Council of the European Union

Brussels, 9 July 2019
(OR. en)

11082/19
ADD 4

SOC 542
EMPL 415
ECOFIN 701
EDUC 346
JEUN 84
FISC 323

COVER NOTE

From:	Secretary-General of the European Commission, signed by Mr Jordi AYET PUIGARNAU, Director
date of receipt:	4 July 2019
To:	Mr Jeppe TRANHOLM-MIKKELSEN, Secretary-General of the Council of the European Union
No. Cion doc.:	SWD(2019) 294 final PART 5/8
Subject:	COMMISSION STAFF WORKING DOCUMENT Employment and Social Developments in Europe 2019 - Investing in people and social sustainability: short-term costs vs long-term benefits

Delegations will find attached document SWD(2019) 294 final PART 5/8.

Encl.: SWD(2019) 294 final PART 5/8

EUROPEAN
COMMISSION

Brussels, 4.7.2019
SWD(2019) 294 final

PART 5/8

COMMISSION STAFF WORKING DOCUMENT

Employment and Social Developments in Europe 2019

CHAPTER 4

Investing in people and social sustainability: short-term costs vs long-term benefits

1. INTRODUCTION ([1])

The EU and its Member States are among the most equal and inclusive societies in the world and share a strong commitment to the European social model. From a global perspective, European countries rank very high in the fight against poverty, promoting healthy lives, gender equality, decent work and reducing inequalities. ([2]) The European Parliament, the Council and the Commission proclaimed in November 2017 the European Pillar of Social Rights, which sets out twenty principles in the area of equal opportunities and access to the labour market, fair working conditions and social protection and inclusion. The Pillar acts as a compass to address future challenges, reaffirming existing rights and adding new principles. Some of the issues looked at in the present chapter, such as care, housing, education and training, are explicitly addressed under the Pillar.

To ensure high social standards not only now but also for future generations, Europe's welfare systems will need to evolve towards sustainable solutions. While there is much diversity in national systems and policies, all Member States are facing the same challenging megatrends. These include ageing populations, major shifts in the labour market and changing life course and family patterns, as well as interlinked challenges related to climate change and technological transformation.

Population ageing will have a strong economic and budgetary impact. A growing number of elderly people and increases in life expectancy will require growing expenditure on pensions (up to 2040) and health care and long-term care (up to 2070). Despite improvements in employment rates, partly linked to pension reforms, the number of workers in Europe is expected to decrease from 2021 until at least 2070. ([3]) As a result, today's younger generations and future generations will bear a double burden because: 1) throughout their working lives they will pay higher contributions for their social security than today's workers; 2) the same

([1]) This chapter was written by Alessia Fulvimari, Míde Griffin, Simone Rosini and Tim Van Rie, with contributions from Eurofound, the Joint Research Centre units on Fiscal Policy Analysis and Knowledge for Finance, Innovation and Growth, and Maeva Roulette.

([2]) European Commission (2019a).

([3]) European Commission and Economic Policy Committee (Ageing Working Group)(2018).

cohorts will receive, on average, a lower pension than today's pensioners (relative to wages). ([4]) Because of these expected demographic changes, GDP growth will rely on improvements in productivity. ([5]) Social investments to facilitate increased productivity and labour force participation (such as in childcare, skills, long-term care and housing) will prove crucial in ensuring sustained increases in productivity and tax revenues.

Technological change and new forms of work create many new opportunities, but also challenges. A growing number of tasks can be performed using robots or digital technologies. Many workers benefit when repetitive aspects of their jobs are automated, reducing physical strain or allowing them to focus on more rewarding duties. However, for those who mainly perform standardised tasks, technological advances carry a risk of job loss or significant job transformation. Structural changes in the labour market also bring greater diversity in forms of employment. These deviate from the 'standard' open-ended full-time dependent employment for a single employer. Such developments may open new gaps in labour law, in the coverage for certain social risks, or in the financing base of social protection systems. ([6])

Europe's welfare states will need to adjust to changing household patterns. In the past, when the male breadwinner model prevailed, women mainly performed unpaid work, including domestic tasks and care for children and frail relatives. Now that younger generations of European women are increasingly taking up paid work, they generally work more combined paid and unpaid hours than men, even if they are employed in part-time jobs. In addition to gender inequality, this gives rise to work-life balance issues, which social investment policies can help to address.

Moreover, households are increasingly diverse, with growing numbers of single adults and lone parents, and more young people postponing household formation. Living standards have improved steadily in the EU, but young people have benefited less from this than older generations. Poor employment prospects for younger people during and to some extent still after the economic crisis and current housing affordability issues in many European capitals appear to have had a negative impact on their economic independence and capacity to establish independent households, including having children and buying a house. Postponing household formation, homeownership and parenthood may in turn have inter-generationally adverse consequences on fertility rates and therefore also on the sustainability of pension systems. ([7])

Investing in people and social sustainability can help to address these common challenges. Social investment refers to policies designed to strengthen people's skills and capacities and support them to participate fully in employment and social life. Such policies can not only foster individual potential and more inclusive societies but also contribute to an improved fiscal position, through higher productivity, increased employment and a broader tax base. Over the longer term, social investment can improve the demographic balance through increased fertility. These policies can also help to reduce long-term reliance on compensatory social policies, along with reductions in poverty and social exclusion. ([8])

European welfare systems provide ample proof that social investment policies are not just a cost, but can be productive as well. Social investment policies not only promote social rights, but also contribute to economic growth. Key policy fields of social investment include enabling services such as high quality early childhood education and care (ECEC), education and training or active labour market policies and social services. ([9]) In recent years, the European social model has evolved in this regard, steered by initiatives put forward by the European Union for example on work-life balance (Directive on work-life balance for parents and carers) ([10]), the quality of early childhood education and care systems (Council Recommendation on High-Quality Early

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

([5]) European Commission and Economic Policy Committee (Ageing Working Group) 2018:

([6]) European Commission (2018a).

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

([8]) Kvist (2016).

([9]) European Commission (2013).

([10]) European Parliament and the Council reached a provisional agreement on the European Commission's proposal for a new Directive on work-life balance for parents and carers on 24 January 2019. https://ec.europa.eu/social/main.jsp?langId=en&catId=1311&furtherNews=yes&newsId=9285

Childhood Education and Care Systems) ([11]), skills and LifeLong Learning (such as the upskilling pathways recommendation ([12]) and the blueprint for sectoral cooperation on skills) and long-term care (the subject of a forthcoming report) in the overarching framework of the European Pillar of Social Rights.

Investments in people and social sustainability also relate to housing. Affordable, accessible and energy-efficient housing is crucial to enable people to fulfil their potential. Secure housing gives people the confidence to invest in themselves, for example, to choose a new career path in the light of major shifts in the labour market or to start a family. There is also growing attention to the synergies between different policy areas, such as the joint provision of housing and social services. In addition, policy makers and experts in Europe emphasise the complementarities between enabling services and cash benefits (including minimum income). Such benefits provide income security during transitions and may help to avoid scarring effects from job loss or other negative events. ([13])

Social investments in childcare, skills, long-term care and housing are intrinsically interlinked. Combining multiple dimensions of social investments may have a cumulative effect, with the total being greater than its parts (the opposite effect to that of multiple dimensions of deprivation). Furthermore, they are interlinked with other dimensions of sustainability – better-educated citizens contribute not only to economic progress and fiscal stability but may also make better choices regarding environmental sustainability and climate change.

The social investment approach emphasises investment in people, throughout their life course. ([14]) In this context social investment is subject to the so-called 'life course multiplier'. ([15]) Investments at a young age (cognitive development in early childhood) provide a sound basis for investments with higher returns at later stages (further education, labour market participation, LifeLong Learning and active ageing). At young ages, the returns tend to be highest for children from disadvantaged backgrounds, implying that such investments can promote both efficiency and equity. ([16]) From a longer-term perspective, these investments can be transmitted from one generation to the next.

([11]) https://www.consilium.europa.eu/en/meetings/eycs/2019/05/22-23/

([12]) https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ%3AJOC_2016_484_R_0001

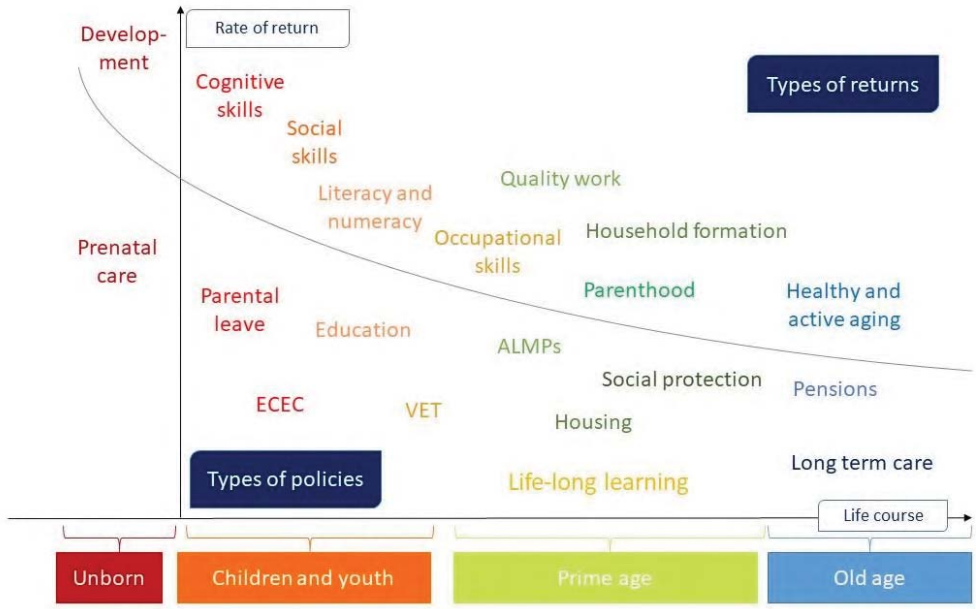
([13]) E.g. Hemerijck (2018) discusses the 'buffer' function of social investment, which secures income protection for individuals and (macro-)economic stabilisation. This complements the 'stock' function (strengthening skills and capacities) and the 'flow' function aiming at efficient labour allocation over the life course.

([14]) European Commission (2013).

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

([16]) Woessmann (2008); Cunha et al. (2006); Heckman and Karapakula (2019).

Figure 4.1
Returns on social investment are particularly high at early life stages
Expected returns on social investment and rate of return, by life stage



Note: Representation of rate of return is theoretic, not empirical. Types of policies and types of returns are placed according to the moment in life in which they materialise (x-axis). Their position on the y-axis is instead random. For example, the fact that parental leave is positioned above ECEC does not mean that the former has a higher return rate than the latter.

Source: The graph in Figure 4.1 is a simplified version of Kvist (2014).

Click here to download figure.

Effective social investment policies require social investors and adequate institutional frameworks. There is a debate on the roles of different social 'investors': citizens, companies, social partners and public authorities at different levels. Traditionally, many social policies in Europe have been funded through public resources or mandatory private contributions. In a context of limited fiscal space and pressing social needs, there is growing attention to the role of voluntary private investments. These aim to combine a financial return with a positive social impact (see Annex 1). In addition, social investment policies rely not only on the provision of funds, but also on adequate institutional frameworks. When measuring social investment, expenditure and monetary flows are an important yardstick. ([17]) However, to ensure effective social investments, it is often equally important to consider barriers or enabling conditions. These may include statutory rights that cannot readily be monetised, or access to relevant information for beneficiaries.

The returns on social investment materialise over different time horizons, but the gains are expected particularly over the long-term. Certain returns on investment for social policies materialise relatively quickly: for example, a job seeker finding a new position via active labour market policies, formal long-term care resulting in social contributions (thus in tax revenues for the state and welfare provision for the individual) or a parent re-entering the labour market while the child attends day care. Other returns on social investment, however manifest themselves many years later. Young children attending high quality care may benefit immediately in terms of cognitive development. However, the productive return in terms of labour market participation will be observed only once the child enters the labour market. If the child goes on to attend higher education, this may be more than 20 years after the initial investment.

The distributive impact of social investment policies has been subject to debate. Analyses of specific policies have highlighted the risk that childcare, for example, may mainly benefit the (upper) middle class, while the most vulnerable groups make less use of such enabling policies. This is also known as the 'Matthew effect' after a passage from the gospel of Matthew which notes 'unto everyone that hath shall be given' benefits and privileges accrue more readily to those who already possess them. There are ongoing debates on how to alleviate such

([17]) De Deken (2017).

effects - including providing stronger incentives to use the services - and on the long-term distributive impact of this uneven use.

This chapter focuses on specific policy areas relating to investment in people and social sustainability: investments in children and their families; skills and LifeLong Learning; long-term care and affordable and adequate housing.

2. INVESTING IN CHILDREN AND THEIR FAMILIES

2.1. Introduction

Investing in children and their families from a life course perspective is an imperative for the EU. The Social Investment Package (2013), the Commission Recommendation on Investing in Children (2013) and the Council Recommendation on High-Quality Early Childhood Education and Care Systems (2019) called on EU Member States to tackle child poverty and social exclusion through integrated strategies ensuring access both to adequate resources and to affordable quality services, including childcare and children's right to participate in play, recreation, sport, cultural activities and decision-making that affects their lives. The European Pillar of Social Rights includes a principle devoted to childcare and support to children. It states that "children have the right to affordable early childhood education and care of good quality" and that "children have the right to protection from poverty". ([18]) In addition, "children from disadvantaged backgrounds have the right to specific measures to enhance equal opportunities".

Investment in children and their families can take different forms: It starts with providing affordable quality early childhood education and care, but can also take the form of adequate income support through social transfers (i.e. family and children benefits) and balanced paid family-related leaves. The combination of in-kind and cash support in the form of integrated services has proved to be more effective than their independent use. ([19]) Whatever form the investment in children and their families takes, its effectiveness depends crucially on its level. Through the European Semester process the European Union encourages Member States to 1) improve the availability of affordable quality childcare, 2) to adapt tax and benefits systems to remove disincentives to work for second earners and, 3) to develop distribute paid family-related leave between women and men in a more balanced way. In 2018 eight Member States (Austria, Czechia, Germany, Estonia, Ireland, Italy, Poland and Slovakia) received a Country Specific Recommendation on labour market participation of women.

Returns to investment in children and their families are high not only for children and parents (especially mothers), but also for society. This is because of their potential positive impact not only at the social level but also on fiscal sustainability and at the demographic level. First, early childhood education and care provides children with a stimulating environment where they can develop cognitive, social, language and emotional skills. This is very important for the development of children, particularly those from disadvantaged backgrounds: non-school factors (e.g. family and neighbourhood) are a major source of inequality, and high quality childcare for all social groups may help to reduce this inequality. ([20])([21]) Early childhood education and care helps to reduce inequality of opportunities at an early stage of life: early childhood education influences children's overall development more than other types of education ([22]) and can strongly increase educational mobility. ([23]) Children can capitalise on this investment throughout their subsequent lives. And, early interventions, particularly for the most disadvantaged children, have much higher returns than investment in later ages. ([24]) Secondly, the availability of quality childcare increases parents' (especially mothers') employment opportunities. This may help to reduce inactivity, unemployment and gender inequality, including career ceilings or gender pay gaps that may build up as an indirect consequence of career interruptions. Thirdly, family benefits and early childhood education and care contribute to reducing poverty levels among children. Addressing child poverty at an

([18]) https://ec.europa.eu/commission/priorities/deeper-and-fairer-economic-and-monetary-union/european-pillar-social-rights_en

([19]) Commission Recommendation on Investing in Children (2013).

([20]) Downey, von Hippel et al. (2004).

([21]) Esping-Andersen et al.(2002); OECD (2017); Woessmann (2008).

([22]) Schleicher (2019).

([23]) Burger (2012).

([24]) Heckman (2006).

early age is less costly for public budgets than dealing with its possible long term consequences (e.g. unemployment, health problems, social exclusion etc) later, because early intervention can reduce the need for social protection expenditure in the future. This is important in terms of fiscal sustainability, as risk prevention tends to be less costly than risk correction. Finally, childcare is one of the measures used to reverse low birth rates. This is crucial at demographic level given the decreasing fertility rates in the EU.

Investing in children and their families generates a high multiplier effect. ([25]) The positive short-term effects on the beneficiaries of this investment can create positive long-term effects for the whole of society. Investing in children and their families activates a "life course multiplier" of productivity and growth not only during the life course of the children but also across generations. To give an example, if child poverty is tackled, the same cohort will suffer less from poverty in adulthood. Thus, their children will be less likely to born into a poor household and will face less risk of poverty themselves.

To achieve the highest returns from investment in children and their families it is crucial to ensure equal access and use of the services. There seems to be a "social gradient" which results in children from disadvantaged socio-economic backgrounds using early childhood education and care services less than their counterparts. This can lead to a Matthew effect ([26]), in which existing inequalities among children from different backgrounds are reinforced by the fact that disadvantaged families' children use early childhood education and care services less than advantaged families' children.

There are different views on the Matthew effect in childcare use. According to some academics a focus on Matthew effects runs the risk of underestimating the long-term benefits of investment in childcare because the use of these services will ensure better parenting and work for mothers, better human capital and securing income protection for families. ([27]) Other academics are more critical of this social investment and argue that the middle class benefits disproportionately from it at the expense of poorer families. ([28]) In this context, some questions arise: is inequality in childcare use just a temporary by-product of a switch to social investment? Or does it reinforce inequalities over the life course and long term? Does this social investment switch spending to services at the expense of the most vulnerable? Or does it free up more resources in social budgets for those who need help most? The analysis in this Chapter tries to shed light on these questions by presenting empirical evidence based on the most recent available data. In the following the focus will be on *childcare*, rather than on *early childhood education and care*. The main reason behind this choice is data driven. Indeed, the empirical evidence in the section mostly refers to childcare attendance, which can be considered as a proxy of *early childhood education and care* attendance, though is a narrower concept. ([29])

2.2. Family expenditure and poverty reduction

Family expenditure per potential beneficiary has on average increased since 2008. ([30]) Average family expenditure per potential beneficiary aged below 18 ([31]) as a proportion of GDP per capita (*Chart 4.1*, first panel), grew in the first two years of the 2008 crisis, then decreased slightly between 2010 and 2011 and increased again between 2011 and 2016. This dynamic is likely to have been influenced by indexation mechanisms and how the indexation is smoothed over the cycle, particularly in the euro area Member States. ([32])

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

([26]) Pavolini and Van Lancker (2018).

([27]) Hemerijck (2017).

([28]) Cantillon (2011).

([29]) Flisi, Meroni and Vera-Toscano (2016).

([30]) The source of family expenditure is the European System of Integrated Social Protection statistics. This branch of expenditure includes both cash benefits (i.e. income maintenance benefit in the event of childbirth, birth grant, parental leave benefit, family or child allowance, other cash benefits) and benefits in kind (i.e. child day care, accommodation, home help, other benefits in kind). Both means-tested, and non means-tested benefits are included, while tax allowances are not. ESSPROS data encompasses all interventions from public or private bodies. At the time of drafting, 2016 ESSPROS data were available for all Member States, but only provisionally.

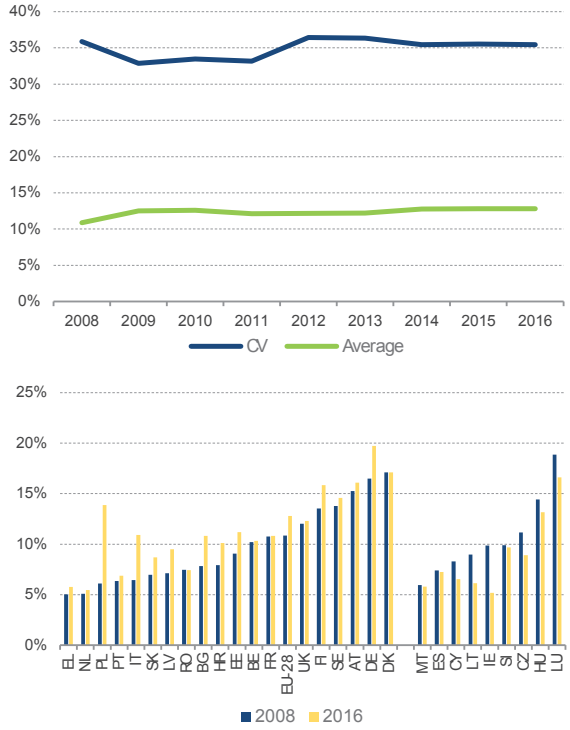
([31]) Statistics on family expenditure define children as those aged between 0 and 17 years old.

([32]) European Commission (2016b), Chapter 1.

Chart 4.1

Family expenditure per child increased in most Member States between 2008 and 2016, although levels diverge widely across the EU

Average and dispersion (coefficient of variation) of family expenditure per child (0-17) as a share of GDP per head in the EU (first panel), and average family expenditure per child (0-17) as a share of GDP per head by Member State (second panel), 2008-2016



Note: 2016 data are provisional.

Source: DG EMPL calculations based on ESSPROS (dataset "spr_exp_ffa").

Click here to download chart.

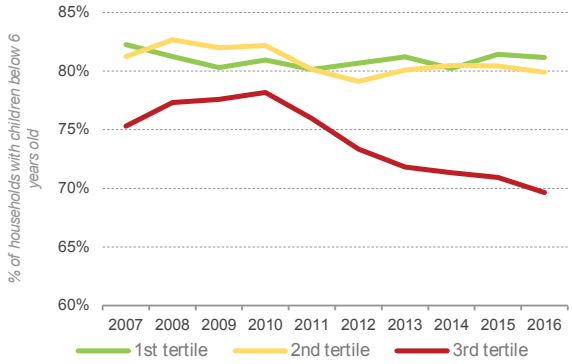
Since 2011 expenditure per child has diverged across the EU and Member States' expenditure levels vary greatly. At the EU level average family expenditure per child converged until 2009 and strongly diverged after 2011. This suggests an increasing difference in average family expenditure per potential beneficiary among Member States (*Chart 4.1*, first panel). In 2016, expenditure per child ranged from around 6% of GDP per capita in Ireland, the Netherlands, Greece and Malta to above 16% in Denmark, Luxembourg ([33]) and Germany (*Chart 4.1.*, second panel). In the majority of countries expenditure per child increased between 2008 and 2016. The highest increases were registered in Poland, Italy, Bulgaria, Latvia and Croatia (more than 25%), while in Ireland and Lithuania registered sharp decreases strongly (of above 30%). Changes in family expenditure per potential beneficiary as a proportion of GDP per capita may have been driven by changes in the number of children and by dynamics in GDP per capita. While the number of children has remained fairly stable over time, GDP per capita has been more volatile. Therefore big decreases (increases) in family expenditure per potential beneficiary as a proportion of GDP per capita – as in Ireland – are probably driven by the increase (decrease) in GDP per capita between 2008 and 2016.

([33]) To be noted that in Luxembourg a significant amount of family benefits are paid to non-residents.

Chart 4.2

Low and medium-income families are more likely to receive family benefits than high-income families. In recent years the proportion of high income families receiving family benefits has decreased

Percentage of households with children below 6 years old receiving family benefits in the EU-28, by income group, 2007-2016



Note: All EU-28 countries are shown together (weighted average). Tertiles are based on the disposable household income distribution of households with children below 6 years old.

Source: DG EMPL calculations based on EU-SILC cross-sectional data 2007 and 2016 Users' Database.

Click here to download chart.

It is not only the level of family expenditure that matters, but also its redistributive capacity, i.e. its power to reduce poverty and inequality. Looking at the proportion of households with children below 6 years old receiving family benefits, ([34]) it seems that these benefits are to some extent targeted towards low-income and medium-income families (*Chart 4.2*). A considerably lower proportion of high-income households with children receive family benefits compared with low and medium-income households in the EU. Moreover,

([34]) The source of family benefits is the European Union Statistics on Income and Living Conditions (EU-SILC, see footnote 290 in Section 2.3). Family benefits include: 1) income maintenance benefit in the event of childbirth; 2) birth grant (i.e. benefits normally paid as a lump sum or by instalments in the case of childbirth or adoption); 3) parental leave benefit; 4) family or child allowance (i.e. periodical payments to a member of a household with dependent children to assist with the costs of raising children); 5) alimonies or supports paid by government (central or local) if the spouse for some reason does not pay the alimony/child support; 6) other cash benefits (i.e. benefits paid independently of family allowances to support households and help them meet specific costs, such as costs arising from the specific needs of lone parent families or families with handicapped children).

Box 4.1: Education and training 2020 benchmark on early childhood education and care

Beyond the Barcelona targets on childcare use established in 2002, the European Council also adopted, in 2009, the early childhood education and care (ECEC) benchmark within the Education and Training 2020 strategic framework. ([1]) According to the benchmark, "at least 95% of children between 4 years old and the age for starting compulsory primary education should participate in childhood education". The benchmark was adopted "with a view to increasing participation in early childhood education as a foundation for later educational success, especially in the case of those from disadvantaged backgrounds".

While progress towards the Barcelona targets is measured with EU-SILC data, the Education and Training 2020 benchmark refers to administrative data reported by Ministries of Education or National Statistical Offices according to international standards, definitions and classifications. ([2])

([1]) https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52009XG0528(01)&from=EN

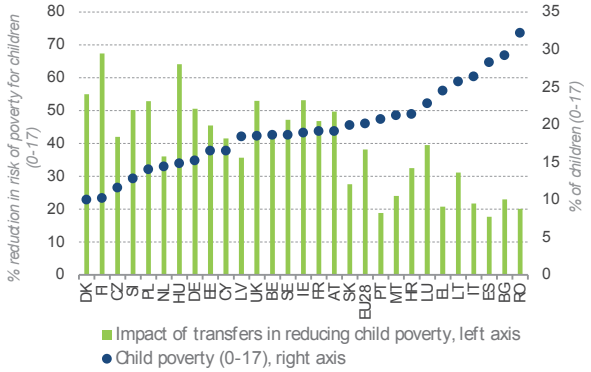
([2]) Flisi, Meroni and Vera-Toscano (2016).

between 2010 and 2016, possibly as a consequence of the policies implemented during the crisis, the proportion of high-income families with children receiving this type of benefits decreased by 8.5 pps.

Chart 4.3

In countries with high child poverty rates, poverty reduction through social transfers is fairly limited

Children (0-17) at-risk-of poverty and impact of social transfers (other than pensions) in reducing child poverty, 2017



Note: The indicator must be interpreted with caution for a number of reasons. First, no account is taken of other measures that can have the effect of raising the disposable incomes of households and individuals, namely transfers in-kind, tax credits and tax allowances. Second, the pre-transfer poverty risk is compared to the post-transfer risk with all other things being equal —assuming unchanged household and labour market structures, thus disregarding any possible behavioural changes that the absence of social transfers might entail.

Source: DG EMPL calculations based on EU-SILC cross-sectional data 2017 (2016 for IE and UK) Users' Database.

Click here to download chart.

The proportion of children at-risk-of poverty varies considerably across the EU, as does the impact of social transfers on poverty reduction. In some Member States such as Romania, Bulgaria and Spain, more than one in every four children lives in a family at-risk-of poverty (*Chart 4.3*). The proportion falls to one every ten children in countries such as Denmark and Finland. Social transfers other than pensions help to reduce child poverty. The strongest poverty reduction impacts are registered in countries with low or medium levels of child poverty (e.g. Finland, Hungary, Denmark, Ireland, UK, Poland, Germany, Austria and Slovenia).

2.3. Use of formal childcare and the Barcelona objectives

Improving the availability and affordability of childcare services has been high on the political agenda of the EU since the Barcelona Summit of 2002. At that summit, the European Council set objectives of providing formal childcare to "at least 90% of children between 3 years old and the mandatory school age, and to at least 33% of children below 3 years of age." ([35]) The indicator used to measure the Barcelona objective for children aged under 3 has been included in the Social Scoreboard of Indicators ([36]) accompanying the European Pillar of Social Rights. ([37])

Formal childcare is defined as all types of care arrangements in day-care centre, whether organised and/or controlled by a public or private provider. It does not take into account care provided by childminders without any structure between the carer and the parents (direct arrangements) ([38]) or care provided by family or friends. The formal childcare indicator

([35]) http://ec.europa.eu/invest-in-research/pdf/download_en/barcelona_european_council.pdf

([36]) https://ec.europa.eu/eurostat/web/european-pillar-of-social-rights/indicators/social-scoreboard-indicators

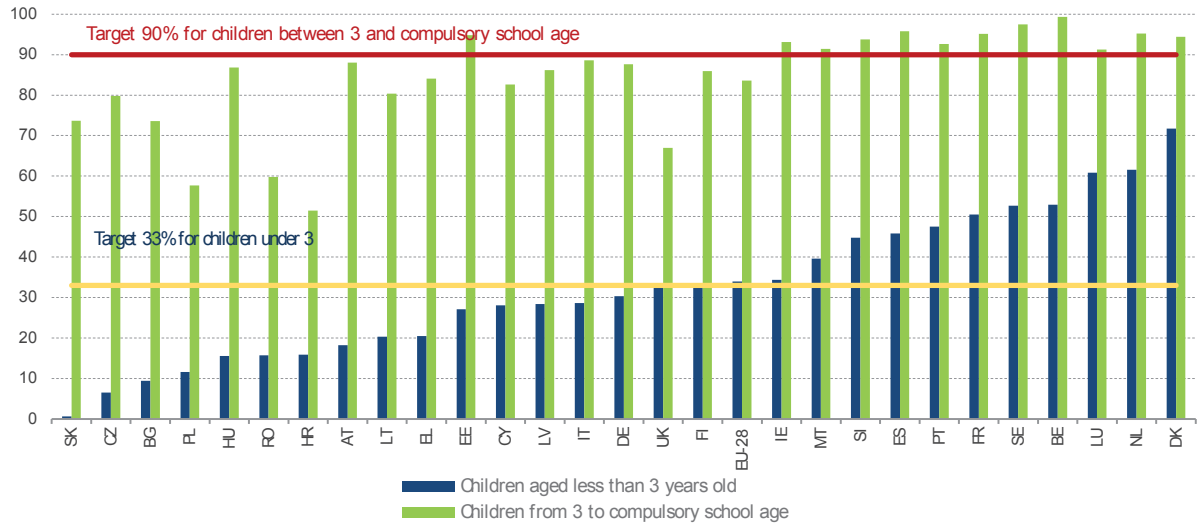
([37]) The Social Scoreboard indicator refers to the proportion of children aged less than 3 years in formal childcare.

([38]) These arrangements have been excluded from the definition of "formal care" in order to take into account only childcare recognised as fulfilling certain quality patterns.

Chart 4.4

The Barcelona objectives are still not being reached everywhere

Achieving Barcelona objectives - use of formal childcare, 2017



Note: 2017 values for HU is not available and 2016 is reported instead.

Source: DG EMPL elaboration based on Eurostat (variable "ilc_caindformal").

Click here to download chart.

is based on the European Union Statistics on Income and Living Conditions (EU-SILC). ([39]) Some of the empirical analyses in this Section and in Sections 2.4 and 2.5 are supplemented by analysis based on EU-SILC cross-sectional data from 2007 to 2017 at the country level. EU-SILC contains information on the number of hours of childcare during a normal week. ([40]) The formal childcare indicators used to measure Member States' progress towards the Barcelona objectives and also included in the Social Scoreboard uses this information in the form of a binary variable (i.e. whether the child has used the service or not). Formal childcare refers to the following EU-SILC variables: 1) education at preschool, 2) education at compulsory school, 3) childcare at centre-based services outside school hours and, 4) childcare at a day-care centre.([41])

Half of the Member States have not reached the two Barcelona objectives. Formal childcare use has increased from 28% in 2010 to almost 33% in 2017 across the EU for the group of children under 3. However, the objective of 33% has not yet been reached in fifteen Member States (*Chart 4.4*), while the objective of 90% among children between 3 years old and the compulsory school age remains unfulfilled by sixteen Member States. According tostatistics on population projections, the number of children under 3 will fall by 1.6% in the EU-28 by 2030. In all countries which have not reached the 33% objective, except Austria, a decrease is expected in the number of children under 3. For example, the number of under-3s is projected to decrease by more than 30% in Lithuania and Latvia, by 22.6% in Greece and by more than 15% in Bulgaria, Poland and Czechia. These trends are clearly related to decreasing fertility rates and possibly to emigration and the labour mobility of the young workforce. The population projections suggest that the demand for childcare services may decrease in the future. However, the reduction in demand may be not enough to compensate for the current gaps in formal childcare. ([42])

Achievement of the Barcelona objectives is an important step but is not necessarily

([39]) the European Union Statistics on Income and Living Conditions (EU-SILC) is an EU-wide survey which collects detailed data on individuals' and households' income components (https://ec.europa.eu/eurostat/web/income-and-living-conditions). It also covers poverty, social exclusion, housing, labour, health and education. EU-SILC data of a given year reflect incomes in the previous year (except for the UK and Ireland where incomes refer to the last 12 months before the interview period), i.e. in EU-SILC 2017 income components refer to 2016. Weights are provided by Member States. At the time of drafting this chapter 2017 EU-SILC micro-data were not available for Ireland and UK.

([40]) The question is asked about all household members over 12 years old.

([41]) It is not possible to distinguish between public and private childcare services in EU-SILC, nor by the financing source of the service. For the EU-SILC-based analysis on childcare the cross-sectional weight for children (RL070) has been used and the personal cross-sectional weight (RB050) was used instead if the former was missing.

([42]) European Commission (2014a).

equivalent to achieving accessible and affordable childcare provision for all. First, there is inequality in the use of the services. For most children from disadvantaged socio-economic backgrounds the Barcelona objectives are far from being reached. This issue is analysed in more detail in the following sections. Secondly, national averages very often hide existing differences in childcare availability and quality between rural and urban areas, with the former facing considerably higher gaps in childcare supply.

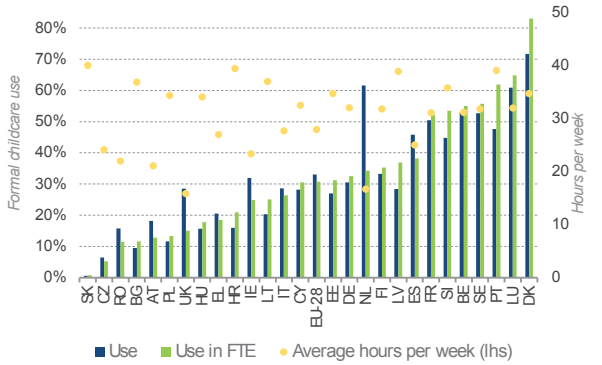
Inequality in the intensity of childcare use can be assessed by expressing the formal childcare indicator as a full-time equivalent (FTE). The FTE definition of formal childcare assumes that all children using formal childcare use these services for 30 hours per week. FTE correction is commonly used in the scientific literature on the topic. ([43]) The difference in the average number of hours of formal childcare use per week is more than 20 hours (e.g. 39 hours in Portugal against 16.7 in the Netherlands). Countries' ranking changes when the FTE indicator is applied (see *Chart 4.5*). For example, when hours are taken into account, the Netherlands moves from being in second place - after Denmark – for use of formal childcare, with the highest proportion of children under 3 attending formal childcare, to just slightly above the EU-28 average. This is not entirely surprising, given the high proportion of women in the Netherlands who work part-time in order to take care of their children.

([43]) Van Lancker (2013).

Chart 4.5

Countries ranking in childcare use change when taking in to account the great variation in the average number of hours of use per week

Formal childcare use (binary variable and use in FTE) and average hours of childcare use per week among children under 3, 2017



Note: For IE, HU, UK and EU-28 2017 data are not available (or not reliable) and 2016 data are reported instead. Data are not reported for MT and SK as not reliable due to low sample size. Full-time equivalent (FTE) formal childcare use is defined as the proportion of children using formal childcare multiplied by the average number of hours per week, expressed as a proportion of 30 hours per week.

Source: DG EMPL calculations based on EU-SILC cross-sectional data 2016 and 2017 Users' Database.

Click here to download chart.

2.4. Formal childcare use and costs and mothers' employment decisions

The labour market participation of mothers of small children depends, to a considerable extent, on their access to affordable, high-quality childcare services. There is a significant difference between the employment rates of women with children and women without them, suggesting that motherhood and related care responsibilities have a significant employment impact. In 2017, the employment rate of women with children aged 6 or less was 65% as opposed to 79% for women without children (*Chart 4.6*). In general, use of formal childcare is positively correlated with mothers' employment rate. Evidence also shows that more extensive use of childcare for young children under 3 is strongly linked to their mothers' chances of employment (*Chart 4.7*). ([44]) This seems to suggest that while motherhood plays a crucial role in labour supply decisions (from the decision whether to work or not to choices of work intensity), it is the availability and affordability of childcare services that explain different levels of mothers' employment across the EU. Indeed, the countries where there is greater use of childcare usually exhibit higher employment rates of mothers. However, for the same level of childcare use, there is some variation in terms of mothers' employment rates among EU countries (*Chart 4.7*). This is the case, for example, for Hungary

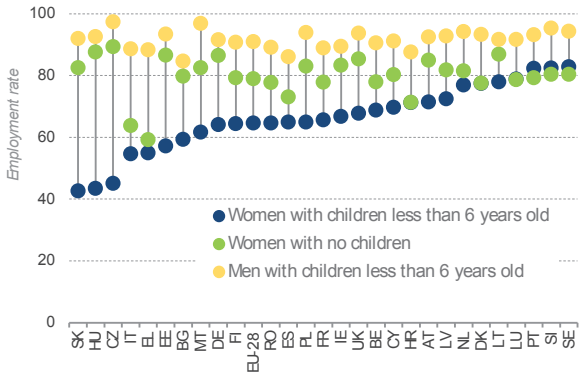
([44]) European Commission (2016a), Chapter III.2.

and Romania, for Greece and Lithuania, for Spain and Slovenia and for Belgium and Sweden. These cases (similar level of childcare use but different employment rates of mothers) show that the effect of using childcare on mothers' employment depends partly on other factors, particularly the institutional context of the countries, including family policies, labour market flexibility and cultural norms. ([45])

Chart 4.6

The impact of motherhood on employment is quite strong in most Member States

Mothers' employment rate compared to fathers and women without children (people aged 25-49), 2017



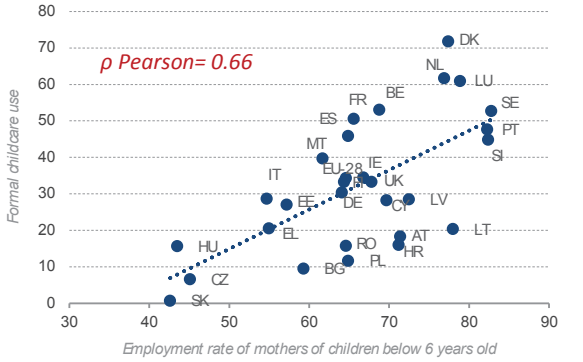
Source: DG EMPL elaboration based on ESDE 2015 (Chapter III.2, Chart 11) and on Eurostat (variable "lfst_hheredch")

Click here to download chart.

Chart 4.7

Employment rates of mothers tends to be higher in countries with high use of formal childcare for children under 3

Correlation between mothers' employment (aged 25-49) and use of formal childcare for children under 3, 2017



Note: 2017 value of formal childcare use is not available for HU and 2016 data is reported instead.

Source: DG EMPL elaboration based on Eurostat (variables "ilc_caindformal" and "lfst_hheredch").

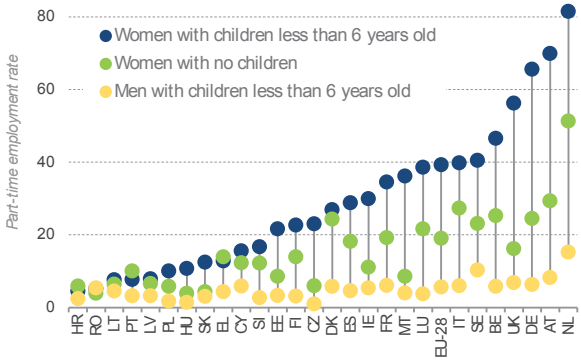
Click here to download chart.

Mothers are much more exposed to part-time work than fathers, due to caring responsibilities. Despite improvements in womens' labour force participation, the work patterns of men and women continue to differ greatly (see Chapter 1, Section 3). Parenthood affects not only the level of mothers' employment (*Chart 4.6*), but also the intensity of their work. At EU level in 2017, almost 40% of mothers of children under 6 were in part-time work, while less than 6% of fathers (and only 19% of women with no children) worked part-time (*Chart 4.8*). There is much variation among Member States. Part-time employment rates for mothers move from below 10% in Croatia, Romania, Lithuania, Portugal and Latvia, to above 50% in UK, Germany, Austria and the Netherlands. While high part-time employment rates may be explained by cultural norms and different motherhood models, a high level of part-time work among mothers may also indicate difficulties in combining work and family life.

Chart 4.8

Part-time employment rates are considerably higher for mothers of young children than for women with no children

Mothers' part-time employment rate compared to that of fathers and women without children (people aged 25-49), 2017



Note: Data are not available for BG.

Source: DG EMPL elaboration based on Eurostat (variable "lfst_hhptechi").

Click here to download chart.

Full-time use of formal childcare services is associated with high maternal work intensity. Conversely for mothers of young children, the higher the average hours of formal childcare use, the lower the part-time employment rate of mothers (*Chart 4.9*): countries where the average use of childcare exceeds 35 hours per week tend to show low part-time employment rates for mothers. This is the case in Croatia, Portugal, Latvia and Lithuania. At the opposite end of the distribution are countries such as the Netherlands and Austria, with low average hours of childcare use and very high part-time rates for mothers. There are also outliers, such as Romania, Germany and the UK, where other factors - possibly related to the institutional labour market - may be important in explaining mothers' work intensity decisions.

High childcare costs may affect mothers' labour supply decisions by discouraging them from working. Mothers' incentives to enter

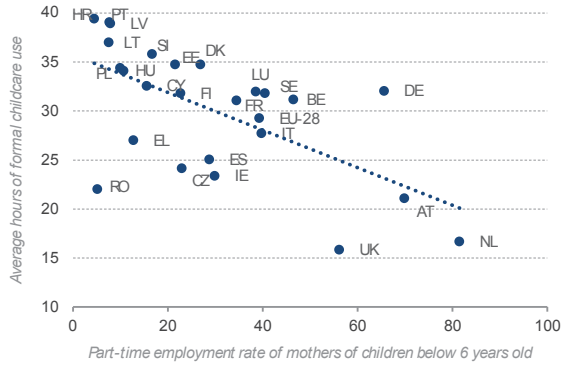
([45]) Cascio, Haider, and Nielsen (2015); Vuri (2016).

employment are determined not only by the wages they receive in work, but also by the amount they lose in higher taxes and lower benefits, and by the childcare costs they may incur if they no longer care for their children themselves. Participation tax rates (PTRs) are a way of measuring the disincentive to take up work: they represent the proportion of mothers' additional earnings which are lost in higher taxes or lower benefits, and to childcare costs, if any ([46]).

Chart 4.9

The average number of hours of formal childcare use is lower in countries with a higher part-time employment rate for mothers

Correlation between part-time employment rate of mothers (aged 25-49) and average hours of formal childcare use (per week) for children under 3, 2017



Note: Data on part-time employment rate of mothers are not available for BG. As concerns data on hours of formal childcare use, these are not available (or not reliable) for IE, HU, UK and EU-28 for 2017 and 2016 data are reported instead. Data not reported for MT and SK as not reliable due to low sample size.

Source: DG EMPL elaboration based on Eurostat (variables "lfst_hhptechi") and on EU-SILC cross-sectional data 2016 and 2017 Users' Database.

Click here to download chart.

Mothers' disincentives to take up a job differ considerably across countries, and depend heavily on whether or not childcare costs are considered. The OECD tax-benefit model (TaxBEN) ([47]) makes it possible to analyse the PTR of the second adult in a household taking up a job, accounting for childcare costs and abstracting from them (*Chart 4.10*). The higher the participation tax rate, the greater the disincentive to work. Disincentives to work are considerably higher when childcare costs are considered. This is true of all countries in the EU.

The disincentives to entering employment are generally higher for low-income families, particularly when the income lost to childcare costs is taken into account (*Chart 4.10*, first panel). This suggests that childcare costs can be significant in creating disincentives to work and indicates the importance of affordable and high-quality childcare services provision in enabling parents to balance work and family life. The biggest difference in disincentives to taking-up a job with and without childcare costs are found in the UK, Ireland and Slovakia, which suggests that, for mothers of young children, the biggest disincentives to entering employment are found in the countries with the highest childcare costs.

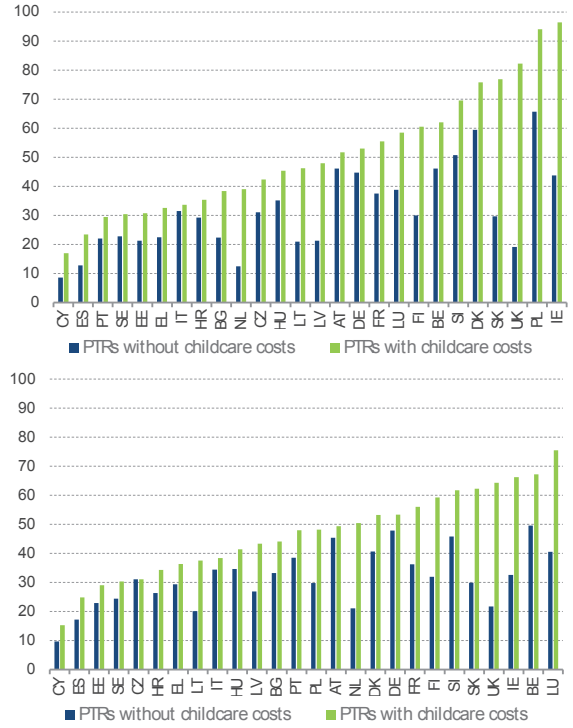
([46]) PTRs are defined as follows: "fraction of additional gross earnings lost to either higher taxes, lower benefits or childcare fees when a parent with preschool children enters employment and uses centre-based childcare services" (OECD 2018, http://www.oecd.org/social/benefits-and-wages/data/). The OECD tax-benefit model calculates PTRs either accounting for additional income lost to childcare costs or abstracting from childcare costs entirely (i.e. assuming no childcare-related costs, benefits or tax reductions).

([47]) The OECD tax-benefit model (TaxBEN) calculates childcare costs for the years for the years 2004, 2008, 2012, 2015 and 2018. It provides a *"unified framework for estimating the cost of childcare to parents in a consistent way across countries, taking into account both the gross childcare fee amounts and entitlements to fee subsidies and childcare benefits and tax credits"*. These entitlements are calculated for specific family types, accounting for interactions with other taxes and benefits. Malta and Romania are excluded from the analysis due to data constraints. For details on childcare see Browne and Neumann (2017).

Chart 4.10

Incentives to work differ for low and high-income families and are highly dependent on whether or not childcare costs are taken into account

Participation Tax Rates (PTRs) for low- (first panel) and high-income families (second panel) with and without childcare costs across the EU, 2018



Note: PTRs are defined as the fraction of additional gross earnings lost to either higher taxes, lower benefits and/or childcare fees. A low-income family has a primary earner with gross earnings at the 50th percentile of the earnings distribution and the secondary earner with earnings at the 20th percentile upon entering work. A high-income family has a primary earner with gross earnings at the 80th percentile of the earnings distribution and the secondary earner with earnings at the 50th percentile upon entering work. Malta and Romania are excluded due to data constraints.

Source: OECD tax-benefit model

Click here to download chart.

Investing in childcare policies by lowering childcare costs has a positive effect on the use of childcare as well as on the labour market participation of women. EUROMOD microsimulations shows the impact of a reduction of childcare costs in a selection of countries (Annex 2). Two pairs of countries are analysed: a pair which is still far away from the 33% Barcelona target for children under 3, namely Hungary and Lithuania, and other pair which has reached that target, Finland and the Netherlands. The analysis shows that decreasing childcare costs increases the use of childcare and mothers' employment in countries where childcare costs are currently high (Finland and the Netherlands). In countries where these costs are low (i.e. Hungary and Lithuania), other policies focused on increasing availability might work better in enhancing childcare use and the labour supply of women.

When considering childcare use in the context of mothers' employment, it can be difficult to disentangle the impact of policies versus preferences. Policies can, of course, shape personal preferences and vice versa. Parental leave policies (as distinct from maternity leave) and public childcare provision are seen as the most important instruments in facilitating female employment ([48]). And while some countries may display consistency across family policy domains, many do not. Denmark is generous across all the three important areas (leave policies, childcare subsidies and preschool programmes) while Spain has generous childcare subsidies and universal preschool ([49]), but (until recently) had a limited leave policy. ([50]) There is evidence([51]) that countries which make the most effort to foster the employment of mothers through paid leave and public provision of childcare are also those with high female employment rates and high ratios of female earnings to household incomes.

There is some debate over the most effective policies to support working mothers. Redistribution and investment in public services benefit women more than men, because women earn less than men on average and tend to make more use of services, especially childcare and the infrastructure surrounding the unpaid care economy([52]). Social investment e.g. early childhood spending is likely to be more beneficial for female work outcomes than extended maternity benefits and leave([53]). Critics of conventional social policies to reduce gender inequality emphasise how they can have the effect of segregating women in family-friendly workplaces such as the public sector, leaving other workplaces unchanged, and of easing work-family conflicts without challenging the gendered allocation of household labour ([54]). Also a more progressive tax system with targeted tax expenditures may be beneficial for working mothers.

([48]) Blum (2016); Daly and Rake (2004).

([49]) Cascio, Haider, and Nielsen (2015).

([50]) Spain has adopted in 2018 a new law extending the right of fathers to paid paternity leave from 4 to 5 weeks.

([51]) European Commission (2016a).

([52]) Himmelweit (2002); Mengyesi and Kalaverzou (2014).

([53]) Olivetti and Petrongolo (2017).

([54]) See Korpi, Ferrarini and Englund (2013), for an overview.

2.5. Inequality in childcare use

To be effective, childcare services need to be of high quality and provided for all social groups, but particularly for the most vulnerable.([55]) There may be financial barriers to accessing childcare especially in countries where public childcare services are fairly limited, but parents may also decide voluntarily to reduce working time to stay at home with their children. Such decisions may be influenced by cultural norms on motherhood in their country ([56]), and these norms may differ between poorer and richer families, with, for example, poorer families having a lower preference for using childcare services. When childcare costs are high, incentives to work may be insufficient for some parents, leading them to stay at home with the children and not use childcare service. However, households with a high work intensity typically do use childcare services. Barriers in access to childcare will be analysed in the following section, while this section focuses on existing differences in the use of childcare services between families from different socio-economic backgrounds.

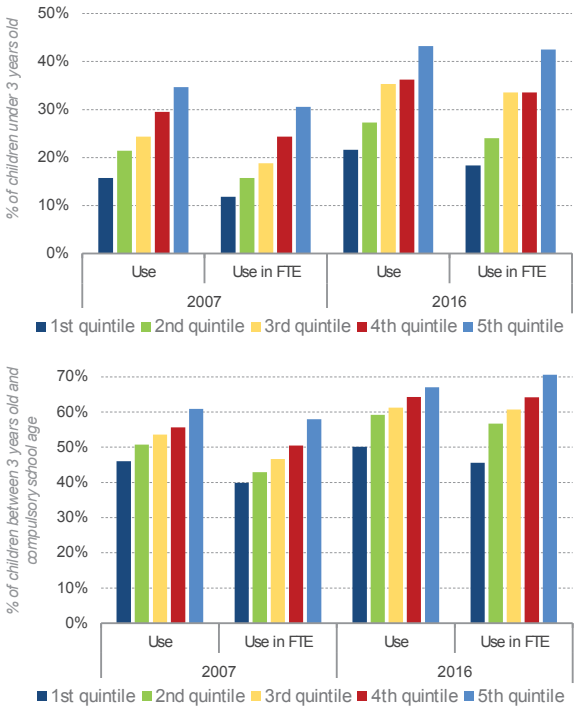
([55]) Esping-Andersen et al. (2002).

([56]) Pavolini and Van Lancker (2018).

Chart 4.11

Children from low-income families use childcare less than those from medium- and high-income families

Formal childcare use (binary variable and use in FTE) among children under 3 (first panel) and children between 3 years old and compulsory school age (second panel), by income quintiles, 2007-2016, EU-28



Note: All EU-28 countries are shown together (weighted average). Quintiles are based on the disposable household income distribution of households with children below 6 years old (first quintile has the lowest income). Full-time equivalent (FTE) formal childcare use is defined as the proportion of children using formal childcare care multiplied by the average number of hours per week expressed as proportion of 30 hours per week.

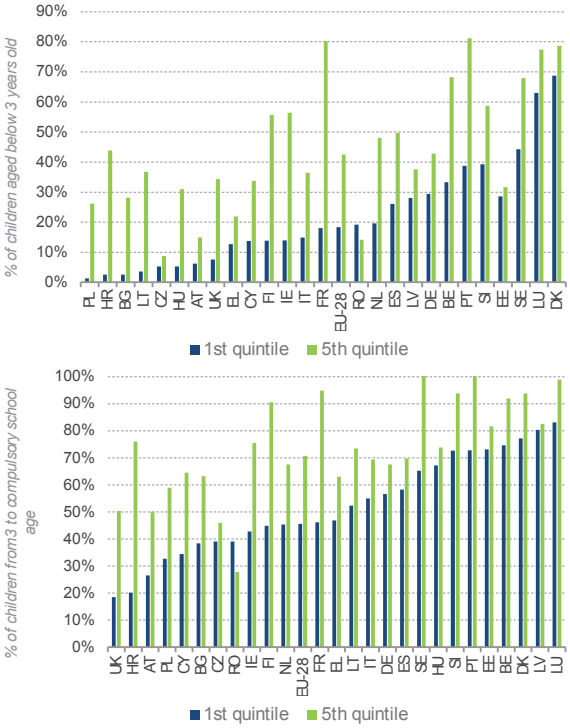
Source: DG EMPL calculations based on EU-SILC cross-sectional data 2007 and 2016 Users' Database.

Click here to download chart.

Chart 4.12

Across almost all countries childcare use is lower for children from low-income families than for children from high-income families

Formal childcare use in FTE among children under 3 (first panel) and children between 3 years old and compulsory school age (second panel), in the first and fifth quintile of the income distribution, 2017



Note: Quintiles are based on the disposable household income distribution of households with children below 6 years old (first quintile has the lowest income). For EE, IE, HU, UK and EU-28 2017 data are not available (or not reliable) and 2016 data are reported instead. Data not reported for MT and SK as not reliable due to low sample size. Full-time equivalent (FTE) formal childcare use is defined as the proportion of children using formal childcare care multiplied by the average number of hours per week expressed as proportion of 30 hours per week.

Source: DG EMPL calculations based on EU-SILC cross-sectional data 2016 and 2017 Users' Database.

Click here to download chart.

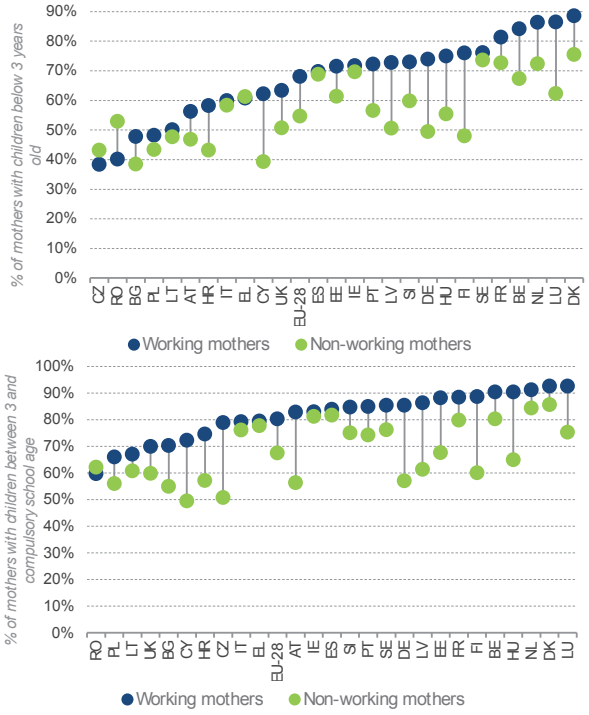
In the EU there is considerable inequality in the use of childcare services, with low-income families more likely to forego childcare services than high-income families. This carries risks, as it reinforces existing inequalities and contributes to accumulating both serial and multiple disadvantages. While over time the use of formal childcare has increased among all income groups, both for children under 3 (*Chart 4.11*, first panel) and for those aged between 3 and compulsory school age (*Chart 4.11*, second panel), inequality in its use has not declined. Inequality in childcare use is considerably higher for children under 3 than for older ones. Correcting for FTE increases the inequality in childcare use, suggesting higher intensity of childcare use by richer families. Inequality in childcare use is particularly high in some countries (*Chart 4.12*), such as Croatia, UK, France and Finland, where differences in the use of childcare services between families in the first and fifth quintiles are equal or above 100%, both for children under 3 (*Chart 4.12*, first panel) and for those between 3 and compulsory school age (*Chart 4.12*, second panel). Among very young children (under 3) the difference in childcare use between first and fifth quintiles is also very high in Bulgaria, Lithuania and the Netherlands.

Children with non-working mothers attend childcare less than those with working mothers. Unsurprisingly, and in line with the macro evidence presented in a previous section, parents are more likely to revert to childcare services if the mother works. This reinforces the evidence that childcare services are less likely to be used for children from disadvantaged socio-economic backgrounds. The disparity in the use of childcare services according to the labour market status of mothers exists both among very young children (*Chart 4.13*, first panel) and among the group between 3 and compulsory school age (*Chart 4.13*, second panel), but it is slightly higher in the first group. There are, however, countries where there is no or little difference in childcare use between children of non-working and working mothers. In these cases it is possible that children are being taken care informally, by other family members. For very young children, this is the case in some of the Southern countries - Italy, Greece and Spain – and in Ireland, Lithuania and Sweden; for older children, this is the case in Italy, Greece, Spain, Ireland, and Romania. The reasons may depend on motherhood norms, but the (lack of) availability of high-quality childcare services is probably also relevant.

Chart 4.13

Childcare used more for children with working mothers than for children of mothers who do not work in most Member States

Formal childcare use (binary variable) among children under 3 (first panel) and children between 3 years old and compulsory school age (second panel), by working status of the mother, 2017



Note: For EE, IE, HU, UK and EU-28 2017 data are not available (or not reliable) and 2016 data are reported instead. Data not reported for MT and SK as not reliable due to low sample size.

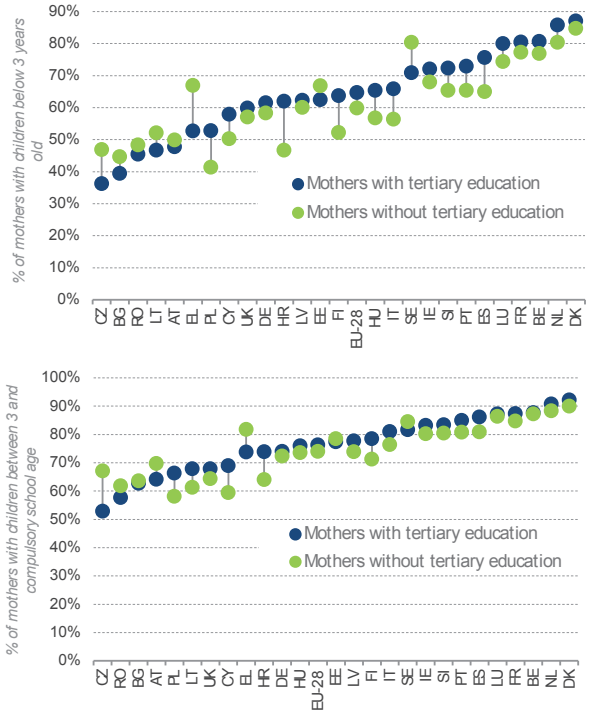
Source: DG EMPL calculations based on EU-SILC cross-sectional data 2016 and 2017 Users' Database.

Click here to download chart.

Chart 4.14

Highly educated mothers of children under 3 use childcare slightly more than less highly educated counterparts

Formal childcare use (binary variable) among children under 3 (first panel) and children between 3 and compulsory school age (second panel), by education level of the mother, 2017



Note: For EE, IE, HU, UK and EU-28 2017 data are not available (or not reliable) and 2016 data are reported instead. Data not reported for MT and SK as not reliable due to low sample size.

Source: DG EMPL calculations based on EU-SILC cross-sectional data 2016 and 2017 Users' Database.

Click here to download chart.

Young children of mothers with a high level of education are more likely to attend childcare than those whose mothers have a low level of education (*Chart 4.14*). This is linked to evidence that a high education level is strongly correlated with having a job. However, the level of maternal education does not seem to play a strong role in determining the extent of childcare use for older children.

2.6. Barriers in access to childcare

Access to childcare can be difficult for different reasons, ranging from affordability and availability to proximity, opening hours and quality. ([57]) Not only costs and availability but also preferences and social norms may drive childcare choices. ([58]) Scientific research ([59]) seems to indicate that preferences and cultural norms on motherhood (demand-side factors) alone are not good predictors of childcare use. However, affordability and availability (supply-side factors) are structural constraints to childcare use that matter everywhere. There are other less obvious barriers to accessing childcare which may affect poorer families more – travel costs, the added pressure of caring for larger families, difficulty in applying for childcare subsidies or concerns about eligibility particularly for immigrant families. ([60]) Low-

([57]) Eurofound (2017).

([58]) Vuri (2016).

([59]) Abrassart and Bonoli (2015); Pavolini and Van Lancker (2018).

([60]) Austin et al. (2005).

income families working under non-standard contracts and/or working non-standard hours not only face reduced income and employment predictability necessary to maintain childcare use, but also may not work the regular hours that are essential for dropping children off and collecting them from childcare centres. ([61]) Low-wage earners often have to contend with less accommodating and family-friendly policies despite arguably being those most in need of them, because they are more likely to have health care needs, to be single parents and caregivers and to have longer commutes. ([62]) Low-wage employees are also at greater risk than high-wage earners if they lose their jobs because of conflicting work and family commitments (e.g. if they have to leave work to care for a sick child and their employer uses this as grounds for dismissal).

One third of Europeans have some difficulty in affording childcare services, according to the 2016 EU-SILC ad hoc module on access to services (*Chart 4.15*). The main reasons for not using more formal childcare (when needed) is affordability (almost 50%), while in second place are reasons linked to the availability of the service (around 20%). From this evidence it seems clear that higher childcare subsidies would increase childcare use.

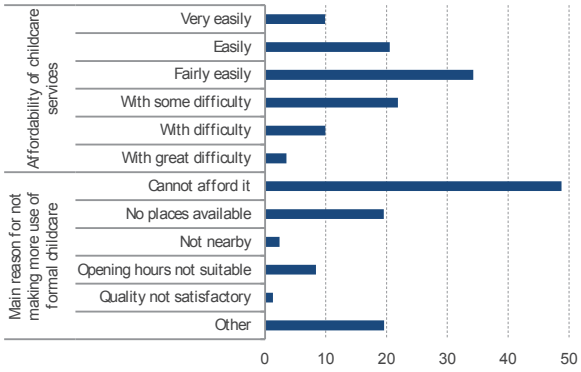
([61]) National Women's Law Center (2014). Literature on this topic suggests that flexible working impacts parents' childcare choices (Han (2004)). Parents who work non-standard hours spend longer in paid work with less time to spend on childcare and flexible working further entrenches gender inequalities in childcare burdens (Craig and Powell (2011)).

([62]) https://psmag.com/economics/work-life-balance-benefits-low-wage-workers-employers-35733

Chart 4.15

More than 30% of families with young children using formal childcare find it difficult to afford it

Barriers to childcare access among families with children under 3 using childcare services, 2016, EU average



Source: DG EMPL calculations based on EU-SILC ad-hoc module 2016 Users' Database.

Click here to download chart.

High childcare costs for low-income families, and the low progressivity of these costs, are likely to be a major cause of the existing inequality in childcare use. Given that lack of affordability is the main reason for parents not making more use of formal childcare, it is worth analysing how the net costs of childcare (taking into account tax deductions) differ between low-income, medium-income and high- income families.

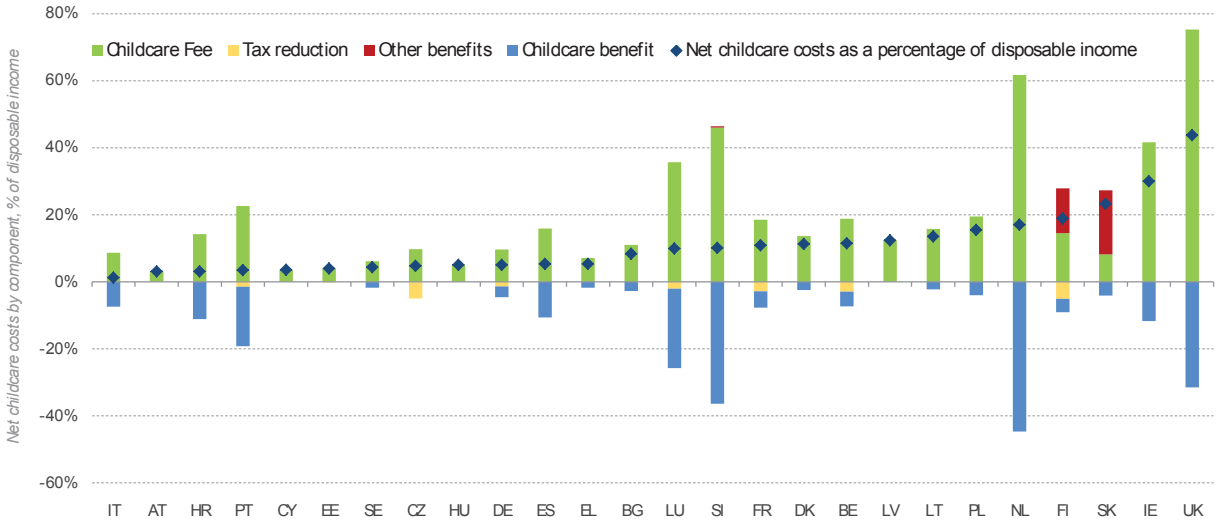
Out-of-pocket childcare costs are higher for low-income families than higher-income families across the EU, although there is considerable variation in these costs (*Chart 4.17*). The OECD tax-benefit model facilitates a cross-country comparison of net childcare costs for specific family types at various earning levels ([63]). In many countries, low-income families pay higher net childcare costs as a percentage of their disposable income, though there are some notably progressive exceptions (Luxembourg, Netherlands, and to a lesser extent Belgium and France). Countries with low net childcare costs (e.g. Italy, Austria, Croatia, Portugal, Cyprus, Estonia, Sweden, Hungary, Germany, Spain and Greece) tend to show very small differences between poorer and richer families in the effect of these costs on disposable income. However,

([63]) Net childcare costs refer to cost of full-time centre-based care for a two-parent two-child family, where both parents are in full-time employment and the children are aged 2 and 3. Net childcare costs are comprised of gross fees minus childcare benefits/rebates and tax deductions, plus any resulting changes in other benefits received following the use of childcare and/or change in family income). See footnote 298 (Section 2.4) for details on the OECD tax-benefit model.

Chart 4.16

There is considerable cross-country variation, not only in the level of net childcare costs but also in how these costs are determined

Net childcare costs by component for a low-income family as a percentage of disposable income, 2018



Note: Net childcare costs refer to cost of full-time centre-based care for a two-parent two-child family, where both parents are in full-time employment and the children are aged 2 and 3. Net childcare costs are comprised of gross fees minus childcare benefits/rebates and tax deductions, plus any resulting changes in other benefits received following the use of childcare and/or change in family income). A low-income family has a primary earner with gross earnings at the 50th percentile of the distribution and a secondary earner at the 20th percentile.

Source: OECD tax-benefit model.

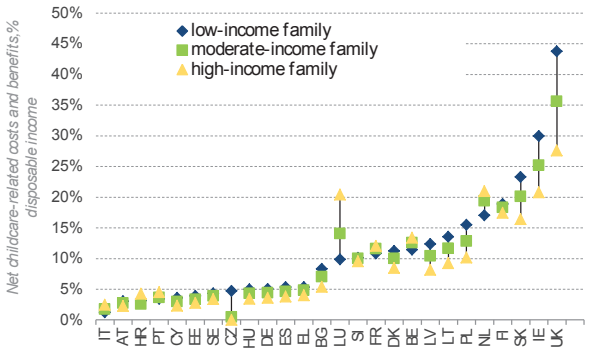
Click here to download chart.

in countries where childcare costs consume a much higher share of families' net income (e.g. the UK, Ireland, Slovakia, Poland, Lithuania and Latvia), there are much bigger differences between income groups in net childcare costs as a percentage of disposable income. The cross-country disparities for low-income families are particularly striking. High-income families in Luxembourg, the Netherlands and Ireland all spend a similar proportion of income on childcare (circa 21%) but low-income families are paying drastically different amounts, with costs in Luxembourg at 8% of disposable income compared with 35% in Ireland.

Chart 4.17

Net childcare costs are in general higher for low-income families than for medium-income and high-income families

Net childcare-related costs and benefits as a percentage of disposable income for two-parent families with two children at various earning levels, 2018



Note: Net childcare costs are as defined in footnote 314 (Section 2.6). A low-income family has a primary earner with gross earnings at the 50th percentile of the distribution and a secondary earner at the 20th percentile; a moderate-income family has two earners at the 50th percentile, and a high-income family has a primary earner with earnings at the 80th percentile and a secondary earner at the 50th percentile.

Source: OECD tax-benefit model.

Click here to download chart.

In terms of the composition of net childcare costs, there is considerable cross-country variation in how fees are determined (*Chart 4.16*). Some countries have low initial fees, often with subsidies going directly to providers (e.g. Italy, Austria), others have high fees but high childcare benefits (Luxembourg, Slovenia) while others use a mix of childcare benefits and other benefits to reduce net childcare costs.

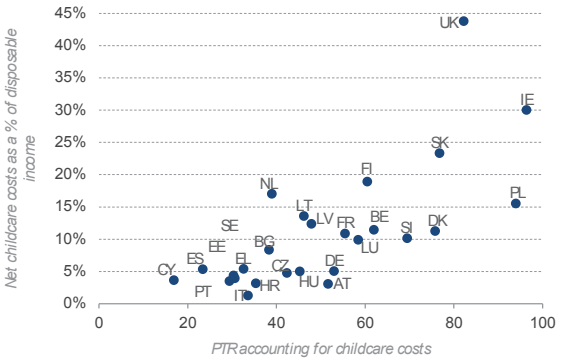
The majority of countries with low childcare costs achieve this by virtue of low initial costs, as opposed to high costs balanced by high benefits. The potential for inequalities in childcare access supports the case for measures which keep out of pocket fees low and offer free provision in the first instance.

The ways in which out-of-pocket costs are determined can have distributional impacts. Tax reductions for childcare use may, for example, benefit only families with incomes high enough to pay taxes. Universal free provision is becoming increasingly common, offering at least partial coverage (e.g. Ireland([64]) and in some cases full-time care (e.g. Berlin, Germany ([65])). These examples show a strong commitment to the provision of childcare as an important public service/investment and as a social right in line with the European Pillar of Social Rights. However, such measures are not targeted and may require high public expenditure. Other measures may be needed to ensure that low-income families can supplement the hours provided for free or at a reasonable cost.

Chart 4.18

Countries where families spend more on childcare tend to show greater disincentives to work

Scatter plot between participation tax rates (PTR) accounting for childcare costs and net childcare costs as a percentage of disposable income across EU countries for low-income families, 2018



Note: PTRs are defined as the fraction of additional gross earnings lost to either higher taxes, lower benefits and/or childcare fees. Net childcare costs are as defined in footnote 314 (Section 2.6). A low-income family has a primary earner with gross earnings at the 50th percentile of the earnings distribution, and a secondary earner at the 20th percentile when in employment.

Source: OECD tax-benefit model.

Click here to download chart.

Barriers in access to childcare are also barriers to employment (as discussed in Section 2.4). The higher the proportion of their income that low-earning families spend on out-of-pocket childcare costs, the lower their incentives to take up employment. While this is simply a correlation and not evidence of a causal relationship (*Chart 4.18*), it seems natural that more affordable childcare should make it easier for those caring for young children (in many cases mothers) to enter employment. This is true in particular, but not only, for low-income households.

([64]) https://www.dcya.gov.ie/viewdoc.asp?DocID=4786&ad=1

([65]) https://www.dw.com/en/berlin-first-in-germany-to-scrap-child-day-care-fees/a-44883019

3. Investing in skills and lifelong learning ([66])

3.1. Introduction

The European social model aims to strengthen the skills base so as to boost employment and competitiveness as well as better living conditions. Efforts to strengthen human capital have been made throughout the history of European Union. In the Europe 2020 strategy for smart, sustainable and inclusive growth,([67]) investment in skills was seen as a way to improve competitiveness and productivity, while helping to achieve the Europe 2020 target of 75% of the adult population in employment by 2020. ([68]) More recently, the European effort to promote skills was considered "crucial" in the European Commission communication in the assessment of progress on structural reforms in the 2019 European Semester, where the need to strengthen and modernise the education and

([66]) This section will not cover childcare, even if it is a topic covered by the title, since it has been discussed in the previous pages.

([67]) https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/european-semester/framework/europe-2020-strategy_en

([68]) The centrality of investment in education and training in the European Social Model is confirmed by the fact that two of the other Europe 2020 targets were on education, namely: "rates of early school leavers below 10%", and "at least 40% of people aged 30–34 having completed higher education". These were supported by the strategic framework for European cooperation in education and training ("ET 2020") in the following targets, among others:

fewer than 15% of 15-year-olds should be under-skilled in reading, mathematics and science;

the rate of early leavers from education and training aged 18-24 should be below 10%;

at least 40% of people aged 30-34 should have completed some form of higher education;

at least 15% of adults should participate in learning;

at least 20% of higher education graduates and 6% of 18-34 year-olds with an initial vocational qualification should have spent some time studying or training abroad;

training system is seen as the main route to tackling skills shortages and mismatches. ([69]) At the same time, upskilling and reskilling policies should boost the resilience of individuals, especially those belonging to disadvantaged groups.([70])

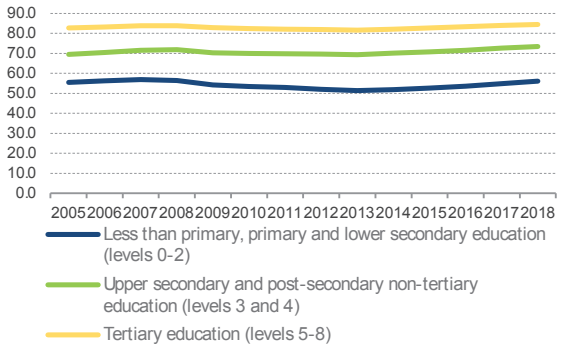
3.2. The education and training system: positive effects and resources allocated

Investment in education and training yield significant returns for workers, the economy and society. Education and training have several beneficial effects justifying investment. In this section the focus will be on three main dimensions: workers, the economy, and the society. The advantages for workers start in the labour market where higher levels of formal education are associated with higher employment rates (*Chart 4.19*), lower unemployment, better matching between jobs and workers, and higher wages. ([71]) Moreover, having a job is a prerequisite for access to insurance-based social benefits. As regards the effect on the economy, a high stock of human capital has two main advantages. First, economic theory ([72]) shows that education and training have a positive effect on workers', capital, and total factor productivity through their skills and ultimately in terms of economic growth. ([73]) Secondly, given the effects on participation and employment, investment in human capital leads to lower expenditure in unemployment benefits, and higher revenues from tax and social contributions. As for the positive effects for society, evidence from the European Union shows that being employed, or in education or training, is associated with a higher level of institutional trust and of engagement with society and participatory democracy.([74]) Moreover, it helps people to fulfil their potential as human beings and citizens. For instance, the modernisation and digitalisation of the welfare state, while reducing expenditure and increasing efficiency, requires a minimum level of digital skills. Individuals not equipped with those skills may face significant barriers.

Chart 4.19

Higher level of formal qualifications are linked with higher employment rates

Employment rate by educational attainment level (ISCED), population aged 20-64



Note: There are large and persistent differences across formal qualification groups. The results hold for all age groups. In the 55-64 age bracket, there is an upward trend in this period, probably driven by a cohort effect and by higher female labour market participation.

Source: Eurostat [tepsr_wc120]

Click here to download chart.

Upper secondary and tertiary formal qualifications are associated with a higher level of income in an important and statistically significant way. ([75]) The positive link with education goes beyond employment status, and is also evident in levels of income ([76]). Using EU-SILC data([77]), it is possible to show the position for EU Member States at the present time. *Chart 4.20* shows the correlation (regression coefficients) between a number of conditions and the real hourly wage([78]) ([79]) for

([69]) In the context of the European Semester, the Commission also made a proposal on the framework to benchmark adult skills and learning, which was endorsed in the Employment Committee (EMCO).

([70]) https://ec.europa.eu/info/sites/info/files/file_import/2019-european-semester-communication-country-reports_en_0.pdf

([71]) There are also differences between general and vocational qualification levels. For instance, for what concerns employment rate in 2018: young people (defined as aged 20-34) having completed education 1-3 years before the survey with a medium-level qualification diploma (ISCED levels 3 and 4) reveal a difference of 13 pp in terms of employment rate: 66,3% for those having obtained a degree with general orientation, 79,5% for those with a vocational orientation degree.

([72]) Among others, worth mentioning are: Mincer (1958); Becker (1964); Mincer (1974).

([73]) Woessmann (2016).

([74]) Eurofound (2015).

([75]) For all the section, we would use upper secondary for ISCED levels 3-4 and tertiary for ISCED levels 5-8.

([76]) Becker (1964); Mincer (1974).

([77]) See footnote 290 (Section 2.3) for information on EU-SILC.

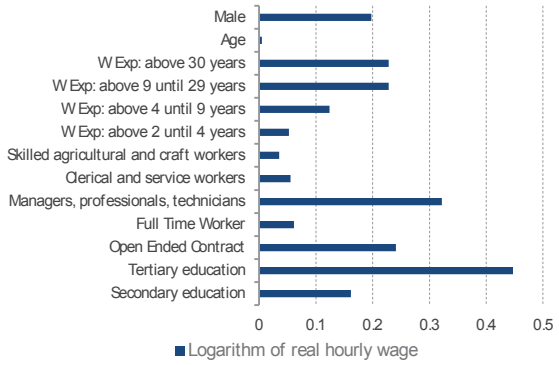
([78]) The wage information in EU-SILC is available with a reference period of 1 year. Hourly wages are calculated as annual wages divided by annual hours worked. Annual gross wages are available in the survey (variable PY010G), while annual hours worked are derived as total number of months spent at full-time work as employee (variables PL073 and PL074) multiplied by number of hours usually worked per week in a job (variable PL060). Given the discrepancy in EU-SILC between the income reference year (e.g. 2015 in EU-SILC 2016) and hours

employees. The "effect" ([80]) of secondary and tertiary education is shown in the first two columns. The results of the regression indicates that, all other things being equal, secondary education in the EU-28 is associated with a higher level of real hourly wage (+16.2%). This is even more true for tertiary education (+44.7%), after controlling for factors including contract type, working hours, occupation, work experience, age and gender. These results are in line with other studies on this topic ([81]).Tertiary education in particular is the factor with the biggest correlation, followed by being employed in a "high-skilled white collar" cluster of occupations (managers, professionals, technicians), and having an open-ended contract. Seniority is also positively correlated with higher salary, as is being male.

Chart 4.20

Secondary and, most of all, tertiary education are correlated with significantly higher income for employees

Regression coefficients of the logarithm of real hourly wage of employees aged 25-64, years 2009-2017.



Note: All estimated coefficients in the chart are statistically significant at 1%. The variables names starting with the expression "W Exp" refer to years of working experience. The base categories for the dummy variables refer to: primary or below primary education, in Germany, non-standard contract, person in the clustered occupation group of plant machine operators and elementary occupation, with less than two years of experience, and female as gender. Control variables have been included for all MS. Employees in the armed forces have been omitted from the analyses.

Source: DG EMPL calculations based on EU-SILC cross-sectional data from 2009 to 2017.

Click here to download chart.

Results hold broadly true for every Member State, though with some differences in the relative effect of secondary and tertiary education. The analysis shown in *Chart 4.20* was conducted for every year of the sample and for every Member State. The positive effects of secondary and tertiary education hold in every country. *Chart 4.21* shows only the coefficients for secondary and tertiary education for all Member States. The ratio between the two coefficients illustrates some remarkable differences across Member States, the smallest difference being in Sweden (where secondary education raises the real hourly wage by 17.5% and tertiary education by 22.6%), the highest in the United Kingdom (where the estimated coefficients are 7% and 33.6% respectively). Among the other results of the regressions not shown in graph 4.21, seniority is also linked with a statistically significant positive effect. The same holds true for being male and for people having an open standard contracts. The other coefficients broadly hold, but each of them turns out to have a statistically insignificant effect in at least one other Member State.

worked and employment status (2015 in EU-SILC 2016), hourly wages are calculated only for those employees who maintained their labour market status for seven or more months during the income reference year.

([79]) The logarithm of real hourly wage on employees was used.

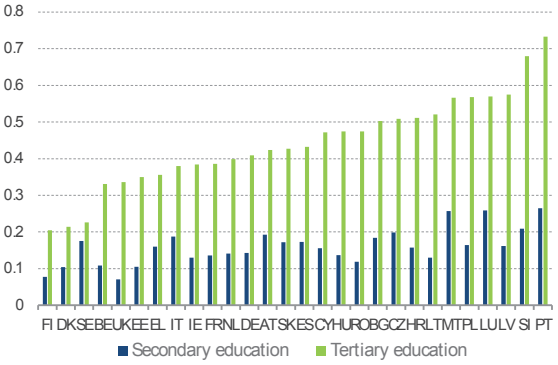
([80]) The word effect should not be interpreted in a causal way. The figures reported in this section refer to correlation, which does not imply causation. The lack of a causal link is referred to in the literature as the endogeneity problem or ability bias. From a theoretical perspective, high ability people should pursue higher qualifications to signal their ability to the labour market. With the regressions presented in this section it is only possible to acknowledge this link.

([81]) Blundell, Deardan and Sianesi (2005), for example, find an average return of 18-24% to secondary schooling and of 48% to tertiary education. More recent analysis by the OECD (2018), Psacharopoulos (2014) and Glocker and Steiner (2011) also find high returns, including in the EU.

Chart 4.21

Secondary and tertiary qualifications are correlated with higher employees' income in each Member State

Regression coefficients of on the logarithm of real hourly wage of employees aged 25-64, years 2008-2017.



Note: All estimated coefficients shown in the graph are statistically significant at 1%. The variables named starting with the expression "W Exp" refer to years of working experience. The omitted variables refer to: primary or below primary education, non-standard contract, person in the clustered occupation group of plant machine operators and elementary occupation, with less than two years of experience, female gender. Control variables have been included for all MS. Employees in the armed forces have been omitted from the analyses.

Source: EU-SILC, own calculations

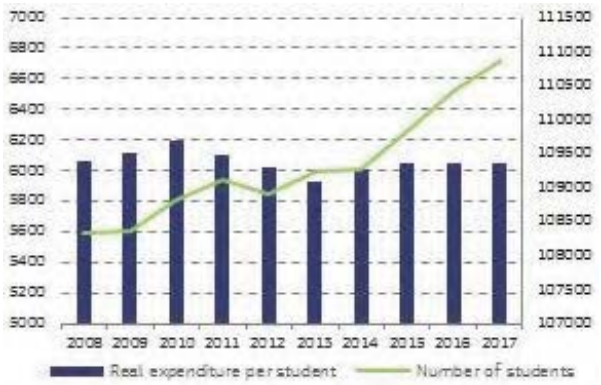
Click here to download chart.

Investment in skills and training have remained stable in recent years, and an investment gap remains. Expenditure on education and training in the EU is mostly by governments (80.9% in 2015), with some differences across Member States. In the UK, 71% of the expenditure comes from public finances while in Slovakia the figure is 96%. In this section the focus is on public expenditure, leaving private spending for the 'Investment in education, training and sustainability' section. On average, public expenditure, expressed as a percentage of GDP, decreased from 2008 to 2017, while real expenditure remained broadly stable. This trend was coupled with an increase in the number of students in national education systems. ([82]) ([83]) *Chart 4.22* shows that overall in the period 2008-2017 real expenditure per student decreased slightly. ([84]) Yet, according to the analysis conducted by the High-Level Task Force on investing in social infrastructure in Europe, ([85]) there is an investment gap in the domain of education and training. This amounts to EUR 15 bn per year, a significant figure given that total investment in social infrastructure is EUR 65 bn (Fransen et al., 2018) ([86]). Social infrastructure ([87]) is mostly outside the remit of this report.

Chart 4.22

While the number of students increased over the last decade, real expenditure per student did not

Number of students and real expenditure on education per student in the period 2008-2017



Note: Number of students (in thousands) on the right, and real average expenditure (in EUR) by student on the left. Students' figure refers to all enrolled pupils and students, from early childhood to doctoral degree. For countries where number of enrolled students was not available for 2017, the same figure as 2016 were used instead.

Source: EMPL calculations based on the following Eurostat data codes: [gov_10a_exp], [educ_enrl1tl], [nama_10_gdp] and [educ_uoe_enra02].

Click here to download chart.

([82]) The figure refers to all students together, from early childhood to doctoral degree.

([83]) In 2017 there were 2.5 million more students in the EU than in 2008, though 13 Member States registered a reduction.

([84]) The average hides substantial differences. As can be seen in *Chart 4.23*, while the UK experienced an 18% increase in the number of students coupled with a drop in real expenditure of 14 pp, Slovakia saw a decrease in the number of students by 17% paired with an increase in real expenditure of 35 pp.

([85]) Following an initiative promoted by the European Association of Long-Term Investors, in close consultation with the European Commission, a High-Level Task Force on investing in social infrastructure in Europe was established in February 2017. This was chaired by Romano Prodi and Christian Sautter.

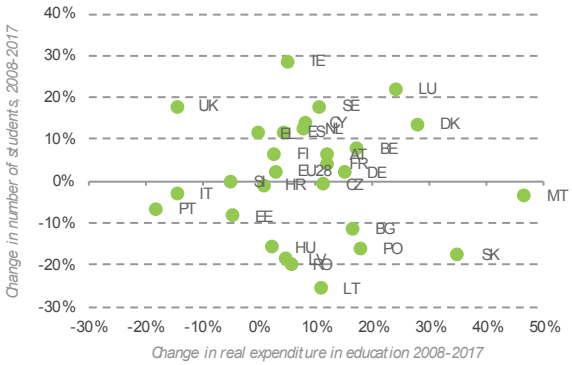
([86]) The calculations refer to 2015, and are based on national accounts' data from Eurostat.

([87]) The report defines social infrastructure in the education and LifeLong Learning domain as tangible (including kindergartens, childcare centres, schools, vocational colleges, universities, laboratories, ICT equipment & related Cloud infrastructure, student accommodation, adjacent supporting infrastructure) and intangible (including facility maintenance, energy efficiency/low carbon, student lending, R&D programmes, education software development).

Chart 4.23

Member States trends in numbers of students and expenditure on education differ substantially

Changes in numbers of students and real expenditure on education in the period 2008-2017, by Member States



Source: EMPL calculations based on the following Eurostat data codes: [gov_10a_exp], [educ_enrl1tl], [nama_10_gdp] and [educ_uoe_enra02].

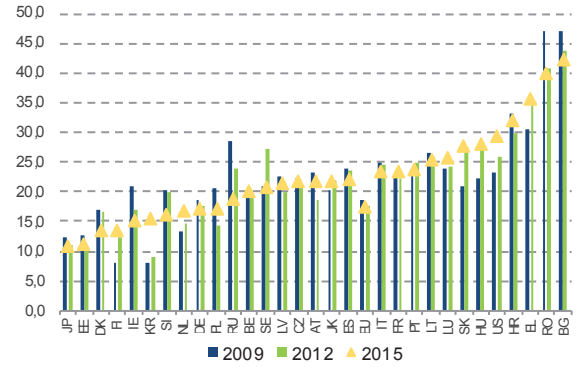
Click here to download chart.

The number of underachieving students in maths is slowly decreasing, while the opposite is true for science. While analysing social investment, it is important to keep in mind that expenditure on education alone does not guarantee improvements in student performance. Nevertheless, better results in tests for mathematical and scientific skills, as well as cognitive skills more generally, show a consistent and strong link with economic growth. ([88]) *Chart 4.24* and *Chart 4.25* show the evolution in the number of underachievers ([89]) in PISA tests in mathematics and science. ([90]) On average, EU countries have shown some modest improvements in mathematics and some uneven trends in science across the latest three surveys (in 2009, 2012 and 2015). Internationally, these developments led to Europe outperforming the US in terms of reducing the proportion of low achievers, and moving the EU closer to South Korea. However, countries such as Russia showed marked improvements over the same timespan, and Japan managed to reduce further their already low proportion of low achievers. This may indicate further potential for improvements in Europe, and the need to devise better strategies to tackle underachievement and improve the efficiency and effectiveness of education spending. ([91]) Recent evidence also shows that non-traditional competences such as effort and perseverance, measured through PISA test log-files, correlate positively with traditional skills ([92]) strengthening the case for further attention to education and training.

Chart 4.24

Europe showed small average improvements in reducing the proportion of students underperforming in mathematics

Underachieving 15-year-old students in mathematics



Note: No complete time series for CY and MT. EU is unweighted average. RU=Russia; US = United States; JP=Japan; KR= South Korea.

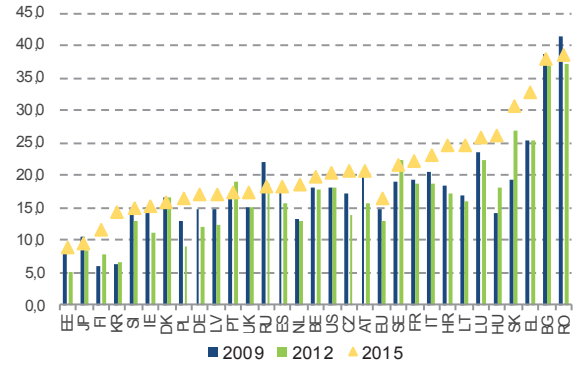
Source: OECD PISA survey [educ_outc_pisa]

Click here to download chart.

Chart 4.25

Conversely, the proportion of students underperforming in science increased

Underachieving 15-year-old students in science



Note: No complete time series for CY and MT. EU is unweighted average. RU=Russia; US = United States; JP=Japan; KR= South Korea.

Source: OECD PISA survey [educ_outc_pisa]

Click here to download chart.

([88]) Hanushek and Kimko (2000); Hanushek and Woessmann (2015); Hanushek and Woessmann (2017).

([89]) The indicator measures the share of 15-year-old students failing to reach level 2 ('basic skills level') on the PISA scale for the three core school subjects of reading, mathematics and science (here only the last two are presented). The data stem from the Programme for International Student Assessment (PISA), which is a triennial international survey which aims to evaluate education systems by testing the skills and knowledge of 15-year-old students.

([90]) The focus is on PISA tests since data are easily available. Moreover, it has been estimated that an increase of 50 points in the educational achievements in these test lead to an increase of around 1 pp in the economy (see Woessmann, 2016).

([91]) Canton et al. (2018).

([92]) European Commission (2019b).

3.3. The role of work experience during studies

Work experience during secondary and tertiary education is positively linked with employment, but with strong differences at country level. In the 1960s, academic literature discovered a negative correlation between educational attainment and unemployment. ([93]) European labour markets have evolved substantially since then, and in the 2010s policymakers undertook several rounds of reforms of education systems, often with the aim of improving the matching between education systems and labour market needs and outcomes. These reforms were accelerated during the crisis, with the aim of to facilitating the integration of younger cohorts in the labour market.([94]) The LFS([95]) ad-hoc module 2016 ([96]) on "Young people on the labour market" allows estimation of the effect of work experience, both paid and unpaid, during studies. ([97]) *Chart 4.26* shows that for people in the age bracket 25-34 the likelihood of being employed increases substantially when they have had work experience, especially if they had paid work experience. Nevertheless, there is great variation between Member States in the employment status of those who have had work experience (both paid and unpaid) at the highest educational attainment level and those who have not. The discrepancy ranges from 2 pp in Czechia and Romania, to 23 p.p. in Bulgaria and Italy (*Chart 4.27*).

([93]) Becker (1964).

([94]) ETUC (2016).

([95]) The EU Labour Force Survey (EU-LFS) is the largest European household sample survey, covering 35 countries (EU28, three EFTA countries and four candidate countries). Its main statistical aim is to classify the population aged 15 years and over into: employed persons, unemployed persons, and economically inactive persons

([96]) LFS ad hoc modules are yearly models dealing with a particular labour market topic. They complement the standard sets of LFS questions with supplementary sets of variables.

([97]) 'During studies' refers to the studies that led to the highest educational attainment level.

Chart 4.26

For people aged 25-34, work experience during studies is correlated with higher employment rate (EU)

Labour status during reference week based on work experience during studies

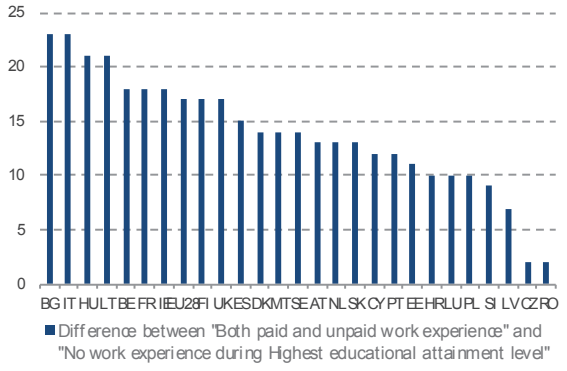
Source: LFS AHM 2016 - Young people on the labour market – microdata. DE was excluded due to errors in coding the replies which were not yet corrected at writing.

Click here to download chart.

Chart 4.27

For people aged 25-34, work experience during studies is correlated with higher employment rate

Difference between "Both paid and unpaid work experience" and "No work experience during highest educational attainment level"



Note: All estimated coefficients reported in the graph are statistically significant. DE was excluded due to errors in coding the replies which were not yet corrected at writing.

Source: LFS AHM 2016 - Young people on the labour market – microdata

Click here to download chart.

This positive correlation of work experience during education with being in employment afterwards holds after controlling for a number of factors such as age, gender and education level. In order to isolate the effect of having work experience, both paid and unpaid, at the highest educational attainment level, a more sophisticated type of analysis is needed, keeping a focus on the possibility of being employed for individuals undertaking training. ([98]) In these series of charts, we will only consider working experience included in the curriculum,

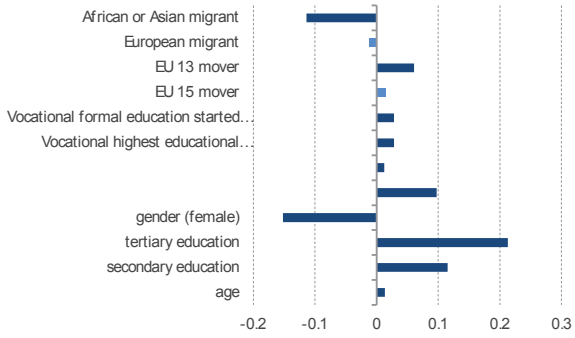
([98]) The methodology chosen was logistic regression. Logistic (or logit) regression is a type of regression analysis that estimates the parameters of a logistic model, and it is a type of binomial regression. From an econometric point of view, the dependent variable can only have two possible values. In this case the values are: being employed or not.

often targeted by policy recommendations and regulated by policymakers. ([99]) *Chart 4.28* shows the outcome for all EU Member States pooled together. Almost all the relationships estimated are statistically significant, ([100]) the exceptions being those referring to as EU-15 mover ([101]) and European migrant (the box in the following page presents more detailed evidence on labour mobility and return mobility). Both the paid and unpaid work experience have a positive effect on the possibility of being employed, other factors being equal. Paid work experience (raising the probability of having a job by 9.7pp) has the fifth biggest effect on employment levels, and is third among the positive effects, trailing only the presence of tertiary and secondary qualifications. Vocational curricula are also linked with a higher employment rate. ([102]) Conversely, all else being equal, being a woman or being an immigrant is linked with a lower probability of being employed.

Chart 4.28

Work experience during the highest educational level is positively correlated with the probability of being employed in a statistically significant way

Average Marginal Effects from logit regression based on LFS AHM 2016 on young people in the LM (25-34)



Note: Students excluded from analyses. EU15 mover is lighter blue because not statistically significant. DE was excluded due to errors in coding the replies which were not yet corrected at writing. Complete name fifth regressor: "Vocational formal education started after reaching highest level of education". Complete name sixth regressor: "Vocational highest educational attainment".Complete name seventh regressor: "Unpaid work experience during the highest level of education ".Complete name eighth regressor: "Paid work experience during the highest level of education".

Source: LFS AHM 2016 - Young people on the labour market – microdata.

Click here to download chart.

These effects tend to be confirmed at national level, with some important differences between Member States. *Chart 4.29* shows the effects of paid and - where this is statistically significant - unpaid working experience during the highest level of education in different Member States. The country where the effect is highest is Italy, where previous paid work experience increases the probability of employment by 21pp. ([103])

([99]) For the interested reader, including the individuals who are working outside of the curriculum has barely any effect on the results. The main two are that BG, EL, and UK coefficients of the regressors linked with unpaid working experience gain significance. This is mostly due to the fact that removing students working outside the curriculum reduces the sample size.

([100]) At 1%.

([101]) Following the intra EU labour mobility report, EU-15 movers are EU citizens coming from EU-15 who reside in an EU-28 country other than their country of citizenship. EU-13 movers are the same but coming EU-13.

([102]) For the interested reader, a comprehensive description of VET systems in Europe by country can be found at the CEDEFOP website: http://www.cedefop.europa.eu/en/events-and-projects/projects/vet-europe

([103]) IT has more unpaid than paid working experience (15% against 11%) and is above average in terms of of unpaid working experience (15% against an EU average of 10%). Yet it does not rank in the EU top five in terms of diffusion of unpaid working experience (these are FR, HU, LT, PL, SK). With the exception of FR, also in these other countries unpaid working experience is more common than paid working experience.

Chart 4.29

The positive correlation between employment and working experience during studies is positive and statistically significant for most Member States

Average Marginal Effects from logit regression based on LFS AHM 2016 on young people in the LM (25-34)

Note: CZ, HR, LV, LU, MT, PL, RO did not have statistically significant coefficients of the regressors estimated for neither paid nor unpaid working experience during highest educational attainment. DE was excluded due to errors in coding the replies which were not yet corrected at writing.

Source: LFS AHM 2016 - Young people on the labour market – microdata.

Click here to download chart.

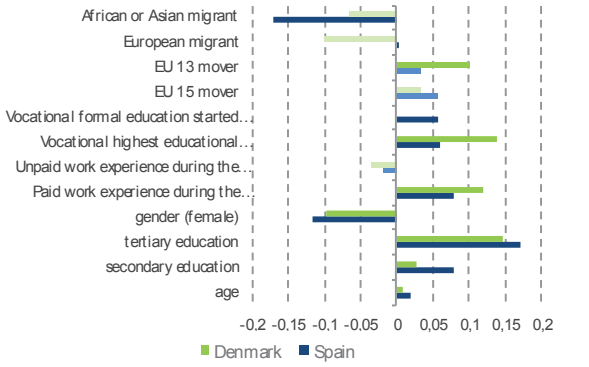
The effect is lower than 5pp in only three countries. Unpaid work experience alone is less significanct in most Member States, mainly due to its lower incidence (10% of the overall sample, against 29% for paid work experience). The negative correlation with being a woman is confirmed and statistically significant in every Member State, with a negative effect of 15% on average on the probability of being employed, varying from 3% to 25%.

Diverse institutional settings are the most likely drivers of the differences in the coefficients. *Chart 4.30* illustrates Spain and Denmark, which are characterised by different institutional settings: a social democratic welfare state regime in the case of Denmark, and a Southern welfare model in the case of Spain. The countries reacted differently to the crisis: while in Denmark the employment rate was close to 80% at the beginning of the crisis and decreased by less than 4 pp at its peak, Spain experienced a drop of 11pp in the employment rate between 2007 and 2013 (from 69.7 to 58.6). ([104]) The situation was particularly serious for younger cohorts, who tend to suffer disproportionately from negative economic shocks. Youth unemployment in Spain tripled between 2007 and 2013, moving from 18.1% in 2007 to 55.1% in 2013, ([105]) particularly as a result of job losses in the construction sector. ([106]) Analyses carried out on these two countries reflect these differences. In the Spanish case, the magnitude of the estimated coefficients linked with secondary and tertiary education are smaller than in the EU case, possibly reflecting the decision of younger people to undertake further classes and raise their human capital rather than becoming NEETs, even at the risk of over-education. In the Danish case, the results are different. The positive impact of tertiary education is also lower than the EU average, but the vocational nature of the highest educational attainment is the second largest estimated coefficient, emphasising the importance of vocational curricula in Denmark (the proportion of students involved is four times higher than in Spain). Having had paid work experience during the programme leading to their highest educational attainment remains positively and significantly correlated with being employed subsequently.

Chart 4.30

Institutional settings play a role in explaining the differences at country level

Average Marginal Effects from logit regression based on LFS AHM 2016 on young people in the LM: the Spanish and Danish cases (25-34 years old)



Note: Lighter colour means that the result is not statistically significant. Vocational formal education started is significant at 5% rather than 1%. Complete name fifth regressor: "Vocational formal education started after reaching highest level of education". Complete name sixth regressor: "Vocational highest educational attainment".Complete name seventh regressor: "Unpaid work experience during the highest level of education ".Complete name eighth regressor: "Paid work experience during the highest level of education". DE was excluded due to errors in coding the replies which were not yet corrected at writing.

Source: LFS AHM 2016 - Young people on the labour market – microdata.

Click here to download chart.

3.4. Adult learning: participation and positive effects

Participation in adult learning has spread through Europe over the last decade thanks to non-formal training, while participation in formal training is decreasing. Over the last 25 years, human capital policies have increasingly widened their focus from younger cohorts to older ones, leading most countries to adopt

([104]) Eurostat, [lfsi_emp_a].

([105]) Eurostat, [une_rt_a].

([106]) A phenomenon described already in Wölfl and Mora-Sanguinetti (2011).

"LifeLong Learning" policies. ([107])([108]) Among the first formal steps was the Delors report (Delors et al., 1996), ([109]) and since then adult policies have only expanded, particularly in the EU.([110]) In this section the analysis will cover adults (defined as people aged 25-64), and more specifically their participation in education and training during the last 12 months. So far Eurostat has categorised learning activities ([111]) in three main typologies:

Formal learning: learning that occurs in an organised and structured environment (such as in an education or training institution or on the job) and is explicitly labelled as learning (in terms of objectives, minimum duration and resources). The programme must be recognised by the relevant national education or equivalent authorities, and will normally have specific requirements (in terms of admission and registration) and lead to certification.

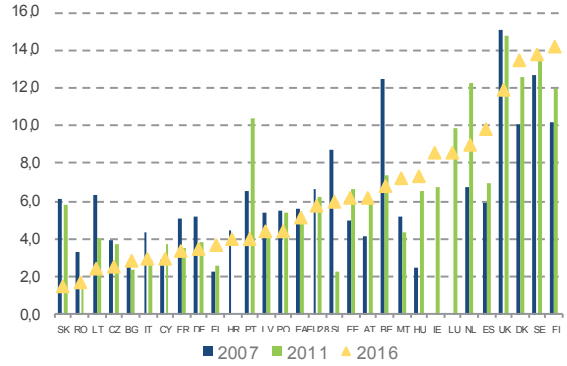
Non-formal learning: learning embedded in planned activities which are institutionalised but outside a recognised programme. Non-formal learning does not have not explicit learning objectives, minimum duration or learning support).

Informal learning: learning resulting from daily activities related to work, family or leisure. It is not organised or structured in terms of objectives, time or learning support. ([112])

Chart 4.31

Participation in formal education and training increased in the last decade in only nine Member States

Participation in formal education and training in the last 12 months, by country.



Source: AES database [trng_aes_100]

Click here to download chart.

([107]) European Commission (2006).

([108]) The change of focus has been accompanied by a change in the data source. While previous results were based on the LFS ad hoc module 2016, focusing on "young people on the labour market". This module contains rich data in terms of granularity, but covers only people aged 15-34, and most of the analyses keep the focus on the 25-34 age bracket. This section intends to focus its analysis on adults. It is therefore necessary to use another data source, the Adult Education Survey (AES). AES covers adults' (defined as people aged 25-64) participation in education and training during the last 12 months.

([109]) The Delors report introduced a vision of education based on two main concepts: learning throughout life and the so-called "four Pillars of Education" (learning to know, learning to do, learning to be, and learning to live together).

([110]) Adult education is also a second chance education for people who never completed, or underperformed in, secondary and tertiary education when they were younger. Many migrants or people with a migrant background depend on this type of education for their future careers.

([111]) Learning activities are defined as "any activities of an individual organised with the intention to improve his/her knowledge, skills and competences". Source: Eurostat (2016:1).

([112]) Ibid.

Box 4.2: Intra-EU labour mobility and return flows

Intra-EU labour mobility helps the allocation of productive factors. The free movement of workers is one of the four fundamental freedoms of the EU, along with those of capital, services, and goods. As such, it is enshrined in Article 45 of the TFEU. From an economic perspective, freedom of movement for workers allows improvements in efficiency of factor allocations (Borjas, 1995). Reducing barriers to movement should indeed improve the matching of supply and demand, leading to lower unemployment, higher growth and tax revenues in the receiving country (Boswell and Geddes, 2011). From an inequality perspective, the effect of mobility depends on the skillset of the movers: inflows of skilled workers should raise their relative supply and increase competition among them (Boeri and Van Ours, 2013), while empirical evidence found little evidence of effect on natives' wages (Peri, 2014).

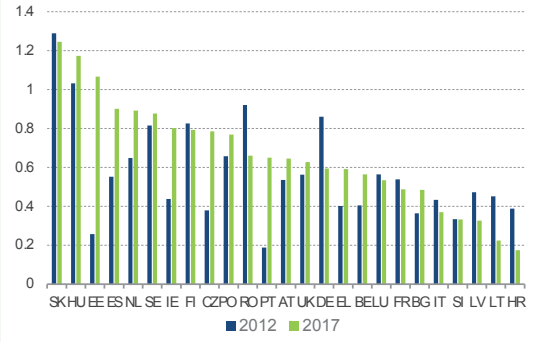
Sending countries may benefit from mobility in the short term, especially if they have a high level of unemployment, but may also face skill shortages, tax erosion and lower returns from social investment. Thus, while weighing on the capacity of sending countries to support adequate investment and social protection (CEPS, 2019), intra-EU labour mobility can act as a shock absorber in asymmetric crises (Barslund and Busse, 2016). Outflows of unemployed people can reduce the strain on public finances through lower expenditure on unemployment benefits and social assistance. In the long term, sending countries may suffer from emigration, especially if emigrants were high skilled workers, thus potentially affecting country productivity and tax revenues (Mohapatra et al., 2012). They can also represent a loss in terms of social investment, since the sending country incurs a cost whose benefits are reaped by the receiving country.

EU movers tend to be better educated and skilled and there is evidence of over-qualification (European Commission 2015). 17.5 million EU citizens were living abroad in 2018. Mobility is a growing phenomenon (it has increased by more than 20% since 2014), and affects mostly men (55% vs 45%). The two main movement patterns are from Eastern countries to Western ones, and from Southern to Northern ones. On average, EU movers have a higher employment rate (74%, as against 69% for natives) ([1]) Moreover, the skillset of EU movers is correlated with their country of origin. In particular, people coming from the EU15 are more likely to have tertiary education than natives of the receiving country (38% against 25%), while those from the EU13 are less likely (22%): more of them have primary education only. Also, EU15 movers are more often in high skilled occupations, while EU13 movers are more frequently in low skilled ones. More specifically, EU15 movers are more likely than natives to be occupied as managers, professionals and technicians (+8% on average), while being underrepresented among clerical and service workers (-3%) and skilled agricultural and craft workers (-5%). EU13 movers, however, are more heavily represented than natives among plant machine operators and elementary occupations (+20%), less heavily represented among managers, professionals and technicians (-23%) and skilled agricultural and craft workers (-3%). While the above patterns provide some evidence of brain drain, particularly for EU13 countries, and while return rates are generally lower for countries with significant emigration rates, there is also evidence that return rates to some traditional emigration countries are increasing (*Chart 1*). This is especially the case for Member States that have returned to economic growth after the crisis (e.g. Spain, Ireland, Portugal) as well as for Member States with low unemployment rates (e.g. Czech Republic, Poland, Estonia). Such return migration shows that intra-EU labour mobility can be beneficial for both individuals and sending and receiving countries.

Chart 1

Several Member States affected by high outflows during the crisis are registering high and/or growing return migration flows

Return migration relative to emigration flows



Note: CY, DK, MT excluded from the analysis. All countries registered return rates higher than 100% in both years.

Source: Eurostat: [migr_imm1ctz] and [migr_emi1ctz].

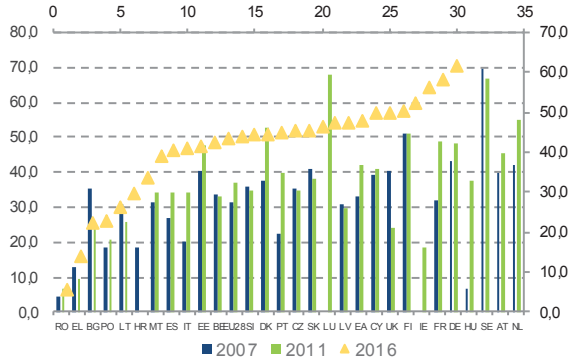
([1]) This is true also for younger cohorts, for both EU 15 and EU13 movers. The regression carried out in section 3.3 of this chapter confirms this findings: while removing the country dummies in the regression, both coefficients (signalling citizenship of another EU Member States, either EU15 or EU13, become statistically significant.

This section will focus on formal and non-formal learning, since these tend to be easier to monitor than informal learning and can provide clearer messages for policymakers. Overall participation in education and training has continued to grow in Europe: 35.2% of adults took part in education and training in 2007, but that rose to 40.3% in 2011 and 45.2% in 2016. Women tend to report slightly lower outcomes at EU level. At country level, Scandinavian and Baltic Member States have a higher presence of men in formal education and training while the opposite is true in most Southern and Eastern European countries. The overall increase in participation in education and training has been driven solely by non-formal education and training (an increase of one third in the share of participants in that period), as shown in *Chart 4.32*. On the other hand, participation in formal programmes declined by more than 10% in the EU as a whole over the same time span (*Chart 4.31*).

Chart 4.32

Participation in non-formal education and training rose in all but five countries in the last decade

Participation in non-formal education and training in the last 12 months, by country.



Source: AES database [trng_aes_100]

Click here to download chart.

Formal and non-formal education and training have positive effects on work performance, though formal programmes more often lead to promotions and higher salaries. AES respondents stressed that formal and non-formal training both have a beneficial effect, particularly in (self-reported) better performance, achievement of personal objectives and ability to undertake new tasks. ([113]) Formal training is generally associated with slightly better outcomes and better performance. Almost three out of ten respondents stressed that formal education helped them in getting a new job while almost two out of ten said that it led to a higher salary. More than 10% of respondents reported a promotion. Non-formal training also yields positive results, although normally with a slightly reduced effect. The relation between participation figures, trends and reported outcomes may seem contradictory. However, other considerations may play a role in the decision of companies and participants to undertake training, including costs and the time needed. Outcomes decreased between 2011 and the 2016 survey across the board *Chart 4.34* shows the results of both forms of training by Member State, including a breakdown by sex, where a small but clear gap in favour of men is observed.

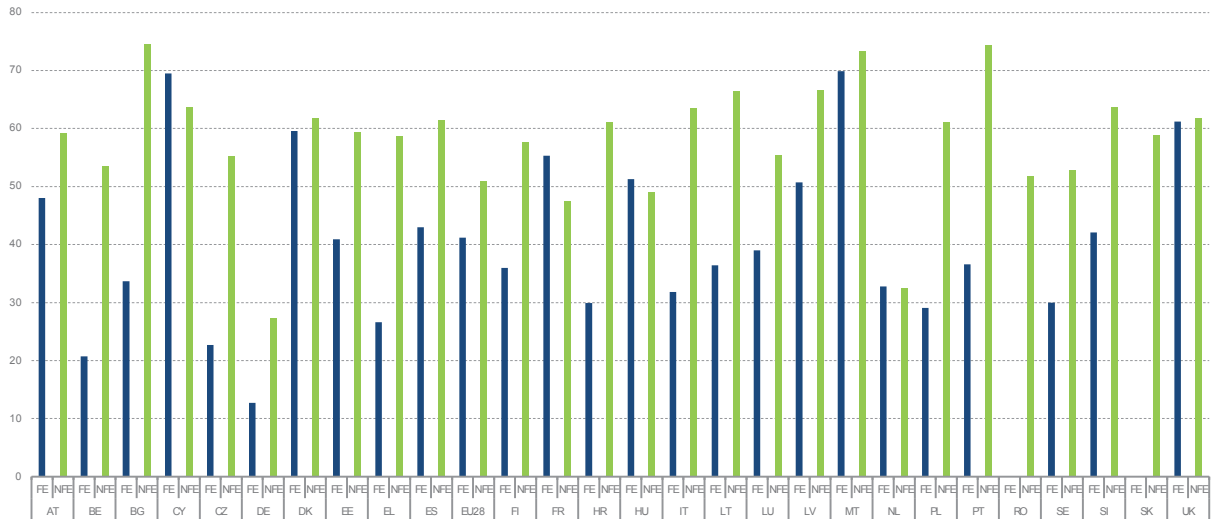
Workers undertaking non-formal learning report an increase in their performances more often than those participating in formal training. Formal training has a stronger impact than non-formal training in almost all categories. The only exception is work performance, as reported by the training participants. *Chart 4.33* shows that this trend holds in the great majority of Member States. This may help to explain why non-formal training has increased substantially in recent years. While participants may be more willing to undertake formal training, which is more easily recognisable in the labour market and leads more frequently to higher salaries and promotions, companies are more interested in improved performance by their employees, and may want to limit the risk that investment in training an employee may lead to their losing that employee to another employer who is prepared to offer a higher position and salary.

([113]) As shown in the charts, the survey asks for outcomes in terms of: better performance, salary, promotion, getting a new job, personal reasons. No outcome yet is also a possible answer.

Chart 4.34

Non-Formal training is associated with a stronger positive effect on better performances in all but four MS

Percentage of workers reporting better performance as outcome as effect of formal and non-formal training, in 2016.



Note: LU, SE, UK low reliability. Formal education for BG, CZ, DE, EL, HR, LT low reliability. Missing values for RO and SK corresponds to not publishable values because of low reliability.

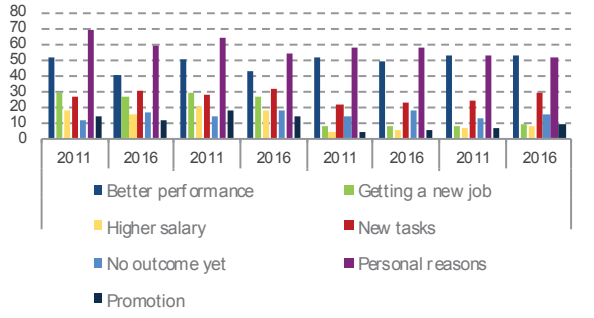
Source: AES database, extraction.

Click here to download chart.

Chart 4.33

Outcomes of adult training are similar across gender

Outcomes of education and training by type of education and training, type of outcomes and sex.



Note: The four groups of columns on the left are on formal training, while the four on the right are non non-formal training. The first, the second, the fifth and the sixth groups of columns refer to women, the other four to men.

Source: AES database, extraction.

Click here to download chart.

3.5. Investment in education and sustainability

Investment in education and training is mainly public. Public finances are the main contributor to expenditure in education and training in Europe, accounting for slightly more than 80% of the total (*Chart 4.35*). This acknowledges the importance that European welfare systems give to education, and the role of this expenditure as an investment that helps long term sustainability. Recent estimates show that the investment has a remarkable payoff: the public costs of enabling a person to attain tertiary education are offset by a public return three times as high by the time the person retires.([114])

Investment in education and training can improve the long-term sustainability of public finances in several ways. Several beneficial effects stemming from this public finance item justify the heavy involvement of states in this field. Section 3.2 showed that higher education attainment is correlated with a higher employment rate and income levels. Therefore, efficient spending can lead to a broader the tax base and a decrease in welfare expenditure (e.g. unemployment benefits and social assistance). Moreover, since ageing costs are a long-term determinant of fiscal sustainability, ([115]) investment in education and training may be worthwhile in order to extend working lives. This in turn will help to tackle workforce decline, support the sustainability of pension systems and, ultimately, also sustain public finances. ([116]) Finally, expenditure on education has been shown to reduce inequalities in Europe over the medium-term. ([117]) Inequalities weaken aggregate demand because of the higher consumption propensity of poorer people, ([118]) and because they lead to lower

([114]) OECD (2015).

([115]) European Commission (2015).

([116]) European Commission (2017) ESDE 2017, Intergenerational fairness and solidarity in Europe.

([117]) European Commission (2017).

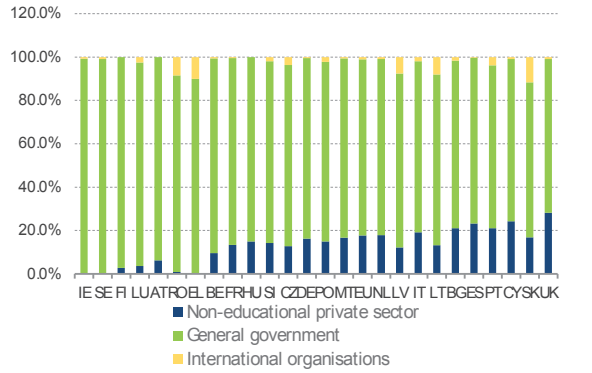
([118]) Galor and Zeira (1993).

productivity, ([119]) and misallocation of resources. ([120]) Nevertheless, while investment in education and training supports fiscal sustainability, such investment may only pay off in the longer term. In the short term, governments tend to be discouraged from investing by high levels of public debt, which can lead to a sub-optimal level of spending on this budget item. ([121])

Chart 4.35

More than 80% of educational expenditure in EU comes from general government

Funding on education by sector, excluding early childhood educational development, 2015



Note: Subsidies to households and students from other non-educational private entities are excluded. Denmark, Estonia, and Croatia not available. EU based on average of available data.

Source: Eurostat, [educ_uoe_fine01]

Click here to download chart.

([119]) Stiglitz (2012).

([120]) Alesina and Perotti (1996).

([121]) Estimates from the European Commission (2017) show that an increase in the debt-to GDP ratio by 1 pp can lead to a reduction in investment of around 0.1%.

Box 4.3: ESF education and training

The European Social Fund (ESF) is the main EU instrument to invest in people ([1]). As a budgetary instrument, its strategy is determined jointly by EU governments, the European Parliament and the Commission; and as one of the Structural Funds, it aims to support economic and social development in the EU and to reduce disparities within and between Member States and regions.

The ESF's mission is to promote high levels of employment - investments in education and training today are key for tomorrow's employability. To this end, in the period from 2014 to 2020, one-third of the Fund's total EU budget has been allocated to education and training investments (EUR 27.3 billion out of EUR 84 billion).

The Fund supports the entire education cycle from early childhood education to life-long learning, and includes higher education and vocational education and training (VET) to make sure that people get the right knowledge and skills at all stages of life. The ESF places a particular focus on equal access for disadvantaged groups. As such, the Fund supports the implementation of important EU policy initiatives such as the New Skills Agenda for Europe.

Member States have used the ESF to enhance the basic skills of low-qualified adults, to strengthen professional skills and to help inactive people get back into work. Member States have also invested in bridging the gap between education and work by supporting traineeships or internships, in updating curricula to create closer links between the education sector and industry, and in promoting particular curricula and industries to certain demographics (for example, to attract more women into STEM sectors).

Examples of progress made thanks to the ESF by the end of 2017 include the following:

- **4.5 million participants received education and/or training support;**
- **One million participants gained a qualification;** and
- **583 000 participants were in education or training;**

In addition, 1.8 million students will benefit from European Regional Development Fund projects investing in school infrastructure.

The examples below highlight how the ESF functions in practice by investing in people:

The examples below highlight how the ESF functions by investing in people.

The "Second Chance" School in Gijón, Spain, offers vulnerable young people (low-skilled, early school leavers (ESL), those who lack socio-familial support, have health problems, etc) practical and tailor-made training that focuses on skills and abilities to help them reintegrate into/remain in education or find a job. The school also offers educational support and career guidance, as well as artistic, health-related and citizen participation activities. Between 2009 and 2017, 1,379 people took part in this project, which won a prize at the Global Junior Challenge in Rome in October 2017 in the category "Technologies and work with young people from education and training in order to promote innovation and inclusion".

In Latvia, an ESF project focuses on the participation of VET students in work-based learning and work placements in enterprises. The aim of the ESF support is to increase the number of qualified VET students through participation in work-based learning (WBL) and placements (or traineeships) in enterprises. Work-based learning constitutes at least 25% of the curriculum. A tripartite agreement is signed between the student, the school and the enterprise to create an individualised plan, which sets out what has to be covered during the work-based learning. By May 2018, 1,400 enterprises, 34 vocational education establishments and 2,916 VET students were involved, with 641 students in work-based learning and 2,275 in traineeships.

Looking forward, the Commission has proposed a European Social Fund Plus (ESF+) for the 2021-2027 period, which Member States can use to build on what they have already achieved. The ESF+ will continue to provide support for improving the quality, effectiveness and labour market relevance of education and training systems. Moreover, the Fund will promote equal access to education and training at all levels, in particular for disadvantaged groups. Finally, the ESF+ will promote flexible upskilling and reskilling opportunities for all, to facilitate career transitions and help workers adjust to change.

([1]) The ESF is complemented by other funds which also contribute to investing in people albeit on a lower budgetary scale, such as Erasmus+ which supports education, training, youth and sport, with a budget of EUR 14.7 billion for 2014-2020, and InvestEU which will further boost investment, innovation and job creation for the 2021-2027 period with a budget of EUR 15.2 billion.

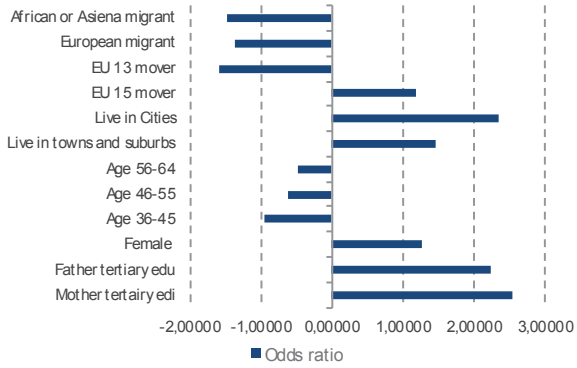
Although public funding remains the main financing source for tertiary education and training, children of tertiary-educated parents have a higher probability of having tertiary education themselves. *Chart 4.36* shows that having a parent (especially a mother) with tertiary education is correlated with a higher probability of attaining tertiary educational qualification. It is not surprising that tertiary-educated parents encourage their children to take advantage of the opportunities tertiary education affords. This is line with research evidence on the topic, ([122]) resulting in a Matthew effect (see Introduction) on tertiary education attendance. While the database used for *Chart 4.36* does not contain detailed information on the income of students' families, a good proxy is the educational attainment of both parents of the individuals. Higher educational attainments is correlated with both higher income, and with higher probability of having children attaining tertiary qualifications. Consequently, public expenditure in tertiary education may benefit disproportionately people with higher income. Yet, public investment in tertiary education remains particularly advisable in a period of fast technological change, ([123]) when a growing share of future vacancies requires higher educational attainment. ([124])

Living in more densely populated areas is associated with a higher chance of having tertiary education, Living in a city rather than in a scarcely populated area may lower the costs of attending university or other institutions providing tertiary education (in terms of reduced transport fees, lower time and opportunity costs for commuting students and less need to rent a room for those living near or willing to move close to tertiary education institutions, which are mostly located in cities). Yet this finding may also reflect the fact that many people from rural areas decide to move to the city after obtaining a tertiary education degree: cities tend to have higher productivity and salary levels for those with stronger cognitive skills, also due to agglomeration economies (Behrens et al, 2014; Bacolod et al, 2009).

Chart 4.36

Having a parent with tertiary education is associated with higher probability gaining tertiary qualifications

Odds ratio from logit regression based on LFS 2017 on people aged 25-64



Source: LFS microdata 2017.

Click here to download chart.

4. INVESTING IN LONG-TERM CARE

4.1. Introduction

Long-term care encompasses a range of services and support for people who depend on help in their daily living. Needs for long-term care result from mental or physical frailty (often but not always due to old age) or disability. The support needed includes assistance with basic 'activities of daily living' ([125]), 'instrumental activities of daily living' ([126]), or permanent nursing care.

Long-term care takes many different forms. People reliant on long-term care usually need both personal care and help with household activities. Care recipients may be living at home ([127]) or in a residential care institution. Relatives, friends or acquaintances provide informal care, as opposed to formal care by health or social care professionals. Depending on specific care needs, formal and informal care can be combined.

Adequate provision of affordable long-term care is a key principle of the European Pillar

([122]) See, among others: European Commission: ESDE 2018 on the changing world of work; Blossfeld & von Maurice, 2011.

([123]) Nelson, R.R., Phepls E.S., 1966. ; https://www.oecd.org/education/benefits-of-university-education-remain-high-but-vary-widely-across-fields-of-study.htm

([124]) https://skillspanorama.cedefop.europa.eu/en

([125]) Self-care activities that a person must perform every day such as bathing, dressing, eating, getting in and out of bed or a chair, moving around, using the toilet, and controlling bladder and bowel functions.

([126]) Activities related to independent living, such as preparing meals, managing money, shopping for groceries or personal items, performing light or heavy housework, or using a telephone.

([127]) In community-based care, recipients continue live at home, but use services provided by the community.

of Social Rights. In November 2017, the European Parliament, Council of the European Union and the European Commission affirmed the principle that "*Everyone has the right to affordable long-term care services of good quality, in particular home-care and community-based services*."

4.2. Public expenditure on long-term care

The provision of formal long-term care is uneven across Member States and unequal within countries. In those Member States with a relatively low GDP per capita, there is very little use of formal home-care; among richer Member States there is greater diversity. ([128]) Older people with low income or few assets are much more likely to use informal care than peers with more financial resources. ([129]) As regards formal care, there are some indications that providing users with allowances to purchase care (as in Italy or Germany) may be associated with more unequal use than direct service provision (as in France or Denmark). ([130])

Public expenditure on long-term care is expected to increase strongly over the next few decades. Due to population ageing, public spending on long-term care in the EU under existing national policies is projected to increase from 1.6% of GDP on average in 2016 to 2.7% in 2070 (Figure 4.3). Expenditure may increase even more, particularly if Member States with low levels of coverage extend the availability of their services and shift provision from informal to formal care. Labour costs in the sector may increase due to staff shortages. The public cost of long-term care will also depend on increases in life expectancy and on the number of additional life years spent in good health. ([131])

([128]) Eurofound (2019, forthcoming).

([129]) Ilinca, Rodrigues and Schmidt (2017).

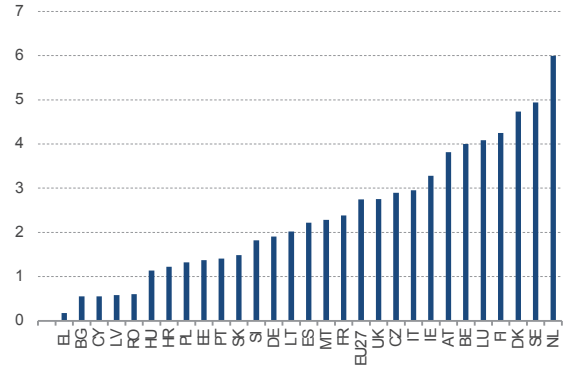
([130]) Albertini and Pavolini (2015).

([131]) European Commission and Economic Policy Committee (Ageing Working Group)(2018).

Chart 4.37

In the long run (to 2070) public expenditure on long-term care is expected to increase considerably

Public long-term expenditure as % of GDP



Source: European Commission, Ageing Report 2018.

Click here to download chart.

4.3. Policies to promote healthy ageing and employment opportunities for carers

Policies to promote healthy ageing and to ensure accessible products, services and infrastructure can play an important role in reducing reliance on long-term care. Health promotion can strengthen the autonomy of people with health limitations and thereby reduce long-term care needs. For anyone who has experienced a health incident (such as a stroke or fracture), rehabilitation policies can help avoid frailty setting in. Frail and disabled people can benefit from a broad range of policies and services, which improve their opportunities for independent living. Those with disabilities may need accessible transport, adequate - and in some cases adapted - housing ([132]), and accessible products and services. ([133])

Innovations in long-term care provision can help to contain cost growth, while improving care recipients' quality of life. Adequate home-care and community-based care can be more cost-effective than residential care for low level needs, while responding to many users' wishes to remain in their home. Greater integration of health care and social care (for example through single points of access or case and care managers) can lead to both efficiency

([132]) Eurofound (2019, forthcoming).

([133]) European Accessibility Act. Most recent text (March 2019) https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CONSIL:ST_7174_2019_INIT&from=EN

gains for care providers and improved user-experiences for persons with care needs.

Formal care and work-life balance arrangements, such as flexible work organisation and care leaves, enable people with caring responsibilities to stay in employment. Women are the main providers of informal long-term care, as for many other forms of unpaid work (including informal childcare). Providing care, especially at a high-intensity, is associated with lower outside employment and a deterioration in carers' health. ([134]) Because of caring responsibilities for parents or frail relatives, many women reduce their working hours, interrupt their careers or retire early. For the carers in question, this may have a very negative impact on their income and pension entitlements. ([135]) At a broader societal level, there may be major costs in terms of reduced employment and productivity, foregone tax revenues and social security contributions.

Integration in the labour market is a challenge not only for those providing informal care, but also for former carers. The age group 50-64 is over-represented among informal carers. At this age, it is particularly hard to find work when care commitments decrease or cease. Access to a wide range of flexible long-term care options, adjustable to preferences and needs, would at least allow carers to remain employed part-time while providing informal care and make it easier for them to return to full-time employment.

The provision of formal care and the policy context matter for employment outcomes. The employment rate among frequent carers in countries where formal long-term care is least common is 10 percentage points below that of other people. In countries where formal care is most common, this informal care employment gap is about three times lower: 3 percentage points. Multiple explanations are possible. People in employment are less likely to provide frequent informal care in countries with wider formal care availability if this implies loss of employment, as there is an alternative. In these countries, formal care is also more effectively combined with informal care in preventing loss of employment. ([136]) It is thus important for increased provision of flexible long-term care options to be combined with measures which facilitate flexible work options, such as reversible partial retirement schemes. As women continue to perform most of the informal care and housework, it is important to complement such policy measures with general policies to stimulate gender equality.

Political attention to long-term care is increasing as, despite significant differences in national systems, the challenges are similar across the EU. Analytical work is ongoing to help deepen the understanding of these challenges, including the adequacy of social protection for long-term care, the long-term care workforce, the quality and efficiency of long-term care and the economic value of informal care. To enable monitoring of the situation across the EU, the Commission together with Member States is developing a common portfolio of indicators for long-term care at EU level, which should help future analyses. These efforts will feed into a report on long-term care to be produced jointly by the European Commission and the Social Protection Committee in 2020.

5. INVESTING IN AFFORDABLE AND ADEQUATE HOUSING

5.1. Introduction

Housing as a sector and policy field is clearly distinct from social policies which aim to invest directly in people's skills and employability. Nonetheless, affordable and adequate housing is often an important factor in social investment.

Housing is closely linked to the life course, and is of particular concern to young adults. While securing and maintaining adequate housing is important for all age groups, young adults in particular consider lack of availability of accommodation as an immediate short-term risk to themselves and their families. ([137]) Early adulthood is a period when major transitions tend to follow in close succession or to coincide: studying, beginning a career, starting a family and having children. Such changes in professional and private life may trigger a need to find new accommodation. Later in life, new

([134]) Kolodziej, Reichert and Schmitz (2018); Bauer and Sousa-Poza (2015); Colombo et al. (2011).

([135]) Social Protection Committee and European Commission (2018).

([136]) Eurofound (2019, forthcoming); Walsh and Murphy (2018).

([137]) OECD (2019a).

Box 4.4: Housing cost affordability indicators

Housing costs in the EU-SILC survey include the monthly costs connected with the household's right to live in the accommodation. For homeowners, this includes any mortgage payments for the main dwelling (net of tax relief). For tenants, rental payments (gross of housing allowances) are included. For all types of occupant, the costs of utilities (water, electricity, gas and heating) resulting from the actual use of the accommodation are included. Where applicable, housing costs include taxes on the dwelling, structural insurance, mandatory services and charges (sewage removal, refuse removal, etc.), regular maintenance and repairs (including all those undertaken regularly to keep the home in good working order, but excluding those which change its performance, capacity or expected service life).

Housing cost burden is defined as total housing costs (net of housing allowances) as a percentage of total disposable household income (net of housing allowances).

The housing cost overburden rate is the percentage of the population living in a household where the housing cost burden is higher than 40%.

The at-risk-of-poverty rate after housing expenses is the percentage of the population living in a household whose equivalised disposable income minus housing costs is below the poverty threshold (set at 60% of median equivalised disposable income).

Self-reported heavy burden of total housing cost indicates the percentage of the population living in a household where the person responsible for accommodation considers their total housing cost to be a heavy financial burden (as opposed to either a slight burden, or no burden at all).

housing needs may also arise after a separation or job loss.

Housing may be a decisive factor in accessing enabling public services. ([138]) Where public services are conditional on out-of-pocket-payments, very high housing costs may become a factor limiting access. The distance or time needed to travel from home can be an obstacle to accessing public services. In some cases (e.g. schools or childcare centres) priority in the allocation of places may be given to people living near the facility.

Inadequate housing can have adverse long-term effects on health and social inclusion. Where there is a lack of affordable accommodation, households may need to share a dwelling that is not adapted to the number of people living there (in terms of rooms or available living space). Homes with major structural problems such as leaks or damp may have long-term adverse consequences on their occupants' health.

5.2. Housing affordability: concepts and main facts

Accommodation is a basic need. Since housing is a fundamental need, households' accommodation-linked expenses are to some extent 'inelastic'. If the cost of housing increases, households cannot reduce their demand indefinitely. In most European countries, the cost of covering basic needs, including housing, rose more strongly than the cost of other goods and services between 2001 and 2015. Low-income households typically spend a larger share of their income on such basic needs than do medium or high-income households. As a consequence, inequalities in 'disposable' income tend to increase after factoring in these costs. ([139])

The cost of housing is a major expense for most households and for many it is a burden. On average, households in the EU spend more than one fifth of their disposable income on housing. One in ten Europeans live in a household that spends 40% or more of its income on housing costs. If housing expenses are deducted from the households' disposable income, the population at risk of poverty in 2017 increases from 17% to 32%. Almost one third of the EU population considers housing costs to be a very heavy financial burden on their household.

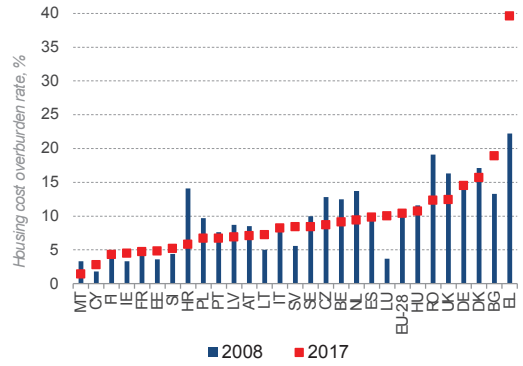
([138]) Omic (2018).

([139]) Gürer and Weichenrieder (2018).

Chart 4.38

One in ten Europeans live in a household that spends 40% or more of its income on housing costs, with large differences across Member States

Housing cost overburden rate, 2008-2017



Note: Note: Percentage of the population living in a household where total housing costs (net of housing allowances) represent more than 40% of the total disposable household income (net of housing allowances).

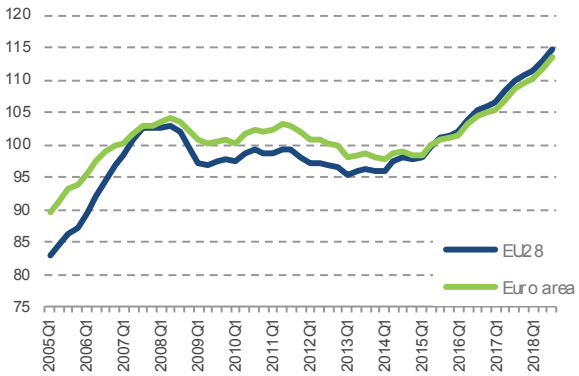
Source: Eurostat, EU-SILC (ilc_lvho07a)

Click here to download chart.

Chart 4.39

House prices in the EU have increased markedly since the start of the economic recovery

House price index (2015 = 100) - quarterly data, 2005 Q1-2018 Q4



Source: Eurostat [prc_hpi_q]

Click here to download chart.

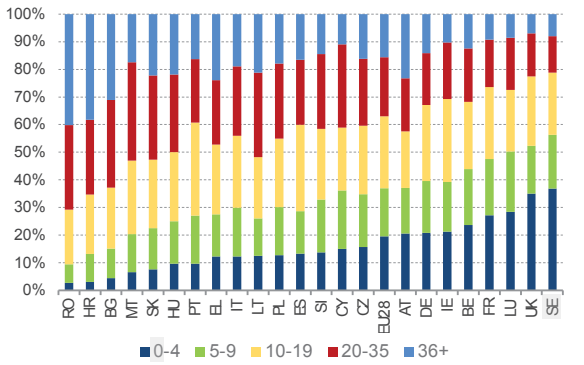
Recent improvements in the affordability of housing expenses contrast with dynamic increases in house prices. House prices in the EU have increased steadily since the start of the economic recovery and have accelerated recently. In a growing number of countries, house price trends are showing signs of possible overvaluation. At the same time, prices in countries where house overvaluation was most pressing have recently seen a moderation, linked to policy interventions, or affordability issues. ([140])

House prices and housing costs reflect different aspects of affordability. The housing costs that are the focus of this section cover the current accommodation expenses households must meet to continue to live in their dwellings, along with costs for the use, including utilities (See Box 4.4). For the affordability of housing costs, income pooling and cost sharing at the household level can play an important role. House prices, by contrast, reflect the value of real estate transactions for houses including land. Such transactions include not only houses acquired as a main dwelling, but also second homes, holiday homes or dwellings used for investment. House prices provide an indication of the state of the housing market and they are monitored ([141]) to identify potential housing bubbles, when prices move beyond fundamentals. ([142]) House prices can provide an indication of affordability for prospective buyers. They do not convey direct information on the current affordability of housing costs for substantial categories of the population, including tenants paying reduced rent or current homeowners. For tenants in the private sector, increases in house prices may only become a factor in the rent after a time lag, for example, when a new lease is signed. ([143])

Chart 4.40

The degree of housing mobility varies greatly across Member States

Population by number of years since household's installation in current dwelling, %, 2016



Note: No information for DK, EE, FI, LV, NL.

Source: DG EMPL calculations based on EU-SILC Users' database 2016

Click here to download chart.

The link between house prices and households' current housing expenses depends crucially on mobility. There are major differences between Member States in terms of how long households have lived in a dwelling since acquiring their home or starting or

([140]) [European Commission (2019c)

([141]) Indicator in the Macro-Economic Imbalance Procedure: year-on-year changes in house prices relative to a Eurostat consumption deflator, with a threshold of 6%.

([142]) Trends in house prices can be benchmarked against trends in income, rent, population, real housing investment and real long-term interest rates. Philiponnet and Turrini (2017).

([143]) Le Roux and Roma (2018).

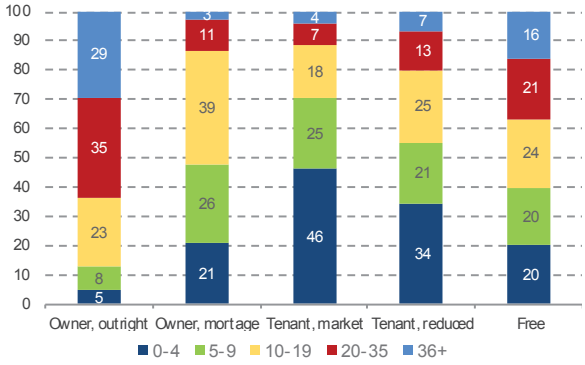
renewing their lease. Housing mobility is linked to differences in housing markets, patterns of household formation and policies such as taxes on housing transactions. Just one fifth of homeowners with a mortgage had acquired their property in the previous 5 years. Private tenants tend to be most mobile, but even among this category more than half have lived in their current dwelling for 5 years or more. This implies that households' decisions regarding housing and relevant policies typically have effects over the long-term.

High transaction costs on properties may limit mobility on the housing market. Many Member States still levy transaction taxes on immovable property. Tax rates and revenue vary substantially across Member States ([144]). Transaction taxes tend to discourage property sales and purchases. As such, these taxes can reduce volatility of house prices and likelihood of bubbles, which have a major impact on housing affordability. However, they may also restrict workers' mobility and add to imperfections in the labour market. In such cases, a shift away from transaction taxes towards recurrent property taxes would maintain a constant level of revenue while reducing the distortions caused by transaction taxes. ([145])

Chart 4.41

Tenants are the most mobile, whereas owners without a mortgage are the least

Population by number of years since household's installation in current dwelling and tenure status, %, EU, 2016



Note: No information for DK, EE, FI, LV, NL

Source: DG EMPL calculations, based on EU SILC Users' database

Click here to download chart.

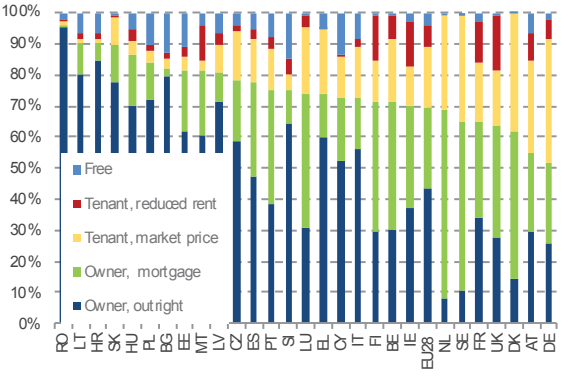
5.3. Housing cost affordability by tenure status

There are major differences between European Member states in terms of housing tenure. Across the EU, 43% of the population own their homes outright, living in a dwelling on which there is no outstanding mortgage or home loan. Several Central and Eastern European Member States have exceptionally high rates of outright homeownership. This is a legacy from the transition to a market economy. Many of these countries adopted a policy of privatisation of formerly public housing, often selling homes to tenants at relatively low prices. Private mortgage markets in these countries started to develop mainly in the 2000s, in some cases quite dynamically ([146]). EU-wide, 26% are homeowners with an outstanding mortgage or home loan. In Sweden and the Netherlands, there are many households with mortgages, which are at least partly linked to generous systems of mortgage tax relief in these countries. Across the EU, approximately one fifth of the population are tenants paying rent at private market rates. In Germany and Austria, the proportion of tenants is relatively large. These Member States each have a large and relatively strongly-regulated private rental sector. A further 6.5% of the EU population are tenants paying rent at a reduced rate, either renting social housing, or renting at a reduced rate from an employer, or renting accommodation where the rent is fixed by law. The UK, Malta, Ireland, France and Finland have relatively large proportions of reduced-rent tenants. Finally, a relatively small minority EU-wide live in accommodation that is provided rent-free, either by an employer or another private source.

Chart 4.42

The majority of Europeans are homeowners, but the rates differ strongly across countries

Population by housing tenure status of the household, by Member State, %, 2017



Note: In the Netherlands, Denmark and Sweden, tenants paying rents at reduced rates are included under the category 'Tenant, market price'.

Source: DG EMPL calculations based on EU-SILC Users' database 2016]

Click here to download chart.

([144]) European Commission (2018x).

([145]) European Commission (2015).

([146]) Hegedus, Horvath and Somogyi (2017).

Table 4.1

Tenants generally have more difficulties with housing cost affordability than homeowners

Selected housing cost affordability indicators and poverty indicators, by tenure status, 2016

	Median housing cost (%income)	Housing cost overburden (>40% income)	At-risk-of-poverty (AROP, income)	AROP (income after housing expenses)	Self-reported heavy burden of housing cost
Owner, outright	12	7	16	27	32
Owner, mortgage	15	8	8	16	29
Tenant, market	30	28	27	56	35
Tenant, reduced	23	16	30	59	36
Free	12	9	29	30	39

Note: Shading applied by column, to highlight tenure status with most favourable outcomes (green) or least favourable (red)

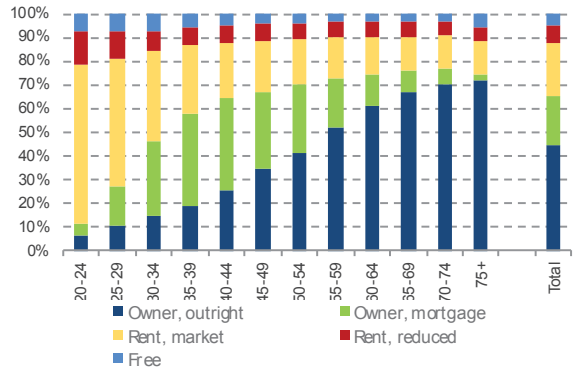
Source: DG EMPL calculations, based on EU SILC Users' database.

Click here to download table.

Chart 4.43

Housing tenure is closely linked to the life course

Tenure status by age category of the oldest person in charge of accommodation, %, EU28, 2016



Note: The data refer only to the oldest person in charge of accommodation in the household (not including any other household members living in their dwelling).

Source: DG EMPL calculations based on EU-SILC Users' database 2016

Click here to download chart.

Housing tenure is closely linked to the life course. For households headed by young householders (including single person households), renting on the private market is the most common tenure status. Rental housing does provide flexibility, which may fit well the certain demands of a mobile workforce and in some cases reflect tenants' own preferences. ([147]) For tenants, rent paid to a landlord is essentially housing 'consumption', in the sense that its cost only contributes to meeting current needs. For many households, however, homeownership plays an important role in wealth accumulation. Acquiring a home can be considered an investment, in the sense that it contributes to a right to future use of the dwelling. However, in view of strong increases in house prices, there are concerns that homeownership may become unattainable for lower income groups and for younger cohorts ([148]).

([147]) Haffner, Hegedus and Knorr-Siedow (2018).

([148]) OECD (2019b).

Across the EU, homeowners with mortgages tend to face relatively few issues with housing cost affordability. At least part of the explanation is a selection effect: the conditions for accessing such loans may include a steady income, while credit is often capped to reflect the borrower's ability to service debts. In addition, for owners with more mature loans, the recent macro-economic context has been favourable, with low interest rates allowing some renegotiation of existing loans. ([149]) Also, several Member States apply mortgage interest deductibility, which reduces the cost of debt-financed housing. In general, tax relief for homeowners tends to benefit higher income households, thereby generating an inequality-increasing effect, which may be offset by caps. ([150]) Outright homeowners generally have lower housing costs than owners with a mortgage, but more low-income households are in this category: owners without mortgages include many elderly people, who may have relatively low income from pensions.

Taxation of housing in many countries still favours homeownership. Since 2009, property taxes on real estate have increased quite substantially as a share of total revenue (6.6% in 2017 vs. 5.6% in 2009). This is mainly due to the increased use of recurrent property taxes. These are considered to be the revenue source least detrimental to growth, while the immobility and visibility of its tax base makes evasion difficult. ([151]) In all EU Member States, owner-occupied housing is taxed in a favourable way. Except in the Netherlands, the return on investment of owner-occupied housing (i.e. imputed rent) is not included in the personal income tax base. Nevertheless, in several

([149]) Le Roux and Roma (2018).

([150]) World Bank (2018).

([151]) European Commission (2018x)

Member States owner-occupiers can, fully or partly, deduct mortgage interest payments from their income for tax purposes. In addition, capital gains from the sale of a primary residence are typically exempt from capital gains tax. Moreover, recurrent property taxes, which are a kind of user charge to finance locally rendered public services, are often based on outdated housing values (for example in Luxembourg, France, Ireland and Latvia). This favourable tax treatment of owner-occupied housing produces a tax bias towards homeownership in all EU Member States. In 2017, Denmark introduced a reform to re-align property taxes with actual property values, which will come into force in 2021.

Preferential tax treatment of owner-occupied housing tends to be regressive. Favourable taxation of owner-occupied housing is mainly justified by positive spillover effects on society, such as wealth accumulation and more stable neighbourhoods. Neutrality and efficiency, however, would call for removing the preferential tax treatment of homeownership. There are also distributional reasons in favour of taxing net imputed rent to ensure the equal treatment of homeowners and renters. ([152]) Mortgage interest deductibility tends to benefit high-income earners disproportionately, as the advantage often depends on the taxpayer's marginal tax rate. ([153]) Correction for this homeownership bias and taxing net imputed rent in the personal income tax system has been shown to have no adverse effects on income inequality. ([154]) Other factors, like the distribution of homeownership across the population, contribute to the distributional impact of taxing imputed rent. ([155])

Tax expenditures for homebuyers and homeowners represent substantial amounts in certain Member States. Tax expenditures include exclusions, deductions, credits and reduced rates for specific activities or for specific groups of taxpayers. While they can be justified in some cases, they narrow the tax base and are costly in terms of revenue foregone. Moreover, they make the tax system complex, increase tax governance costs and are often not means-tested. Therefore, they do not necessarily have a positive impact on income distribution and may even be regressive ([156]). As such, these benefits are considered by some as part of 'the hidden welfare state'. ([157]) In certain countries, including Belgium, Italy, Luxembourg and the Netherlands, the monetary value of these expenditures is larger than that of housing allowances (cash transfers for tenants or owners) and housing development combined. ([158])

Tenants on the private market are a vulnerable group when it comes to affordability of housing expenses. Their median housing cost burden is the highest of all categories considered, with half of private tenants spending at least 30% of their disposable income on housing, and more than a quarter spending 40% or more. Private tenants also make up a relatively large proportion (over one quarter) of the households that are at risk of poverty based on their income. In combination with housing costs, private tenants become particularly vulnerable.

Several Member States are reforming the regulation of the private rental market, to stimulate its development and foster mobility. In countries with high rates (and subsidisation) of homeownership, and/or a large social rent sector (such as the Netherlands), there may be limited supply in the private rental sector. The Dutch government has submitted a draft law to Parliament to increase the supply of mid-priced private rental housing. In other Member States, weak protection of landlords is seen as a factor behind low investment in rental housing. In Latvia, for example, the government is trying to address such issues via a draft rental law. Regulation of rent can also result in below-market levels (particularly in urban areas), with strong incentives for sitting tenants to remain in their accommodation, and difficulties for new entrants to access the market. In this regard, the Swedish government announced plans to introduce a more flexible rent-setting system for newly constructed housing.

The role of housing allowances varies considerably across Member States. While housing allowances tend to have a progressive

([152]) See for an overview of costs and benefits of homeownership, Andrews and Caldera Sánchez (2011); Harding and Marten (2018).

([153]) European Commission (2019, forthcoming).

([154]) Figari et al. (2017) analyse the distributional effect of removing income tax provisions favouring homeownership in Belgium, Germany, Greece, Italy, the Netherlands and the United Kingdom.

([155]) European Commission (2019, forthcoming).

([156]) European Commission (2014b).

([157]) Howard (1999).

([158]) World Bank (2018).

design, favouring lower income groups, their inequality-reducing impact relies crucially on coverage, which is generally quite low. ([159])

Tenants paying reduced rent are vulnerable in terms of low income, and still sizeable housing costs. This is a fairly diverse group, including occupants of social housing along with tenants paying regulated rent. Ceilings related to income or wealth may apply to target the most needy. This may explain why this category has the highest risk of income poverty (if not housing cost burden, which is higher for tenants paying rent at private market rates).

In many countries, the demand for social housing far exceeds the supply, even despite recent initiatives. Several Member States have recently increased the supply of social housing (Germany, France Ireland), but still face sizeable waiting lists. In light of such shortages, there are debates in several Member States on allocation mechanisms, as well as rules regarding duration or succession rights. In France, the recently adopted ELAN law aims to target social housing better to those in need. The situation of tenants in high demand areas will be re-evaluated every 3 years, and a generalised scoring system will apply in large urban areas.

5.4. Housing cost affordability by degree of urbanisation

There are increasing concerns that housing in cities is becoming either unaffordable or a very large burden for low-income groups. ([160]) The high cost of housing in cities can be linked to growing demand (due to urbanisation), and limitations to expanding supply (constraints on providing new dwellings in densely built areas, including planning permissions).

Over the past decade, house price increases have been particularly strong in capital cities. During the upturn in the early 2000s and up to 2009, house prices in capital cities moved broadly in line with national aggregates. They started to diverge around 2010. ([161]) In several Member States – and particularly in their capital cities - foreign investment in housing is substantial. Foreign investments in capital cities are part of a broad pattern of looser global financial conditions, whereby prices in major cities may become more sensitive to international conditions and prices. In some cases, these effects are mitigated by exchange rate flexibility or macro-prudential tools intended to protect the stability of the financial system, for example capital conditions banks to provide mortgages. ([162]) As discussed earlier, the impact of house prices on housing expenses may be limited to certain population groups, indirect and subject to a lag. Given higher rates of housing mobility (but also more private tenants) in cities, the effects may be seen more quickly there.

Short-term rentals via on-line platforms may have an impact on private rental markets, particularly in popular tourist destinations. For homeowners seeking to rent out their property, offering accommodation to tourists and travellers via peer-to-peer platforms may be a lucrative alternative to long-term rents. There is a wide degree of variation in the offers online: some are available year-round, whereas others are only rented for a few months. Some accommodation offers refer to entire properties, others are for rooms or shared rooms. The displacement of long-term rents by peer-to-peer short-term accommodation may be particularly strong where local incomes and wages are below what is offered on the international market for short-term accommodation for example in Southern and Central and Eastern Europe, ([163]) while regulation also plays a role. However, the supply of short-term lets tends to be particularly concentrated in historic city centres. ([164]), which implies that its broader impact remains to be seen.

The affordability of housing costs in cities is subject to an urban 'paradox'. Cities are hubs of innovation, productivity and employment, with opportunities for education and training and high income. Urban areas are often the destination of choice for young adults. However, in many cities unemployment rates are higher than in towns, suburbs or rural areas, ([165]) while inequalities are larger.

([159]) Fatica and Prammer (2017); Figari et al. (2016); World Bank (2018).

([160]) Grabka, Goebel and Liebig (2019).

([161])

([162]) European Central Bank (2017), data for the Eurozone.

() Alter et al (2018).

([163]) Adamiak (2018).

([164]) Artioli (2018).

([165]) Nevertheless, cities have potentially more job opportunities and allow for wider job choices. See Eurostat (2017)

Table 4.2

Housing cost affordability and poverty are subject to an 'urban' paradox

Selected housing cost affordability and poverty indicators, by degree of urbanisation of the dwelling, EU25, 2016

	Median housing cost (%income)	Housing cost overburden (>40% income)	At-risk-of-poverty (AROP, income)	AROP (income after housing expenses)	Self-reported heavy burden of housing cost
Cities	16	13	16	31	36
Towns and suburbs	15	10	16	30	37
Rural areas	14	9	21	33	37

Note: No data for DE, NL, SI. Shading applied by column, to highlight which areas have most favourable outcomes (green) or least favourable (red)

Source: DG EMPL calculations, based on EU SILC Users' database

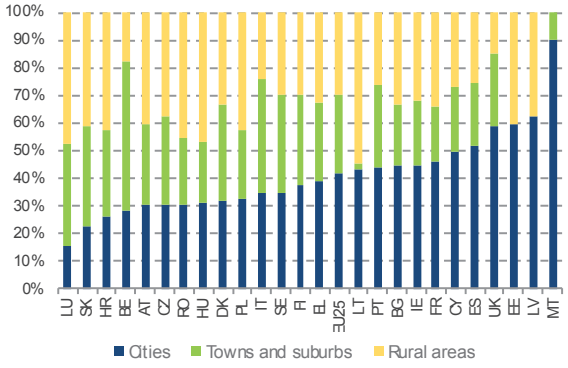
Click here to download table.

The housing cost overburden tends to be highest in cities (13% EU-wide), compared with towns and suburbs and rural areas. Income poverty tends to be highest in rural areas, where overall income and living standards may be somewhat lower. To some extent, these two factors tend to cancel each other out when the risk of poverty after housing expenses is calculated, the risk is similar in cities and rural areas, and slightly lower in towns and suburbs.

Chart 4.44

About two fifths of the population lives in cities, with major differences across Member States

Population by degree of urbanisation of the dwelling and by MS, 2016



Note: No data for DE, NL, SI.

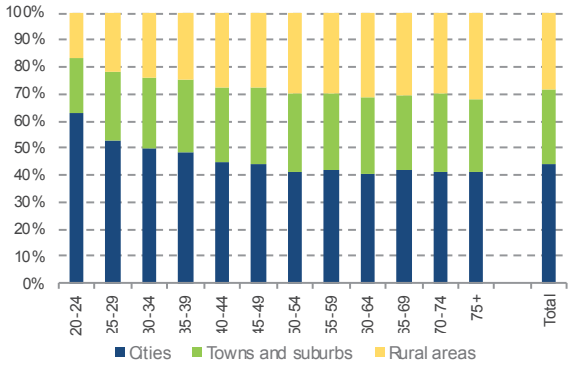
Source: DG EMPL calculations, based on EU SILC Users' database

Click here to download chart.

Chart 4.45

Households headed by young adults are more likely to be in the cities

Tenure status by age category of the oldest person in charge of accommodation, %, EU25, 2016



Note: No data for DE, NL, SI.

Source: DG EMPL calculations, based on EU SILC Users' database

Click here to download chart.

A lack of affordable housing in areas with many job opportunities may hamper labour mobility, or lead to long commutes and traffic congestion. In certain countries (including Finland) regional differences in housing costs are larger than the respective wage premiums. This may hinder mobility to the regions with the highest demand and largest job opportunities. Limited supply of rental housing may also be a factor limiting mobility within a country, even leading some jobseekers to move abroad instead (e.g. Latvia). In other cases, a high housing cost relative to income may provide incentives to commute across the border rather than to take up residence there (e.g. Luxembourg).

5.5. Housing cost affordability by household type

There are large differences between Member States in the structure of households. This applies particularly to single person households,

Table 4.3
Single adults, and particularly single parents, tend to be most vulnerable to poverty and problems with housing expenses
Selected housing cost affordability and poverty indicators, by household type, EU28, 2016

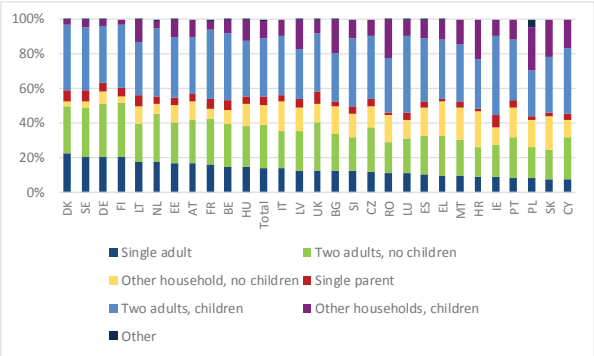
	Median housing cost (%income)	Housing cost overburden (>40% income)	At-risk-of-poverty (AROP, income)	AROP (income after housing expenses)	Self-reported heavy burden of housing cost
Single adult	26	26	26	50	28
Two adults, no children	16	9	12	19	24
Other, no children	11	6	11	32	38
Single parent	23	21	34	63	43
Two adults, children	16	10	17	30	32
Other, children	13	6	20	31	47

Note: Shading applied by column, to highlight which household types have the most favourable outcomes (green) or least favourable (red)
Source: DG EMPL calculations, based on EU SILC Users' database
Click here to download table.

which account for more than one fifth of the population in Denmark, Sweden or Germany, but less than one tenth in several Member States, including Cyprus, Slovakia and Poland. There are also major differences in the prevalence of households with three or more adults. This is linked both to children continuing to cohabit with their parents into young adulthood and to elderly persons residing with their children.

In terms of housing cost affordability, cohabiting can have advantages. On the cost side, it allows for economies of scale: the required living space or consumption of utilities may increase as more people live in a dwelling, but the increase is not proportional to the number of persons in the household. On the income side, having several adults in a household can help to pool and diversify income.

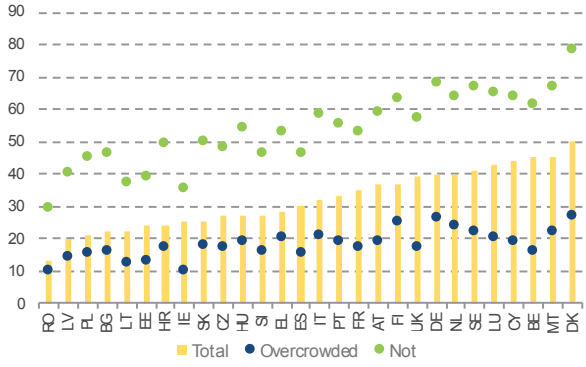
Chart 4.46
Diversity of household types in EU Member States
Population by household type and Member State, 2016.



Note: Children refer household members aged 17 or less or household members aged between 18 and 24; economically inactive and living with at least one parent.
Source: DG EMPL calculations, based on EU SILC Users' database
Click here to download chart.

One possible effect of limited availability of affordable housing is overcrowding. The overcrowding rate takes into account the number of rooms available to the household and the number of household members (see Box 4.5). The proportion of people living in overcrowded households has declined gradually, from 18.7% in 2007 to 15.5% in 2017 (EU27, not including Croatia). Bulgaria, Croatia, Hungary, Poland and Romania still have overcrowding rates of 40% or more. Not only the number of rooms, but also the size of dwellings differs strongly across Member States, and is closely related to overall living standards. Whereas an overcrowded household in Italy had a median living space of 20m² per household member in 2012, the equivalent in Romania was only 10m².

Chart 4.47
Dwelling size varies considerably across countries, including for overcrowded households
Median average living space (m2) per household member, by country and overcrowding status, 2012



Source: DG EMPL calculations, based on EU SILC Users' database
Click here to download chart.

5.6. Housing deprivation

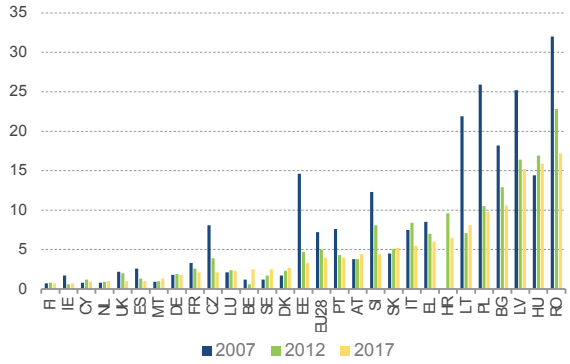
The quality of housing, in terms of the properties of the dwellings in which Europeans live, varies considerably across Member States, as well as within countries. Some aspects of housing quality are closely linked to the overall living standards of the country or households, whereas others can be seen as providing possible indications of the energy-efficiency of the building.

Severe housing deprivation rates have been declining in Europe over the past ten years. The strongest progress was recorded between 2007 and 2012 in all the Central and Eastern European Member States, followed by a period of relative stability in several countries, and a renewed decline shown in the most recent data. A few countries with low rates of deprivation have seen minor increases, such as Belgium, Sweden and Denmark, although it remains to be seen whether this is a robust trend.

Chart 4.48

Fewer Europeans experience severe housing deprivation than ten years ago

Severe housing deprivation rate by Member States, %.



Note: EU28 refers to EU27 (-HR) for 2007

Source: Eurostat, EU-SILC [ilc_mdho06a].

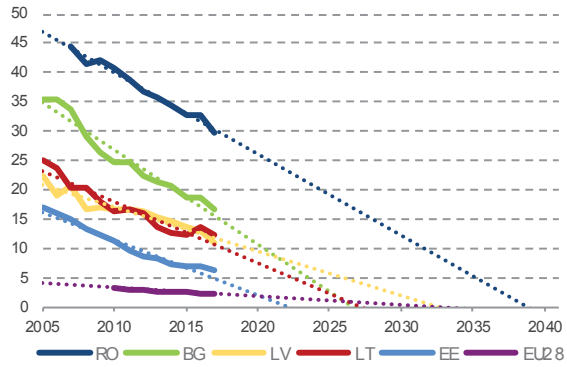
Click here to download chart.

Homes that lack basic plumbing installations are concentrated in certain Central and Eastern European Member States. In Romania, Latvia, Lithuania and Bulgaria, more than 10% of the population live in a dwelling that is not equipped with either a shower or a bath (compared with 2% in the EU28). A similar proportion of households does not have an indoor flushing toilet for the sole use of the household. In fact, dwellings that lack one tend to lack the other as well. One exception is Bulgaria, where nearly twice as many homes lack an indoor flushing toilet as lack a shower or bath. While major improvements have been observed, in line with current trends, these issues will only be fully resolved by 2040.

Chart 4.49

Homes which lack basic plumbing facilities are becoming rarer, with the remaining ones concentrated in a few Member States

Population not having indoor flushing toilet for the sole use of their household, %.



Note: Dotted lines represent linear extrapolation of trend 2005-2017 (2008 for RO, 2010 for EU)

Source: Eurostat, EU-SILC survey [ilc_mdho03].

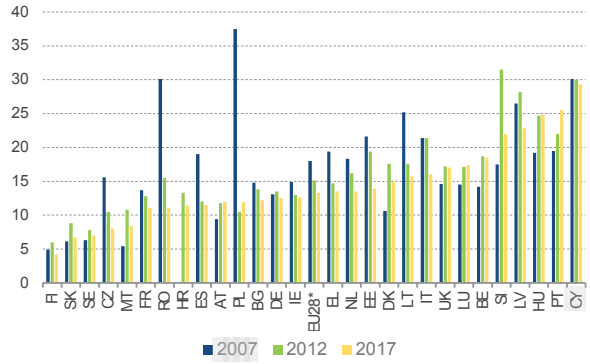
Click here to download chart.

Damp living conditions are relatively widespread across EU Member States. Approximately one in seven Europeans lives in a dwelling that has a leaking roof, or has walls, floors or foundations which are damp, or has rot in window frames or the floor. These deficiencies may have a negative impact not only on the occupants' comfort, but also on their health. ([166]) Those living in rented accommodation, and particularly those with reduced rent are especially affected by these issues. Damp living conditions may also indicate poor insulation or ventilation of the home and be considered as a proxy for low energy efficiency.

Chart 4.50

Damp living conditions are generally on the decline, but remain widespread in the EU

Population living in a dwelling with a leaking roof, damp walls, floors or foundation, or rot in window frames of floor, by MS, %



Note: For 2007, EU28 refers to EU27 (-HR).

Source: Eurostat, EU-SILC survey [ilc_mdho01]

Click here to download chart.

([166]) Eurofound (2016).

Box 4.5: Housing deprivation indicators

The **severe housing deprivation** rate is the percentage of population living in a dwelling considered to be overcrowded which also exhibits at least one of the housing deprivation measures.

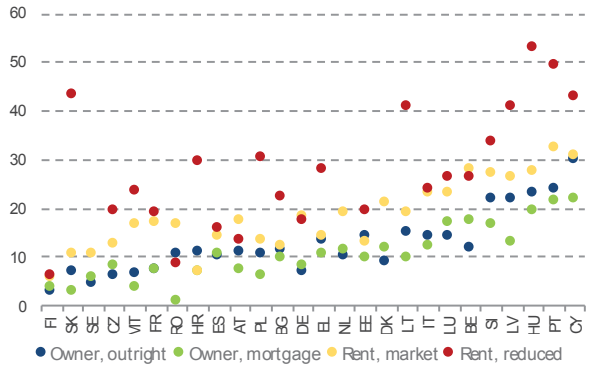
Housing deprivation is a measure of poor amenities, referring to households whose dwellings have a leaking roof, have no bath/shower and no indoor toilet, or are considered too dark.

An overcrowded household is one which does not have at least: one room for the household; one room per couple in the household; one room per single person aged 18 or more; one room per pair of single people of the same gender aged 12-17; one room per single person aged 12-17 and not included in the previous category; and one room per pair of children aged under 12.

Chart 4.51

Tenants are most likely to have damp living conditions

Population living in a dwelling with a leaking roof, damp walls, floors or foundation, or rot in window frames or floor, by tenure status, 2016



Source: DG EMPL calculations, based on EU SILC Users' database

Click here to download chart.

6. CONCLUSIONS AND POLICY CHOICES

Given major demographic and technological shifts, there is a broad consensus in Europe on the need to invest in people and social sustainability. Such investments help to prevent and mitigate social risks by enabling citizens to acquire new skills and be active on the labour market and by providing them with support during critical life course transitions (such as re-entering the labour market after studies, childbirth, unemployment or inactivity).

Investing in children and their families through affordable and quality childcare services and income support is an effective investment for the development of children and for parents' (especially mothers') employment. Despite increases in family expenditure per capita, and increases in the use of formal childcare in most Member States after 2008, there is still room for improvement.

More efforts are needed to avoid vicious cycles which could reinforce existing inequalities between children from disadvantaged and advantaged backgrounds. At present, the disadvantaged are less likely than the advantaged to use childcare services. While childcare choices are influenced by factors ranging from affordability and availability to proximity, opening hours, quality, preferences and social norms, the data analysed in this Chapter show that lack of affordability is the main reason for not making more use of formal childcare. High childcare costs for low-income families, and low progressivity in these costs, are likely to be a major cause of the existing inequality in childcare use. The analysis in this Chapter also shows that reducing childcare costs in countries where these costs are relatively high has a positive effect on the use of childcare, and, allows mothers to work more if they wish to. In countries where these costs are low, other policies focused on increasing availability might work better in enhancing childcare use and employment of mothers.

Education and training remain very important in the European Social Model. Expenditure on education and training has continued to grow over the last decade in absolute terms, although less than GDP. There is a statistically significant relationship between higher educational attainment levels on the one hand, and higher employment likelihood and higher salaries on the other. Unsurprisingly, work experience during studies has an analogous (if smaller) effect on the probability of a student becoming employed. This probability is stronger if the work experience is paid. These relationships are linked with the transformation affecting European labour markets, which increases the demand for highly qualified and experienced individuals. Thus further investment in education and training systems is recommended. Yet a signalling effect is likely to play a role in wages and employment differentials, and across Member States there are signs of overqualification. Moreover, tertiary qualification attainments are significantly correlated across generations, which raises the issue of public investment in education and training having a 'Matthew effect'.

Adult education training is increasing in EU, a positive sign likely to be linked with the spread of upskilling and reskilling policies. However, this increase is primarily driven by non-formal training, whereas formal training is reported to have higher positive outcomes in terms of better performance, salaries, tasks, promotion and the chances of finding a new job.

An increase in formal long-term care can lead to advantages both for carers and for the state. Formal long-term care reduces burdens on family or informal carers, allowing them to stay in paid employment, and so increases tax revenues. Paid carers make social contributions, thereby supporting the financial sustainability of social protection systems, while giving these workers access to insurance-based benefits and pension entitlements. Better data and indicators on this important policy area would allow further investigations and, ultimately, better policies.

Access to affordable and adequate housing is an important factor enabling Europeans to fulfil their potential in the labour market. There are concerns that housing is becoming less affordable, due to dynamic house prises, particularly in capital cities, which are major centres of productivity. This may limit opportunities for workers, particularly at the start of their careers. Very high housing costs may also prevent some households from investing in skills or making use of childcare. Affordability of housing costs has generally improved in recent years. However, there remain many Europeans who face difficulties in meeting the monthly cost of accommodation. These

include in particular tenants (both on the private market and paying reduced rent) and single persons, particularly single parents. Likewise, severe housing deprivation is generally declining in Europe, but specific groups remain at high risk (including tenants in the private rented sector). The increase in homelessness (Chapter 1) that has been observed in many countries points to severe forms of exclusion. Many Member States provide extensive support for homeowners, but there may be scope to further developing policies for more vulnerable groups.

Annex 1: Social impact investment

Social impact investment ([167]) is the use of capital flows to generate both social and financial returns, offering a way to help social organisations access suitable financing and improve their ability to deliver impact. In other words, social impact investment refers to «investments made into companies, organisations, and funds with the intention to generate a measurable, beneficial social or environmental impact alongside a financial return».

Decisions on capital investments typically take two variables into consideration: risk and financial return on investment. When the risk increases, the return required by investors generally increases as well. Social impact investment adds a new variable into the investment decisions: impact, defined as the creation of value for society. The correlation between variables is not necessarily negative – the impact and the financial returns are not mutually exclusive.

Social impact investment can be used to finance the day-to-day delivery of a specific programme, such as upfront funding to deliver an outcomes-based contract, or it can be used to help enterprises realise their mission over the long term by helping them develop their strategy and service model and expand their operations. Since the inception of the concept in 2007, its practice has spread across the globe and the interest has grown at scale. Its growth was accompanied by a decade of evolutions in the field: social impact investment emerged amid other concepts such as sustainable finance, responsible investment, and philanthropy or strategic giving.

Through the involvement of additional capital flows, social impact investment allows distributing the financial and political costs of possible failures of highly innovative social policies or initiatives. Outcome-based contracts tie at least a portion of a contractor's payment, contract extensions or contract renewals to the achievement of specific outcomes that are measurable and predictable. Under these contracts, social service providers need liquidity to operate until they generate revenues. Outcome-based contracts require a focus on the consequences of a given set of activities and outputs. The focus is on the outcome to be achieved and not on the service or good provided. This triggers innovation along the process, changing the set of behavioural incentives and driving efficiency and effectiveness.

The most representative practices of European social impact investment differ significantly from the global perspective. The latter seems to be focused on new strategies in asset identification and creation, as well as the reallocation of capital supply in favour of these socially impactful investment targets. The European perspective builds on the political and institutional concept of additionality and falls within the scope of the (participatory) re-engineering of public finance and a new generation of social policies.

([167]) This Annex provides a summary of the JRC – Science for policy report "Social impact investment in the EU." by Maduro et al. (2018).

Annex 2: Euromod simulations of the impact of the reduction of childcare costs on the use of the service and on the mothers' labour supply decisions

The aim of Annex 2 is to provide empirical evidence on how childcare costs affect the usage of formal childcare among children under 3, and the labour supply of mothers. The analysis below shows the impact of a reduction of childcare costs in a selection of countries. Two groups of countries are analysed: a group still far away from the 33% Barcelona target for children below 3 years of age, namely Hungary and Lithuania, and another group who have reached it, Finland and the Netherlands. Despite important cross-country differences, results show that decreasing childcare costs increases the use of childcare and mothers' employment

A2.1.1. Methodology

To analyse the effect a reduction of childcare costs on the use of childcare and on mothers' labour supply, the microsimulation model EUROMOD and a simplified version of the micro-econometric model is used. ([168]) In the micro-econometric model mothers of children under 3 years old are allowed to choose from a set of childcare alternatives and a set of labour supply alternatives. The three childcare alternatives refer to formal childcare, informal childcare (which is care provided by grandparents or other family members and is free of payment), and maternal care. In the simulations formal childcare corresponds to subsidised childcare, although in general formal childcare includes both subsidised and non-subsidised facilities. For all countries full-time childcare attendance (30 hours/week) is simulated, except for the Netherlands (20 hours/week). ([169]) Rationing of childcare availability and grandparents is not modelled due to the lack of information in the data. The labour supply alternatives consist of a non-market alternative, part-time and full-time working arrangements. Additionally, mothers receiving a self-employment income, pension or disability benefits are dropped to exclude other factors such as disability status, early retirement, entrepreneurship and professional choice that can affect labour supply decisions of mothers but cannot be controlled in the modelling.

The disposable income and the childcare costs faced by the selected households at each alternative of the choice set are derived using EUROMOD. EUROMOD is a multi-country European wide tax-benefit microsimulation model that simulates tax liabilities (direct taxes and social insurance contributions) and cash benefit entitlements for the household populations of EU Member States in a comparable way across countries on the basis of the tax-benefit rules in place and information available in the underlying datasets. Market incomes and income components which are not simulated due to lack of information (on e.g. previous employment and contribution history) are taken directly from the data. Simulations are based on 2015 policy rules and 2016 EU-SILC microdata (referring to 2015 incomes). For the simulation of parental fees for subsidized childcare a EUROMOD extension was added to the model. Childcare fees are estimated according to the rules in place in each country taking into account the family characteristics and financial situation. For Finland and the Netherlands income related parental fees are simulated, while for Hungary and Lithuania a daily cost including for example food, is simulated. ([170]) For the Netherlands net childcare costs are simulated, taking into account the childcare allowance for children in subsidised childcare slots.

A2.1.2. Results

The results show the effect of a reduction of the childcare costs by 50% on the use of formal childcare for four countries: Hungary, Lithuania, Finland and Netherlands. *Table A2.1* and *Table A2.2* present the change in childcare use and mothers' labour supply (respectively) for the unrestricted sample and the restricted sample. The restricted sample is limited to mothers whose partner works full-time. This selection shows the pure mothers'

([168]) As described in Figari and Narazani (2017).

([169]) The Netherlands has a very low average number of hours of childcare use in a usual week (below 20) compared to the EU average. Therefore, it is unrealistic to assume full-time childcare attendance.

([170]) For more information, see Hufkens and Verbist (2017); Hufkens et al. (2016).

Table A2.1
The average working hours and labour participation in the unrestricted (on the left) and restricted (on the right) sample

Finland	Baseline	Reform	Diff
Mother care	0.187	0.154	-0.179
Formal care	0.450	0.548	0.098
Informal care	0.363	0.299	-0.065

Finland	Baseline	Reform	Diff
Mother care	0.178	0.134	-0.044
Formal care	0.467	0.598	0.132
Informal care	0.355	0.268	-0.088

Netherlands	Baseline	Reform	Diff
Mother care	0.079	0.070	-0.009
Formal care	0.529	0.590	0.061
Informal care	0.392	0.340	-0.051

Netherlands	Baseline	Reform	Diff
Mother care	0.068	0.066	-0.002
Formal care	0.535	0.551	0.016
Informal care	0.397	0.383	-0.014

Lithuania	Baseline	Reform	Diff
Mother care	0.365	0.359	-0.006
Formal care	0.278	0.290	0.012
Informal care	0.357	0.350	-0.006

Lithuania	Baseline	Reform	Diff
Mother care	n/a	n/a	n/a
Formal care	n/a	n/a	n/a
Informal care	n/a	n/a	n/a

Hungary	Baseline	Reform	Diff
Mother care	0.439	0.437	-0.002
Formal care	0.241	0.245	0.004
Informal care	0.320	0.318	-0.002

Hungary	Baseline	Reform	Diff
Mother care	0.429	0.427	-0.002
Formal care	0.274	0.278	0.004
Informal care	0.296	0.294	-0.002

Source: European Commission, Joint Research Centre, based on the EUROMOD model.
Click here to download table.

labour supply behaviour, while considering the behaviour of the father as exogenous. ([171])

Table A2.1 shows the share of formal, informal and maternal care for the restricted and unrestricted sample of mothers in the baseline and the reform scenario (the reduction in childcare costs by 50%). The unrestricted sample refers to all selected mothers (under the above-mentioned rules). Restricted sample refers to the selected mothers whose partner is working full time. Both the use of childcare and the mothers' labour supply is higher in Finland and the Netherlands compared to Hungary and Lithuania. Finland and the Netherlands are also characterised by relatively higher childcare costs and a higher availability of childcare services. In general, the use of formal childcare is slightly higher in the restricted sample than in the unrestricted sample. A reduction of childcare cost by 50% triggers an increase in the use of formal childcare for countries where the childcare costs are relatively high (Finland and Netherlands), while in countries with relatively low childcare cost (Hungary and Lithuania) the increase in formal childcare use is very small.

([171]) Endogenising the father's labour supply would imply a larger choice set which complicates the estimation procedure but without significant improvement given that the majority of fathers is in full time employment.

The reduction of childcare costs also impacts the labour supply decisions of mothers. The table below shows the average weekly working hours and labour participation rates of the restricted and the unrestricted sample of mothers. A reduction of childcare costs by 50% leads to a significant increase in average working hours and participation rates in Netherlands and Finland but a small effect for Lithuania and Hungary. This increase ranges from around 1.7% (unrestricted sample) in the Netherlands to 3.3% (unrestricted sample) in Finland. However, these countries start from different labour market situations, and different compositions of part-time and full-time workforce. Although participation rates are around 80% both in Finland and the Netherlands, the average working hours are higher in Finland than in the Netherlands, a country where women are more likely to work part-time. In Hungary and Lithuania the change in supplied labour in absolute terms is less than 1 pp.

Table A2.2
The average working hours and labour participation in the unrestricted (on the left) and restricted (on the right) sample.

Finland					**Netherlands**				
	All sample		**Restricted**			**All sample**		**Restricted**	
	Hours	**% Participation**	**Hours**	**% Participation**		**Hours**	**% Participation**	**Hours**	**% Participation**
Baseline	26.09	0.77	27.33	0.79	**Baseline**	22.22	0.87	22.87	0.89
Reform	26.96	0.80	28.19	0.83	**Reform**	22.60	0.89	22.98	0.89
% change	3.32%	4.26%	3.17%	4.78%	% change	1.71%	1.34%	0.51%	0.21%
Lithuania					**Hungary**				
	All sample		**Restricted**			**All sample**		**Restricted (N=263)**	
	Hours	**% Participation**	**Hours**	**% Participation**		**Hours**	**% Participation**	**Hours**	**% Participation**
Baseline	18.42	0.49	n/a	n/a	**Baseline**	6.88	0.19	7.02	0.20
Reform	18.48	0.49	n/a	n/a	**Reform**	6.94	0.19	7.07	0.20
% change	0.34%	0.39%	n/a	n/a	% change	0.90%	0.89%	0.78%	0.76%

Source: European Commission, Joint Research Centre, based on the EUROMOD model.
Click here to download table.

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