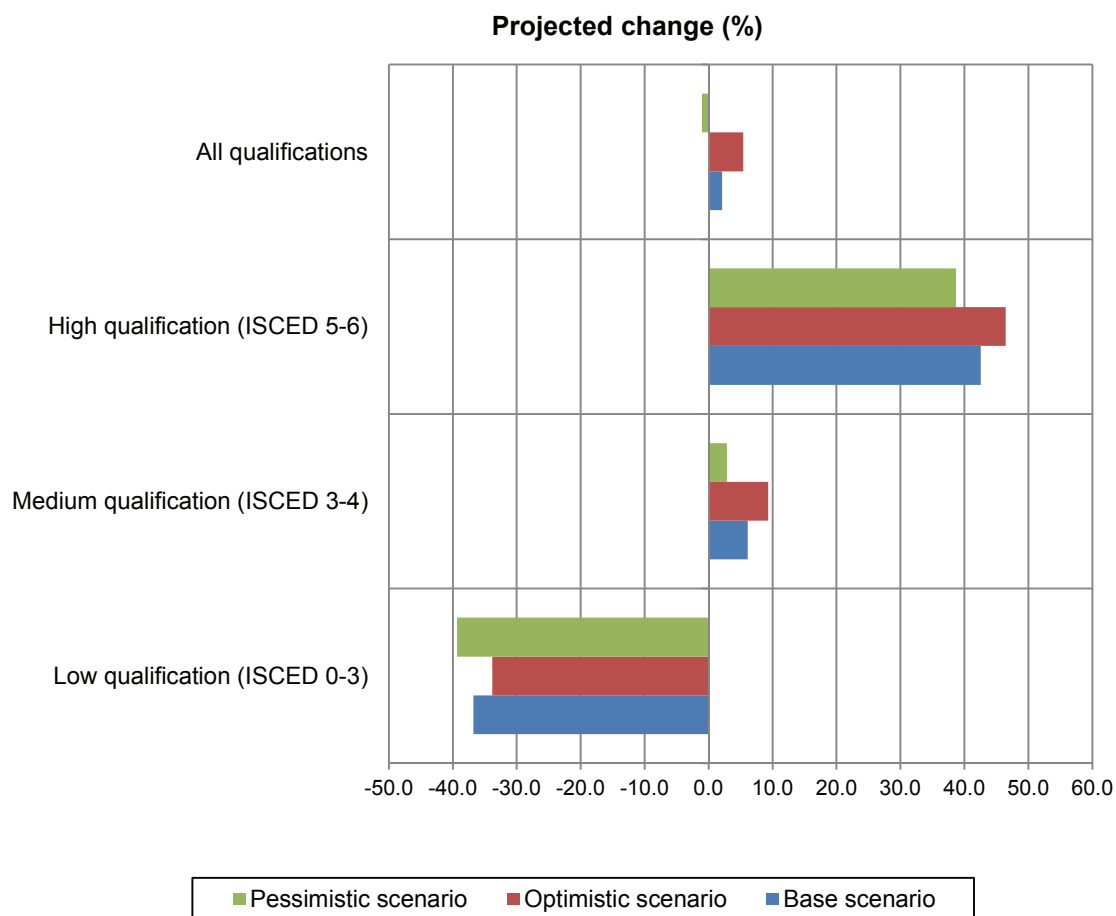
<sup>117</sup> OECD (2011b).

<sup>118</sup> EC (2012b).

<sup>119</sup> Blau, F.D., and Kahn, L.M. (2009), 'Inequality and Earnings Distribution', in Salverda, W., Nolvan, B., and Smeeding, T.M. (eds.), *The Oxford Handbook of Economic Inequality*, Oxford, New York: Oxford University Press.

<sup>120</sup> Myrskylä, M., Kohler, H.P., and Billari, F.C. (2009), 'Advances in development reverse fertility declines', *Nature* 460: pp.741-743.

**Figure 5: Skills supply projections for the EU-25 labour force aged 15 and over between 2007 and 2020 (comparison across scenarios, change in percentage)**



SOURCE: Cedefop (2009); IER estimates based on CE E3ME model.

Better-educated individuals are more likely to be in higher demand in the labour market in the future.<sup>121,122</sup> Cedefop<sup>123</sup> estimates that the demand for low-skilled individuals is set to decline by 28.5 percent between 2010 and 2020 in the EU-27+<sup>124</sup> labour force, while demand for highly educated individuals with tertiary education levels will increase by 27 percent in that period. The growth of the services sector will play a role in this shift in demand: the United States Bureau of Labor Statistics' projections<sup>125</sup> foresee that most of the 15 million jobs created by the year 2018 will be in the services sector.

<sup>121</sup> OECD (2012).

<sup>122</sup> Cedefop (2012), *Skills forecast: Labour force by qualifications (in 000s), EU27+*, European Centre for the Development of Vocational Training (Cedefop) website. As of 30 March 2013: <http://www.cedefop.europa.eu/EN/about-cedefop/projects/forecasting-skill-demand-and-supply/skills-forecasts/main-results.aspx?CountryID=31&case=LFBQ>

<sup>123</sup> Cedefop (2012).

<sup>124</sup> The EU-27+ designates the EU-27 Member States plus Iceland, Liechtenstein and Norway.

<sup>125</sup> U.S. Bureau of Labor Statistics (2009), 'Employment outlook: 2008–18', *Monthly Labor Review* 132.11. As of 30 March 2013: <http://www.bls.gov/opub/mlr/2009/11/mlr200911.pdf>

### 4.3. Policy efforts to tackle inequality in Member States

To counter the rise of poverty based on education levels, a number of programmes have been set up by the EU and by Member States. The range of policies to combat educational inequality and its consequences include initiatives to lower the risk of young people not being in education, employment or training (known as NEETs), as well as programmes for the up-skilling of European youth. Although policies cannot directly target inequality as a result of discrepancies in educational attainment (which are often linked to social background), programmes such as Erasmus were set up to equip young Europeans with the skills to succeed and better integrate in the labour market.<sup>126</sup> An important policy challenge is to take within-group dispersion into account (where individuals having received the same education experience different outcomes once on the labour market, which translates into wage differentials).<sup>127</sup>

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<sup>126</sup> NESSE (2012), *Mind the Gap: Education inequality across EU regions*, independent report authored for the European Commission by the NESSE network of experts. As of 30 March 2013: [http://ec.europa.eu/education/news/doc/nesse/report\\_en.pdf](http://ec.europa.eu/education/news/doc/nesse/report_en.pdf)

<sup>127</sup> DG RTD (2006), *Education and Wage Inequality in Europe (EDWIN): Final report*, EU research on social sciences and humanities, HPSE-CT-2002-00108. As of 30 March 2013: <http://cordis.europa.eu/documents/documentlibrary/100124241EN6.pdf>



## 5. Is migration a potential driver of future inequality?

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### 5.1. The unfavourable situation of migrants

Migration inflows as well as the age structure and fertility of the migrant population may play a role in the future of income inequality in the Europe of 2020–2030. Migrants tend to be at higher risk of poverty, owing to their over-representation in manual, low-skilled occupations and lower employment rates, and tend to live in single households more often than native-born citizens.<sup>128,129</sup> Although migration terminology is complex and debated,<sup>130</sup> here migrants are defined as including people with a foreign background, i.e., those whose parents were born outside the country. First-generation children of migrants are people born abroad of two migrant parents, while second-generation children are born in the host country, of one or two migrant parents.

The wide variety of drivers underpinning migration, missing data and the different definitions of migrant types between Member States make it difficult to obtain reliable statistics on migrants.<sup>131</sup> In addition, and more importantly, migrants form a very heterogeneous group and their chances of integration depend strongly on their origin; a reliable analysis focusing on small groups would have to be carried out. In 2009, about 32 million individuals with citizenship of a country different from their country of residence were living in the territory of the EU-27 Member States.<sup>132</sup> According to EU Labour Force Survey (LFS) 2008 data, about 12.7 percent of EU residents aged 15–74 in 2008 were born abroad or had at least one parent born abroad.<sup>133</sup> In 2010 in the EU-27, there were 47.3 million foreign-born residents (both born in other EU Member States and born in a non-EU country), which corresponded to 9.4 percent of the

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<sup>128</sup> Social Situation Observatory (2010).

<sup>129</sup> Lelkes, O., Platt, L., and Ward, T. (2009), 'Vulnerable Groups: The Situation of People with Migrant Backgrounds', in Lelkes, O., Sutherland, H., and Tóth, I.G. (eds.), *European Inequalities: Social Inclusion and Income Distribution in the European Union*, Tárki: Budapest, pp.69–101.

<sup>130</sup> Rumbaut, R.G. (2004), 'Ages, life Stages, and Generational Cohorts: Decomposing the Immigrant First and Second Generations in the United States', *International Migration Review* 38.3: pp.1160–1205.

<sup>131</sup> Anderson, B., and Blinder, S. (2012), *Who Counts as a Migrant? Definitions and their Consequences*, The Migration Observatory at the University of Oxford. As of 30 March 2013:

<http://www.migrationobservatory.ox.ac.uk/briefings/who-counts-migrant-definitions-and-their-consequences>

<sup>132</sup> EC and Eurostat (2011).

<sup>133</sup> EC and Eurostat (2011).

total population.<sup>134</sup> Estimates based on LFS 2008 data indicate that about 6 million native-born individuals aged 25–54 have one parent born abroad, while 4 million have both parents born abroad.<sup>135</sup>

The mechanisms by which migration may lead to increased inequality are complex. Lower educational attainment of children of migrants may have negative effects on their performance in the labour market, but evidence about their social mobility is mixed. The education performance of children of migrants in EU countries was lower than that of native-born children in 2003, irrespective of the educational attainment levels of parents, which leads to unfavourable labour market outcomes and increased risks of poverty.<sup>136,137</sup> Migrants are affected by high levels of unemployment – although Figure 6 suggests that as migrants spend more time in their host country, they become gradually better integrated – and lower levels of income. This is especially true for first-generation migrants, and although the difference is smaller for second-generation individuals it remains large, especially in specific EU-27 Member States. Although the employment rate of foreign-born men within the EU-27 in 2009 was higher than that of native-born men (especially in southern Europe), except at comparable ages, non-EU migrants face higher unemployment rates than natives in most European Member States.<sup>138</sup> The unemployment rate of second-generation migrants aged 25–54 was 4 percent higher than those with a native background (9 percent) according to Eurostat (2011). In 2006 in the EU-15, 18 percent of the children of parents born outside the EU lived in workless households, compared to only 7 percent of children of native-born parents. Moreover, their median disposable income was 17 percent lower than that of native-born parents – assuming children have an equal share of the households they live in.<sup>139</sup>

Evidence on the social mobility of second-generation migrants is scarce, yet suggests improvements compared to the first generation, notably in terms of subjective perceived achievement, although the achievements of migrants' children do not yet equal those of native-born children.<sup>140,141</sup> Long-term migrants seem to integrate better in terms of educational outcomes, and their unemployment rates have converged towards those of native-born parents, although the unemployment rate of the children of migrants (12 percent for the 15–54 age group in the EU-27 in 2008) is almost double that of individuals with native-born parents.<sup>142,143</sup> The employment rate of second-generation migrants whose parents come

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<sup>134</sup> Vasileva, K. (2011), *6.5% of the EU population are foreigners and 9.4% are born abroad*, Eurostat Statistics in focus, 34/2011. As of 30 March 2013:

[http://epp.eurostat.ec.europa.eu/cache/ITY\\_OFFPUB/KS-SF-11-034/EN/KS-SF-11-034-EN.PDF](http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-SF-11-034/EN/KS-SF-11-034-EN.PDF)

<sup>135</sup> Eurostat (2011).

<sup>136</sup> Lemaitre, G. (2010), *Educational outcomes of the children of immigrants: background, results and policy implications*, OECD International Migration Division, 7th May 2010. As of 30 March 2013:

<http://www.socialsituation.eu/workshop-presentations/migrants-may-2010/Lemaitre.ppt>

<sup>137</sup> Lelkes, O., (2006), 'Why are the Poor Poor?' in European Observatory on the Social Situation, European Commission, *Final Report of the Network on Social Inclusion and Income Distribution*, DG Employment, Social Affairs and Equal Opportunities. As of August 2012:

[http://ec.europa.eu/employment\\_social/social\\_situation/docs/sso2005\\_social\\_inclusion\\_report.pdf](http://ec.europa.eu/employment_social/social_situation/docs/sso2005_social_inclusion_report.pdf)

<sup>138</sup> DG EMPL (2011), *The integration of migrants and its effects on the labour market*. As of 30 March 2013:

<http://www.europarl.europa.eu/document/activities/cont/201108/20110829ATT25420/20110829ATT25420EN.pdf>

<sup>139</sup> Lelkes, Platt and Ward (2009).

<sup>140</sup> Attias-Donfut, C. (2010), *Immigrants and their children: social mobility across generations*, Social Situation Observatory research seminar, 7 May 2010, Brussels. As of 30 March 2013:

<http://www.socialsituation.eu/workshop-presentations/migrants-may-2010/Attias%20The%20social%20destiny%20of%20children%20of%20migrants.pdf>

<sup>141</sup> Papademetriou, D.G., Somerville, W., and Sumption, M. (2009), *The Social Mobility of Immigrants and Their Children*, Migration Policy Institute. As of 30 March 2013: <http://www.migrationpolicy.org/pubs/socialmobility2010.pdf>

<sup>142</sup> Eurostat (2011).

from outside the EU-27 is lower than that of second-generation migrants with parents born in the EU-27,<sup>144</sup> and migrants remain over-represented in lower-skilled occupations.

Migration is unlikely to offset overall declining fertility rates, which could have helped maintain the old-age dependency ratio. However, given that migrants emigrate at a young age, future migration is likely to positively affect the size of the labour force.<sup>145</sup> In the EU, about 80 percent of overall population growth is due to migration, and it is suggested that a population surplus exists thanks to migration.<sup>146,147</sup> The extent to which migrant fertility has contributed to Europe's recent fertility increase is debated, although studies have found that while migrant women initially retain higher fertility levels than native-born women, the overall effect of migrant fertility on a country's fertility rate is small.<sup>148,149</sup> Evidence on the effects of migration on wage structure is mixed: some data suggest that an influx of low-skilled migrants may negatively affect the wages of the low-skilled native population, while several reports find no empirical evidence that immigrant workers have lowered wages in the United States, or in Europe after the enlargement in 2004 and the influx of workers from EU-12 countries.<sup>150,151,152</sup>

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<sup>143</sup> EC and Eurostat (2012).

<sup>144</sup> EC and Eurostat (2012).

<sup>145</sup> Sobotka, T. (2008), 'Overview Chapter 7: The rising importance of migrants for childbearing in Europe', *Demographic Research* 19.9: pp.225–248. As of 30 March 2013: <http://www.demographic-research.org/Volumes/Vol19/9/19-9.pdf>

<sup>146</sup> Van Nimwegen and Van der Erf (2010).

<sup>147</sup> Philipov, D., and Schuster, J. (2010), *Effect of Migration on Population Size and Age Composition in Europe*, Vienna: Vienna Institute of Demography, Austrian Academy of Sciences.

<sup>148</sup> Myrskylä, M., Kohler, H.P., and Billari, F.C. (2011), *High Development and Fertility: Fertility at Older Reproductive Ages and Gender Equality Explain the Positive Link*, Population Studies Center, University of Pennsylvania, PSC Working Paper Series, PSC 11-06. As of September 2012: [http://repository.upenn.edu/psc\\_working\\_papers/30](http://repository.upenn.edu/psc_working_papers/30)

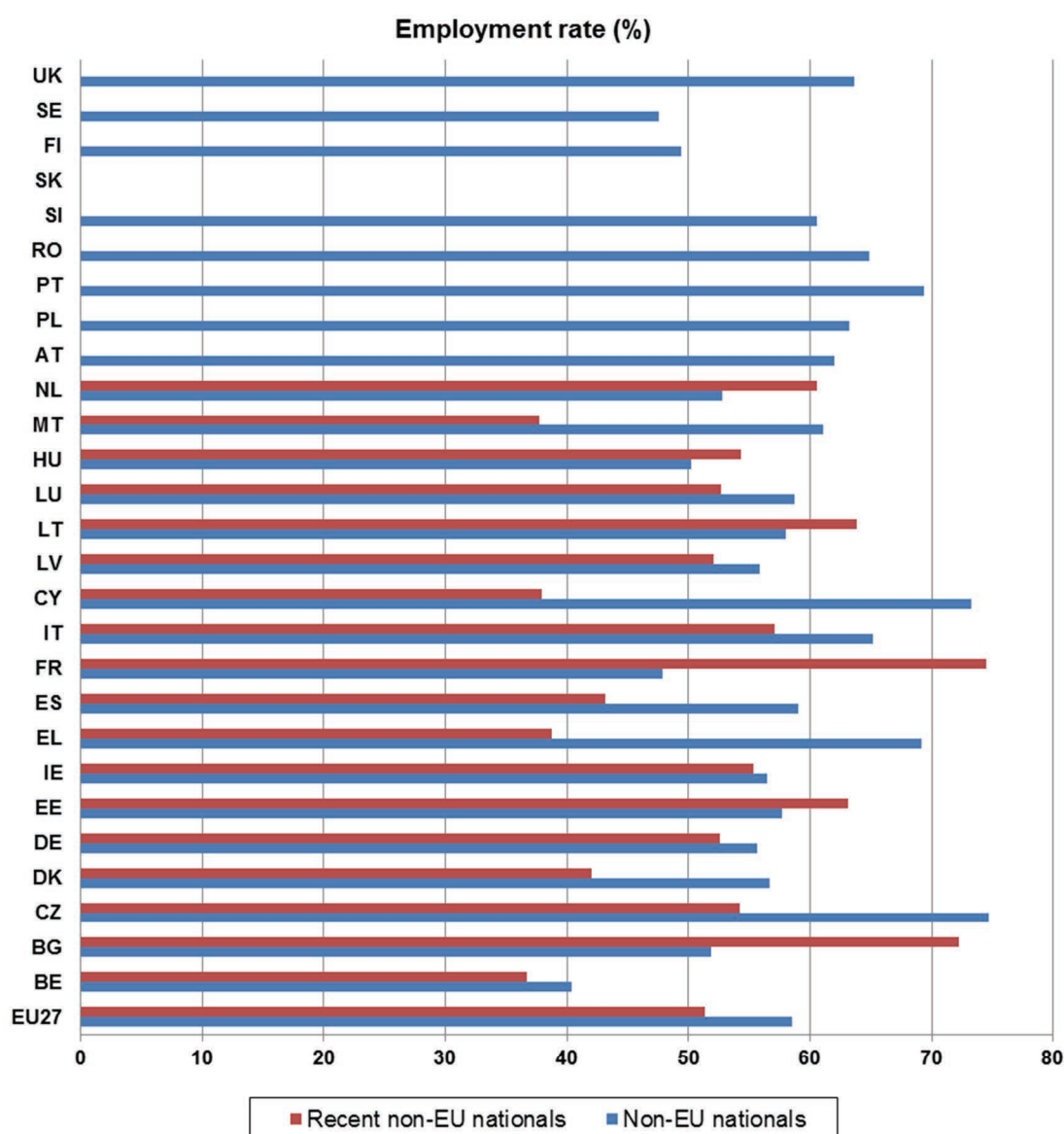
<sup>149</sup> Hoorens et al. (2011).

<sup>150</sup> Blau and Kahn (2009).

<sup>151</sup> DG EMPL (2011).

<sup>152</sup> Ottaviano, G.I.P., and Peri, G. (2006), *Rethinking the Effects of Immigrations on Wages*, National Bureau of Economic Research Working Paper no. 12497. As of 30 March 2013: <http://www.nber.org/papers/w12497>

Figure 6: Employment rate of non-EU nationals and recent non-EU nationals aged 20–64 in 2010



SOURCE: Labour Force Survey (2010), PA1d.O1).

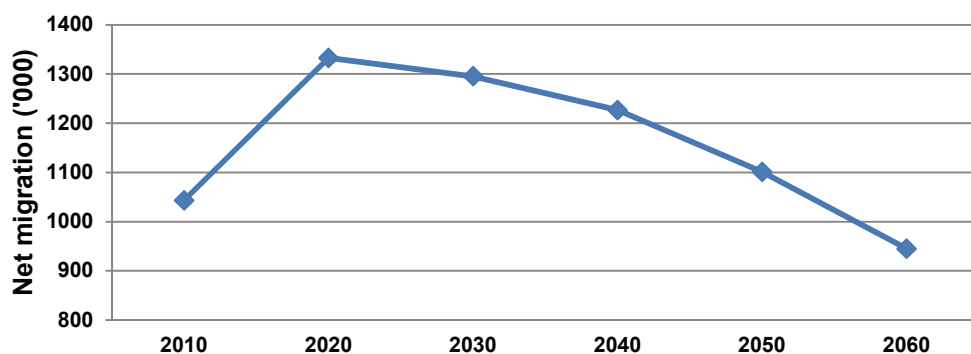
## 5.2. The share of population with a foreign background will continue to grow

Scarcity of reliable data on migration means that projections on migration trends are inexact (see Figure 7). Overall, the share of migrants and individuals from a mixed background is set to rise in the future. It is projected that the share of people with a foreign background (both first- and second-generation migrants) will almost double, increasing by 16 percent to reach 133 million people in 2061, according to conservative estimates, while more optimistic forecasts predict that the figure will reach 174 million.<sup>153</sup> Coleman’s projections for seven European countries indicate that the proportion of foreign-born

<sup>153</sup> Lanzieri, G. (2011), *Fewer, older and multicultural? Projections of the EU populations by foreign/national background*, Eurostat Methodologies and Working Papers series, Luxembourg: Publications Office of the European Union.

individuals will rise to reach between 15 percent and 32 percent of the total population of specific European countries by 2050, with no sign of this trend decreasing over time.<sup>154</sup> This correlates with other projections indicating that the share of people with a foreign background will rise to more than 25 percent by 2051.<sup>155</sup> Moreover, the share of people with a foreign background among children in education and young adults at work will be far higher, reaching 50 percent in 2050 in some Member States. If integration in the labour market remains difficult for this share of the population, it follows that larger proportions of residents in the EU-27 will face risks of poverty. Experts also foresee that the annual net migration inflow is set to go from 1 million individuals (0.2 percent of the EU population) for the EU-27 in 2010 to about 1.3 million migrants around 2020, before declining to around 945,000 people by 2060.<sup>156,157</sup> While projecting migration flows is beset with uncertainty,<sup>158</sup> many of the future Europeans with a foreign background (or their parents) are already in the EU.

Figure 7: Net migration (in thousands) in the EU-27, 2010-2060



SOURCE: DG ECFIN and AWG (2011); Eurostat 2012f.

### 5.3. Integrating migrants to prevent income inequality

Policies available to Member States with regard to immigration fall into two broad categories: the integration of migrants, and their employment and social mobility. Policies vary across Europe owing partly to cultural differences and traditions in dealing with immigration.<sup>159</sup> A core challenge for policies aiming to integrate migrants is to treat all individuals equally, without favouring economic migrants over those migrating for family reasons. Securing the integration of migrant families within the social fabric is

<sup>154</sup> Coleman, D. (2006), 'Immigration and Ethnic Change in Low-Fertility Countries: A Third Demographic Transition', *Population and Development Review* 32.3: pp. 401–446.

<sup>155</sup> Lanzieri, G. (2010), *Fewer, older and multicultural? A projection of the populations of the European Union Member States by foreign/national background*, paper given at the European Population Conference 2010, Vienna, 1–4 September 2010. As of 30 March 2013: <http://epc2010.princeton.edu/papers/100315>

<sup>156</sup> DG ECFIN and AWG (2012).

<sup>157</sup> Eurostat (2012f), *Assumptions – Net migration (total)*, Eurostat website, code proj\_10c2150a. As of 30 March 2013: [http://appsso.eurostat.ec.europa.eu/nui/show.do?wai=true&dataset=proj\\_10c2150a](http://appsso.eurostat.ec.europa.eu/nui/show.do?wai=true&dataset=proj_10c2150a)

<sup>158</sup> Economic Policy Committee and DG ECFIN (2006).

<sup>159</sup> Heckmann, F., and Schnapper, D. (eds.) (2003), *The Integration of Immigrants in European Societies: National Differences and Trends of Convergence*, European Forum for Migration Studies (EFMS), Stuttgart: Lucius & Lucius Verlagsgesellschaft mdH.

important to avoid the spread of educational disadvantage and barriers to entry to the labour market. Reducing discrimination is also a crucial factor that could be embedded legally.

A range of policy interventions is also available to encourage the employment and social mobility of migrants, including introduction programmes, language and vocational skills training and anti-discriminatory measures.<sup>160</sup> Improving the recognition of foreign qualifications could help immigrants to practise their former profession in the host country, instead of having restricted opportunities in lower-skilled jobs. Additional policies focusing on the educational attainment of the children of migrants include setting up educational programmes for immigrants, publicising written information on the school system, and providing interpretation services to facilitate communication between immigrant families and schools. A growing share of socially mobile migrants in the EU could reduce poverty levels and the lack of opportunities linked to the status of migrants in their new countries.

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<sup>160</sup> Rubin, J., Rendall, M.S., Rabinovich, L., Tsang, F., van Oranje-Nassau, C., and Janta, B. (2008), *Migrant women in the European labour force: Current situation and future prospects*, Santa Monica, Calif.: RAND Corporation, TR-591-EC. As of 30 March 2013: [http://www.rand.org/pubs/technical\\_reports/TR591](http://www.rand.org/pubs/technical_reports/TR591)

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