CHAPTER III.2

The efficiency and effectiveness of social protection systems over the life course [1]

1. Introduction

Since 2009, the economic crisis has put social protection systems under heavier financial strain, adding cyclical shorter-term challenges to long-term challenges such as demographic ageing and socio-economic trends, in particular increasing polarisation on the labour market and changes in households' structures. In this context, as highlighted in the European Commission's 2016 Annual Growth Survey "More effective social protection systems are needed to confront poverty and social exclusion, while preserving sustainable public finances and incentives to work; Social protection systems should be modernised to efficiently respond to risks throughout the lifecycle while remaining fiscally sustainable in view of the upcoming demographic challenges".

This chapter analyses recent developments in the effectiveness and efficiency of social protection systems in Europe following a life-course approach and focuses in particular on family policies and policies that promote longer working lives. In doing so, it relies particularly on the framework for the assessment of the effectiveness and efficiency of social protection systems recently adopted by the Social Protection Committee (which was initially presented in the 2013 edition of the ESDE review) [2].

The chapter first reviews most recent developments in expenditure trends and in the orientation of social protection systems over the life course. While expenditure patterns have been affected during the crisis, notably in the second phase of the crisis when public budgets where under heavier scrutiny, it seems particularly relevant to review whether the actual shifts in expenditure patterns that took place are likely (or not) to lead to increases in the effectiveness of spending in the EU.

The chapter then focuses on two specific stages in the life cycle, namely having children and late careers. It reviews key dimensions in the design of family policies that impact on employment and social outcomes of families, with a particular focus on the impact of childcare and leave arrangements on mothers' employment. It finally reviews key dimensions in social protection systems that contribute to promoting longer working lives. The concluding section summarises the main findings.

2. Recent trends in effectiveness and efficiency of social protection systems

This section briefly presents the most recent developments in terms of social protection spending and focuses on the question of whether recent shifts in the allocation of social protection expenditure were likely to result in more effective systems over the life course [3].

2.1. Social protection expenditure trends

2.1.1. Overall expenditure trends

This section reviews overall trends relating to social protection expenditure and its orientation along the main risks (pensions, health and disability, unemployment, family, exclusion and housing) since the beginning of the crisis.

Social expenditure trends since the beginning of the crisis

At the onset of the crisis (2007-2009), social protection benefits were the main contributing factor to the stabilisation of household incomes in Europe, but their effect weakened over time as they were not designed for a prolonged recession [4] and in some countries were affected by fiscal consolidation measures following the crisis. In 2014, employment incomes started to increase again, reflecting an improvement in

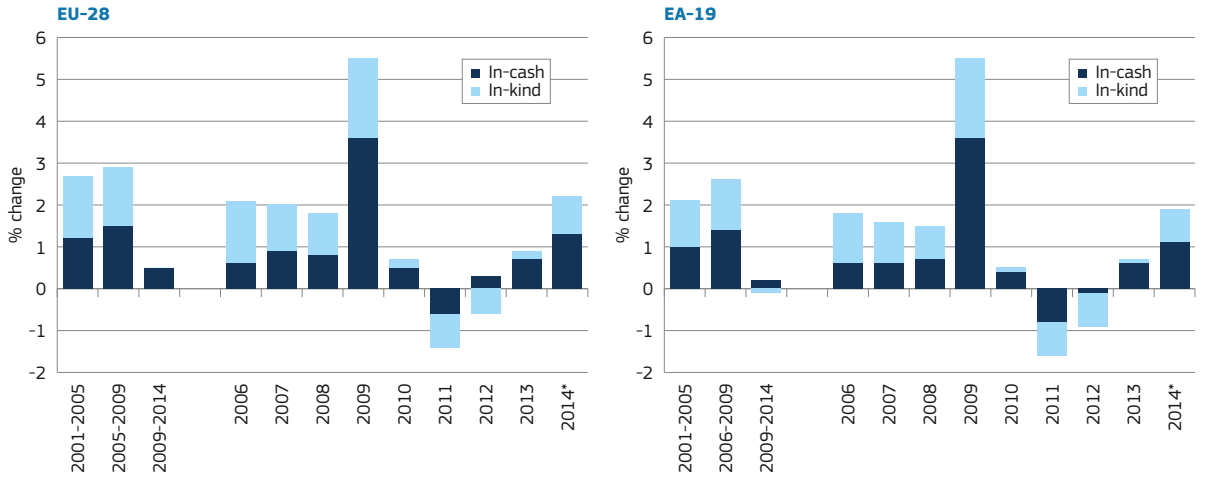
(1) By Olivier Bontout, Virginia Maestri and Maria Vaalavuo.

(2) 'Social protection systems in the EU: financing arrangements and the effectiveness and efficiency of resource allocation', Report jointly prepared by the Social Protection Committee and the European Commission Services (2014).

(3) The section builds on previous work (ESDE 2013 and 2014, 2015 SPC-FEE report).

(4) The stabilising role of social benefits is analysed in detail in the 2013 review Employment and Social Developments in Europe.

Charts 1a and 1b: Breakdown of the annual change in real public social expenditure between the contributions from in-cash and in-kind benefits (2001-2014) in the EU-28 and EA-19



Source: Eurostat (NA and DG EMPL calculations).

Notes: The values for 2014 are an estimate based on national accounts.

When no data is available in the national accounts (annual), the data was either based on national accounts (quarterly) or in a few cases the AMECO database (in the latter case by applying calculated growth rates to the data available from annual national accounts).

labour market conditions. Social benefits ([5]) continued to increase slightly in comparison to 2013 in real terms, probably due to indexation mechanisms anchored on 2013 inflation rates, which were higher than in 2014 (see below and see also Matsaganis and Leventi, 2014).

In 2014, while the economic environment improved, both cash and in-kind expenditure increased in the EU and the euro area at a quicker pace than in 2013 (see Chart 1a). The increase of in-kind benefits in 2014 only partly compensates for the declines observed between 2011 and 2012. Most Member States registered similar increases. However, in-kind benefits continued to decline in some Member States (Ireland, Greece, Spain, Cyprus, Croatia and Slovenia), while cash benefits actually recorded real increases in all Member States (except Ireland, Chart 1b).

These dynamics of social protection expenditure translated into a significant increase in the share of social protection expenditure in GDP in 2009, which subsequently slightly declined in 2010 and 2011 and slightly increased in 2012.

Chart 2: Social protection expenditure as a % of GDP (1993-2012)

Source: Eurostat (ESSPROS).

The dynamics of social expenditure in relation to developments of the economic cycle can be compared over recent years to developments in past recessions (see Chart 3) ([6]). Based on past experience, social expenditure is expected to grow above the trend when the output gap (i.e. the gap between potential and actual GDP) declines and particularly when it is negative, and to adjust downwards and return to the trend when the output gap recovers.

Compared to past recessions, the recession (in year N, 2009 in most countries) was much deeper in this crisis, and led to a strong increase in public social expenditure well above the trend. In past recessions, the output gap was generally smaller and the deviation from the trend of social expenditure was also smaller ([7]). During the following 2 years (N+1, 2010 in most countries and N+2, 2011 in most countries), the output gap improved and social expenditure approached trend levels, as one would expect.

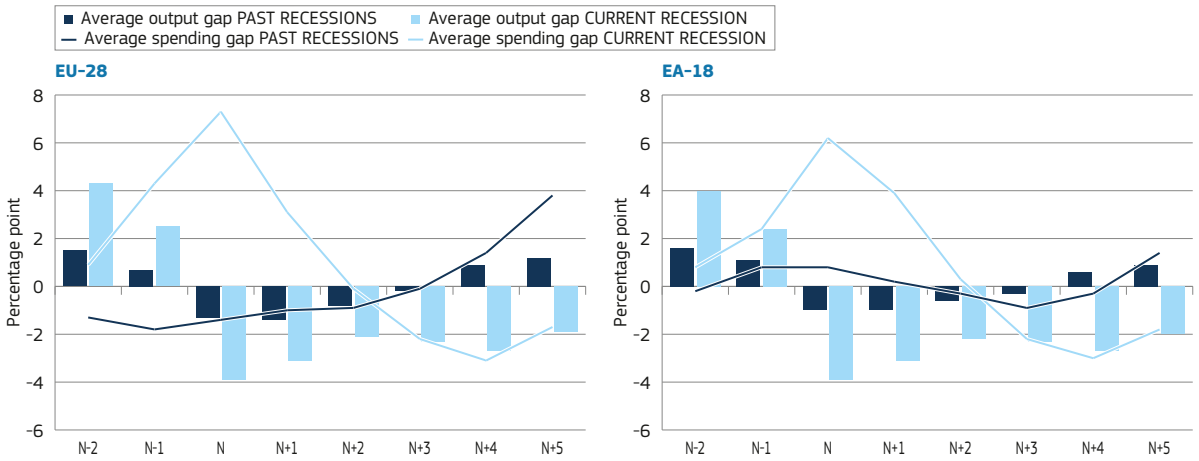
However, in 2012 and 2013 (in most countries), social expenditure grew well below the trend and went on adjusting downwards despite a worsening of the output gap, contrary to what happened in past instances of declining and negative output gap. This represents a weakening of the economic automatic stabilisation function of social protection systems in Europe and EMU, which were actually pro-cyclical in 2012. This partly reflected the exceptional scale of the fiscal consolidation needed during this crisis, which translated into a significant

([5]) Social protection expenditure generally helps to stabilise the economy in difficult economic times, since social benefits partly compensate for the decline in households' market income. Unemployment benefits typically have a stabilising function, as do means-tested benefits of various sorts (typically social exclusion, family or housing). Health and pensions expenditure play a role too, but generally to a lesser extent (since they generally increase or remain constant, while market incomes decline).

([6]) For a detailed description of the method, see 2013 review of Employment and Social Developments in Europe p. 328.

([7]) The increase in social expenditure in the first year of this crisis was more sensitive to the economic cycle, probably reflecting greater increases in unemployment levels, as well as the play of indexation mechanisms in a context of a declining inflation.

Chart 3: Deviation from the trend of public social expenditure and GDP output gap in current and past recessions EU-28 and EA-18

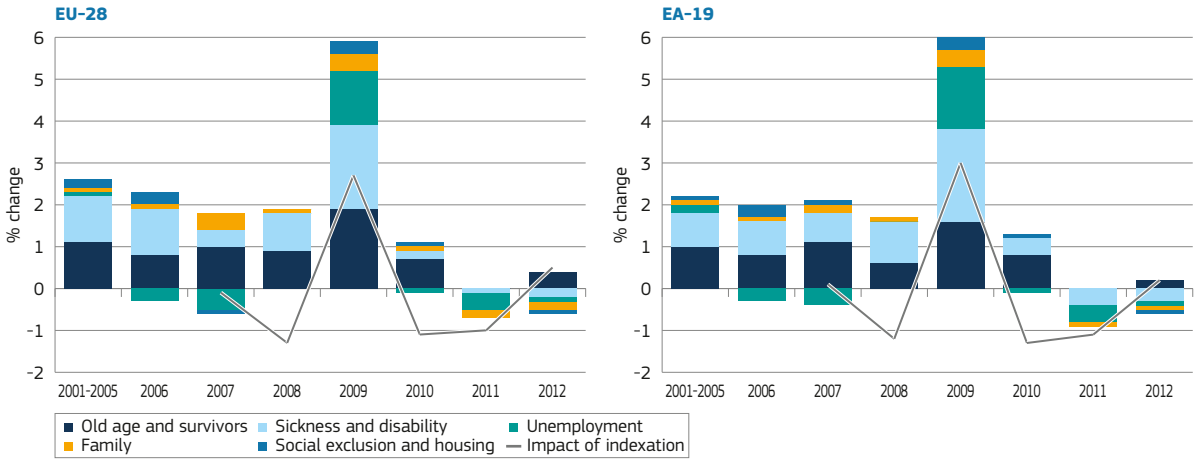


Reading notes: In the year of the recession, in the current crisis, social expenditure was about 5% above the trend in Europe, while the GDP was about 4% below its potential (output gap of -4%). Averages are unweighted country averages (since countries do not always experience a recession the same year).

Source: Eurostat, national accounts, DG EMPL calculations.

Notes: 2014 data is estimated based on quarterly data from the first 3 quarters. In the current recession, N is year 2009. Estimates of the deviation from the trend in social protection expenditures are based on a standard Hodrick-Prescott filter.

Chart 4: Overall social protection expenditure real growth trends (2001-2012) in the EU and EA



Source: ESSPROS, calculations DG EMPL, HICP used as a deflator, see Box 1. Inflation reflects the differential in HICP growth from one year to the other. When inflation is constant it has no impact, when inflation is declining it contributes positively, when inflation increases it contributes negatively.

downward adjustment in the cyclical component of social protection expenditure, and potentially a more permanent adjustment of the trend of social protection expenditure.

In 2014 (i.e. 5 years after the first recession year in most countries), the output gap improved (narrowed) and social protection expenditure started to grow again at a pace closer to its former long-term trend. This evolution may have a pro-cyclical impact even if part of the growth in expenditure can be seen as an adjustment following the downward developments of the previous 2 years.

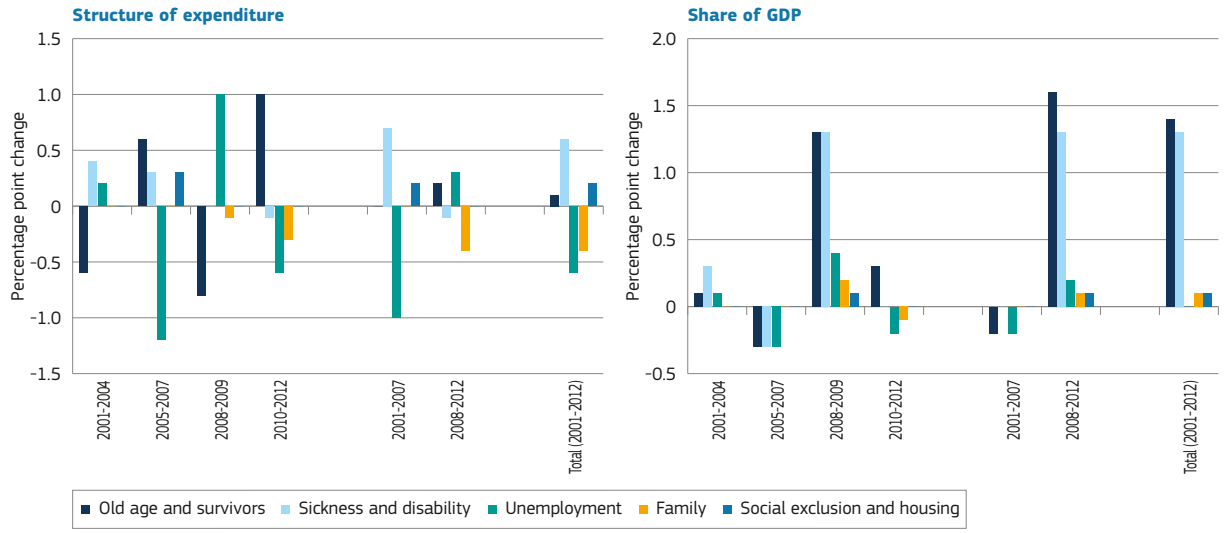
2.1.2. Shifts in the orientation of social protection expenditure in the crisis

The decline of overall social protection expenditure in real terms in 2012 affected all functions except pensions: sickness and disability, and also family and unemployment expenditure declined, while old-age expenditure started to grow again. Reforms implemented in the context of fiscal consolidation (see above) explain part of the reduction in expenditure, while indexation mechanisms based on declining inflation mostly contributed positively in 2012 (due to the lag in indexation). The increase in old-age expenditure remained mainly driven by demographic factors (more people retiring with higher entitlements), but stayed below its long-term trend due to negative developments of average pension expenditure per person aged 65 and over (see below).

In 2012, unemployment expenditure continued to decrease slightly, despite the increase in unemployment. This decline followed on from the strong decrease observed in 2011. It contrasts with the strong growth in unemployment expenditure recorded in 2008 and 2009, which reflected increases in the number of unemployed persons (see Chart 4), while the contribution of pensions and health expenditure reflected the automatic impact of indexation mechanisms in a context of inflation slow-down.

These trends translated into a shift in the orientation of social protection expenditure by functions. Over the whole period since 2001, there has been an increase in the share of health and disability expenditure (by 0.6 of a percentage point (ppt)) and of old-age and survivors pensions (of 0.1 ppt) and social exclusion and housing expenditure (of 0.3 ppt) in the overall structure of expenditure. Conversely, there has been a decline in the share of unemployment expenditure

Chart 5: Change in the composition of social protection expenditure (2001-2012) in the EU (*)



Source: ESSPROS, calculations DG EMPL.

Note: (*) 2001-2012 refers to the EU-25. The Chart presents changes in the shares of total expenditure and the changes in the shares of GDP.

(by 0.6 ppt) and a steady decline in the share of family expenditure (by 0.4 ppt), which have been mainly concentrated over the most recent period (2010-2012). See Chart 5.

These shifts in the structure of expenditure can also be observed in terms of the change in the share of expenditure as a proportion of GDP. Over the whole period 2001-2012, the increase in expenditure as a share of GDP was mainly driven by an increase in the share of pensions and healthcare expenditure and to a minor extent other functions (but not unemployment), and the bulk of this increase took place over the period 2008-2009.

2.2. Have expenditure trends during the crisis been conducive to more effective systems over the life course?

This section assesses whether during the second phase of the crisis (2010-2012), when social protection expenditure was under particular budgetary pressure in Europe, more dynamic expenditure increases were devoted to areas (social protection functions) of higher needs or by contrast to areas that were underperforming. It updates a former analysis, which focused on the initial stage of the crisis 2009-2010 (ESDE 2013).

2.2.1. A framework to review effectiveness and efficiency

The approach used in this section relies on the framework that was adopted in late 2014 by the Social Protection Committee and the European Commission [8] and was initially presented in a previous edition of this review (ESDE 2013, Chapter 6) [9].

Effective and efficient social protection systems relate to ensuring adequate outcomes, including notably adequacy of incomes and participation in the labour market. Such outcomes need to be analysed together with expenditure levels (inputs), as well as the different actual needs or risks (such as typically the share of the population that is potentially in need, for instance the unemployment rate in relation to unemployment expenditure) and the objectives of the systems.

This approach focuses on the main risks (pensions, health and disability, unemployment, family, social exclusion and housing) and for each of these dimensions (except health) links in a stylised way expenditures with key outcomes mostly related to the adequacy of the protection related to the given area and to the links with the labour market for that same given area (see Annex for the list of outcomes considered).

2.2.2. Pensions

Average developments in relation to pension expenditure in Europe (and in the euro area), have unsurprisingly been mainly driven by changes in average expenditure per (potential) beneficiary (as reflected by the number of beneficiaries of old age or survivors pensions).

The acceleration in expenditure growth in 2009 was very significant and actually mainly reflected the impact of price indexation mechanisms which are usually attached to these benefits, and generally work with a lag of 1 year (inflation from year N-1 is used to index benefits in year N) [10]. Indeed, the relatively high inflation observed in 2008 was only translated into benefit levels in 2009, where inflation was in general relatively low. This design of indexation mechanisms with a lag of 1 year, together with the specific sequence of indexation over 2008-2011, translated into an acceleration of the real growth of benefits in 2009 and a relatively low pace of real growth in 2010 and especially in 2011 [11].

[8] 'Social protection systems in the EU: financing arrangements and the effectiveness and efficiency of resource allocation', Report jointly prepared by the Social Protection Committee and the European Commission Services.

[9] Please see both documents for further details on the way the different elements are calculated, such as for instance the levels of expenditure per potential beneficiary.

[10] It can be noted that price indexation is not necessarily the target of pension indexation, as indexation rules on other indexes than price indexes are quite common among Member States (such as nominal wages, partial nominal wages, mixed indexation on wages and prices, see Ageing report 2015 for a detailed overview).

[11] This impact can account for an increase in the growth rate of expenditure which was adjusted based on inflation of around 2 percentage points in 2009 (since inflation had been particularly strong in 2008, 3.7% for the EU, and actually weak in 2009 at 1%), while it can contribute by around 1 percentage point to the lower growth rate observed in 2010 and 2011 (inflation further resumed in 2010 and more strongly in 2011, at 2.1% and 3.1%, respectively, for the EU), and contributes positively again in 2012.

Box 1: Sources and measurement of social protection expenditure

Social protection expenditure trends can be assessed in different ways and are most frequently looked at as a share of GDP or as a share of other public expenditures, or in volumes (deflated by some price index, generally HICP) or expenditure per capita. This chapter focuses on trends in volumes, since other measures actually reflect a number of other effects, such as changes in GDP levels or changes in the levels of other public expenditures. Two main data sources on social protection expenditures are used in this analysis, the European System of Integrated Social Protection Statistics (ESSPROS) and the National Accounts.

ESSPROS data on social protection expenditure is compiled by Eurostat in accordance with the methodology of the European System of Integrated Social Protection Statistics 'ESSPROS Manual 2011'. Social protection is defined as encompassing 'all interventions from public and private bodies intended to relieve households and individuals of the burden of a defined set of risks or needs, provided that there is neither a simultaneous reciprocal nor an individual arrangement involved'. As such, the field of observation of the ESSPROS goes beyond that of social security (i.e. social protection provided by governments) to include benefits provided by private social protection schemes, in so far as they have similar effects on social security for the beneficiary. Social protection expenditure includes social benefits, classified by function, and administrative and other costs incurred by social protection schemes. At the time of drafting this review, this data was available for up until 2012 and in gross terms. An exercise to provide net data as well has been the subject of pilot programmes and is now in the regulation process. The eight policy areas covered in the ESSPROS are the following: sickness/healthcare, disability, old age, survivors, family/children, unemployment, housing, social exclusion. ESSPROS also provides the information whether given benefits are provided in cash or as services directly to citizens ('in kind'), and also whether they are means-tested or not. As regards healthcare, information based on ESSPROS has been used to ensure consistency, while some information is also available from the System of Health Accounts (SHA), which also covers health promotion and community health programmes (that are not necessarily included in ESSPROS), while ESSPROS data refer to various types of schemes which are not only government expenditure.

Data on social protection expenditure from the National Accounts is in accordance with the European System of Accounts (ESA2010) and covers 'Social transfers in kind' and 'Social benefits other than social transfers in kind'. Generally speaking, the levels for total expenditure on social protection are somewhat higher than in the ESSPROS. For more details on the main differences compared with the European System of Integrated Social Protection Statistics (ESSPROS) in the way social benefits in cash and in kind are distinguished please refer to the Manual on sources and methods for the compilation of COFOG Statistics, page 65–66, Eurostat ([1]) and ESDE 2013, Chapter 6, Annex 1.

Furthermore, to reflect on trends in real social expenditure, the deflator used here is the HICP, since it allows for estimating the trend in the overall real value or purchasing power provided by social expenditure. Indeed, the HICP is a price index that reflects changes in a basket of goods and services, which appears closer to the actual expenditure on consumption of households in comparison to the deflator of household consumption from the National Accounts (which also for instance includes imputed rents). Furthermore the deflator of consumption in the National Accounts reflects changes in the structure of consumption over time and thus appears less suitable than the HICP which does not directly reflect yearly changes in the consumption structure, which are partly a reaction to price changes.

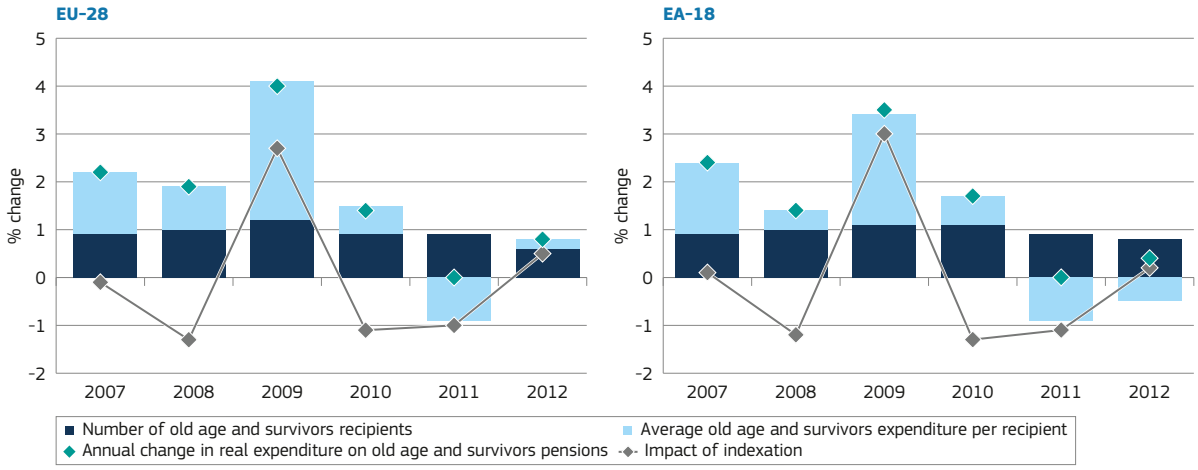
([1]) http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-RA-07-022/EN/KS-RA-07-022-EN.PDF.

Beyond the impact of indexation mechanisms, the actual remaining of the dynamics of the average pension expenditure over the period mostly remained positive, though it appears to have faded in 2011 and 2012. In other words, the structural trend towards higher average pension, which notably results from new pensioners generally having higher pensions than older ones (mainly as a result of higher average wages over their working lives due to overall growth), weakened. This weakening probably reflects different types of factors, depending on Member States, including possibly a trend towards relatively lower pensions of new pensioners (as a result of phasing in pension reforms or of an increase in the share of women in the flow of new pensioners, since there generally remains a significant gender pension gap), but is also probably the result of a softening of indexation mechanisms (or actual declines in pensions) in 2011 and 2012 as a result of the pressure on public budgets.

Such developments suggest that the design of indexation mechanisms contributed significantly to pension expenditure growth in 2009, providing a strong stabilisation of household incomes. This type of stabilisation impact is probably not the most efficient from an economic point of view since on the one hand pensioners' incomes were not the most affected by the crisis in a context of massive increases in unemployment, and on the other hand the propensity to save is relatively high among pensioners (thus reducing the stabilisation impact). Furthermore, the significant increase observed in 2009 weighted pension expenditure levels for the following years and it was followed by declines in 2011 and 2012 that go beyond inflation developments (see Chart 6).

In this respect, the design of pension indexation mechanisms would gain much if it were reviewed in order to better smooth the indexation of pensions over the economic cycle, for instance on the basis of a moving average of inflation over several years. Such a smoothing of the price indexation of pensions would keep the target of price indexation of pensions unaffected over the economic cycle and could leave fiscal room for other benefits to fully play their stabilisation role. Such a smoothing mechanism is in place in some countries though not necessarily based on price developments, while countries like Germany, Spain and Sweden have legislated an automatic balancing mechanisms that

Chart 6: Annual change in real pension expenditure (2007-2012)



Source: ESSPROS, DG EMPL calculations. HICP used as a deflator, see Box 1

Note: This graph shows the annual change in real expenditure on pensions (as a %) and the main factors that influence it: the pension expenditure per beneficiary and the number of recipients as reflected in ESSPROS. The contributions of these factors are expressed as percentage points.

Table 1: Pension expenditure trends (2010-2012) and performance in the area of pensions in 2012

		Change in real pension expenditure per population aged 65 and over (2010-2012)				Performance in 2012			
		Large negative	Small negative	Small positive	Large positive	Low	Average (-)	Average (+)	High
Pension expenditure per population aged 65 and over (in 2010, as a share of GDP per capita)	Low	**BG, EE, IE, LV,** RO	CZ, DE, HR, SK	LT	LU	**BG, EE, HR**	IE, LT, LV	CZ, DE, RO, SK	LU
	Middle (below EU average)	ES, MT, PT, SI	BE, FI, SE, UK		HU	BE, MT, SI	FI	ES, HU, PT, UK	SE
	Middle (above EU average)								
	High	DK, IT, NL, PL	FR	EL, AT	**CY**	**CY**	EL, IT, PL	AT, DK, FR	NL

Source: Eurostat, DG EMPL calculations.

Notes: Member States are regrouped in four groups according to theirexpenditure levels based on levels of pension expenditure per population aged 65+ as a share of GDP per capita in 2010 (low corresponds to levels below 61% and high above 72%) and related trends of real expenditure per population 65+ from 2010 to 2012 (large developments below -3% and above +3%). Levels of performance (on average over the main outcome dimensions identified for this function), are regrouped with values higher than +0.5 reduced standard deviation or lower than - 0.5 reduced standard deviation.

The main outcomes considered are (see details in Annex 1) : income replacement (median relative income of people aged 65 and more, aggregate replacement ratio), at-risk-of-poverty rate among the population aged 65 and more, longer and less interrupted working lives (employment rate for the population aged 55–64 and average duration of working lives).

In terms of developments between 2010 and 2012, some countries with relatively high spending and average or low performance have actually experienced a rather dynamic trend in pension expenditure, controlled for the growth in the population aged 65 and over (in particular Cyprus and to a lesser extent Greece and Austria), which does not seem to reflect higher needs as regards performance (since expenditure levels were already relatively high). Conversely, some Member States with relatively low levels of expenditure and average or low performance acknowledged large declines in their real levels of pension expenditure, controlled for the growth of the 65 and over population (in particular Bulgaria, Estonia, Latvia and Ireland). In these countries, the negative growth in real pensions does not seem to reflect needs, given the relatively low expenditure levels and low or average performance.

affect (reduce) pension indexation in the event of a fall in employment (see for instance Ageing Report 2015). The same effect has been sometimes obtained throughout discretionary measures temporary reducing or freezing pension indexation.

In 2012, several Member States experienced significantly better performance than the EU average (such as the Netherlands with high levels of expenditure, Sweden with average levels and Luxembourg with low levels of expenditure), while some experienced a significantly lower performance: Cyprus (with relatively high levels of expenditure), Belgium, Malta and Slovenia (with average levels of expenditure) and Bulgaria, Estonia and Croatia (with lower levels of expenditure). See Table 1.

2.2.3. Health and disability

As the performance of healthcare expenditure is not included at this stage within the stylised assessment framework, the analysis here focuses on its contribution to the overall evolution of social protection expenditure. Between 2010 and 2012, a number of countries with relatively high levels of expenditure experienced relatively dynamic health and disability expenditure growth (Ireland and to a lesser extent Germany, Finland and Sweden). Conversely, some Member States with originally low or average expenditure levels experienced significantly negative expenditure growth in health and disability (in particular Cyprus and Romania, but also to a lesser extent Poland, Slovakia, Greece, Spain,

Hungary, Italy, Portugal and Slovenia). This suggests that the dynamics of expenditure may have been unbalanced during the crisis in these countries. See Table 2.

2.2.4. Unemployment

Trends in unemployment expenditure reflect the change in the number of unemployed people as well as developments in average unemployment benefit per unemployed individual. Chart 7 illustrates that the cutback in unemployment expenditure observed since 2010 is mainly due to a decline in average unemployment expenditure per unemployed person of nearly 10% a year. This decline was especially strong in 2012 when the number of unemployed people, including the newly unemployed, increased.

If unemployment benefit rules were more responsive to the economic cycle (for instance by increasing duration in a downturn and reducing it when the labour market picks up again), the stabilisation function of unemployment expenditure would be higher.

As regards unemployment expenditure, most Member States experienced average performance in 2012, while some experienced lower performance than the average (notably Greece, Spain and Hungary with average expenditure levels and Bulgaria, Croatia, Lithuania and Latvia with low levels of expenditure) and some higher than the average (Sweden with average levels of expenditure and Austria, Denmark, Finland, France, Luxembourg and the Netherlands with higher levels of expenditure).

Once controlled for the change in the number of unemployed people over 2010-2012, among countries with relatively high or average spending and average performance, only Belgium has experienced more dynamic unemployment expenditure. Conversely, some Member States with low expenditure levels and low performance (Bulgaria, Croatia, Lithuania and Latvia) or lower than average expenditure and performance (Greece, Spain, Hungary, Italy, Poland, Slovakia and Romania) experienced large drops in real average expenditure per unemployed individual (see Table 3). In these countries, the decline in expenditure does not seem to reflect needs, given the relatively low expenditure levels and low or average performance.

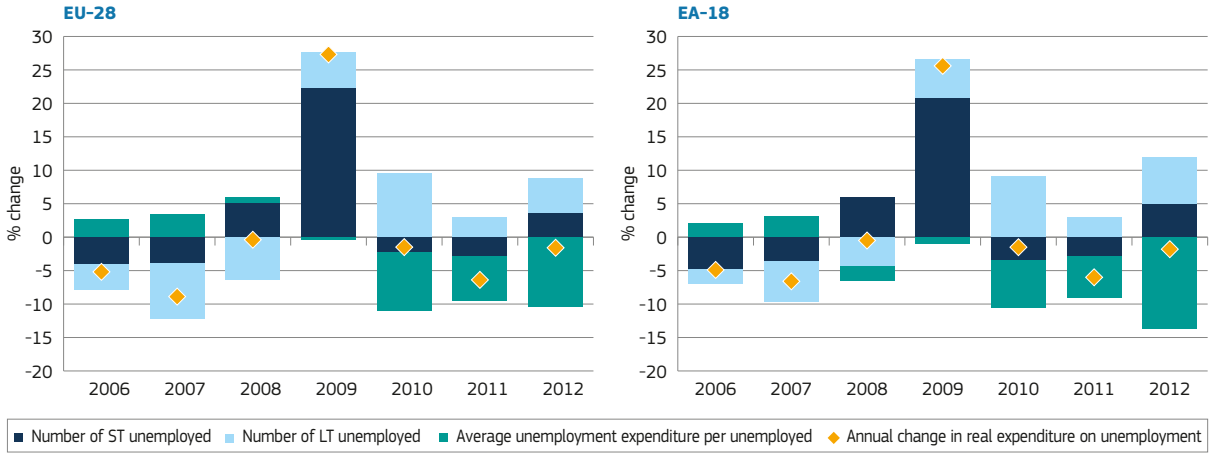
Table 2: Summary of health and disability expenditure (2010-2012)

		Change in real expenditure per capita (2010-2012)			
		Large negative	**Small negative**	**Small positive**	**Large positive**
Expenditure per capita as a share of GDP per capita in 2010	Low	CY, RO	PL, SK	EE, LT, LV, MT	BG
	Middle (below EU average)	EL, ES, HU, IT, PT, SI	AT, CZ, LU	BE	
	Middle (above EU average)		HR	UK	
	High		DK, FR, NL	DE, FI, SE	IE

Source: Eurostat, DG EMPL calculations.

Note: Member States are regrouped in four groups according to their expenditure levels, based on levels of health expenditure as a share of GDP per capita in 2010 (low below 7.5% and high above 11%) and related trends of real health expenditure from 2010 to 2012 (large developments below -5% and above +5%).

Chart 7: Decomposition of unemployment expenditure trends (2006-2012) in the EU-28 and EA-18



Sources: Eurostat, ESSPROS, LFS, DG EMPL calculations. HICP used as a deflator, see Box 1.

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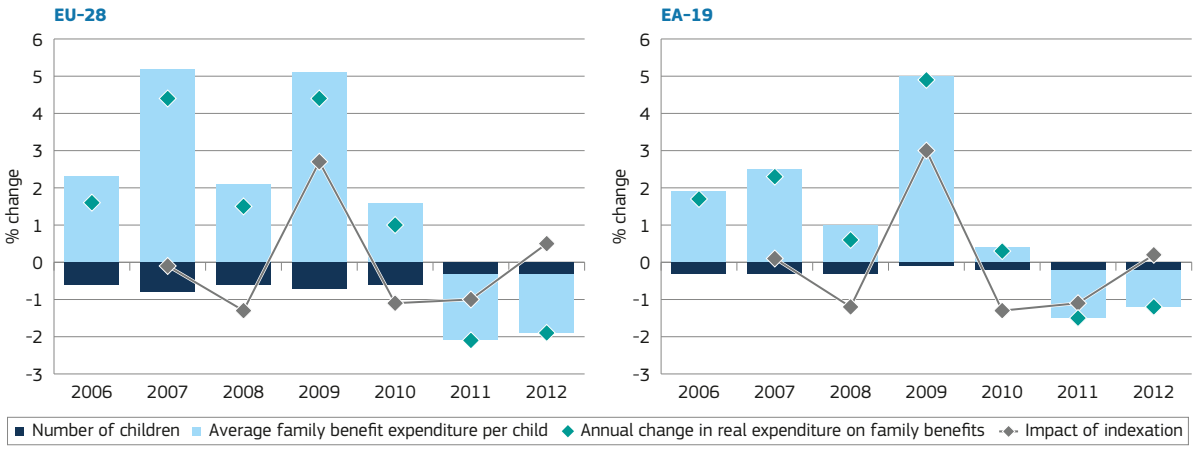
Table 3: Summary of unemployment expenditure (2010-2012)

		Change in real expenditure per unemployed person (2010-2012)				Performance in 2012			
		Large negative	Small negative	Small positive	Large positive	Low	Average (-)	Average (+)	High
Expenditure per unemployed person, as a share of GDP per capita (in 2010)	Low	**BG, HR, LT, LV, PL, SK**			EE	BG, HR, LT, LV	EE, PL, SK		
	Middle (below EU average)	CY, CZ, **EL, ES, HU, IT,** PT, **RO**	SE, SI, UK		MT	EL, ES, HU	IT, RO, SI	CY, CZ, MT, PT, UK	SE
	Middle (above EU average)								
	High	LU	AT, DE, DK, FI, FR, IE, NL		**BE**		**IE**	**BE,** DE	AT, DK, FI, FR, LU, NL

Source: Eurostat, DG EMPL calculations.

Notes: Member States are regrouped in four groups according to their expenditure levels, based on levels of pension expenditure per population unemployed as a share of GDP per capita in 2010 (low below 15% and high or above 45%) and related trends of real expenditure per unemployed from 2010 to 2012 (large developments below -10% and above +5%). Average levels of performance are based over the main outcome dimensions identified for this function, with thresholds of higher than +0.5 reduced standard deviation or lower than -0.5 reduced standard deviation). The main outcomes considered are (see details in Annex 1) : income replacement (coverage, net replacement rate in the initial period (two months) of unemployment and after 12 months of unemployment, poverty rate of unemployed persons) and reintegration into the labour market (unemployment rate and long-term unemployed rate, share of unemployed people participating in life-long learning and unemployment trap).

Chart 8: Annual change in real family expenditure (2006-2012)



Source: ESSPROS, Demo, DG EMPL calculations. HICP used as a deflator, see Box 1

Note: This graph shows the annual change in real expenditure on family benefits (as a %) and the main factors that influence it: the average expenditure per child and the number of children. The contributions of these factors are expressed as percentage points.

2.2.5. Family

As regards family expenditure, as for pension expenditure, expenditure dynamics have been mainly driven by changes in the average expenditure per (potential) beneficiary (population aged under 18). It is striking that the acceleration in expenditure growth in 2009 was also strong, notably in the euro area, which also reflects the price indexation mechanisms usually attached to these benefits. In 2011 and 2012, expenditure dynamics were very slow, with a slowing down going beyond what the standard play of indexation mechanisms would suggest, thus showing some additional downward pressure on real expenditure per child, in both the EU and the EA.

As for pensions, these reductions in real terms in 2011 and 2012 would probably not have been needed as much in a context in which the indexation mechanism of family benefits is smoothed over the cycle. See Chart 8.

While most Member States performed averagely in 2012 with respect to family expenditures, some had significantly lower performance than the average (notably Hungary with relatively high expenditure, Bulgaria, Greece, Croatia, Lithuania, Romania and Slovakia with average levels of expenditure and Poland with low levels of expenditure). At the same time, some performed significantly above the average (Belgium and Slovenia with average levels of expenditure, and Germany, Denmark, Finland, Sweden with higher levels of expenditure and the Netherlands with relatively low expenditure levels).

Countries with relatively high spending and average or low performance (Bulgaria, Hungary, Austria and Luxembourg) have all acknowledged declines in expenditure levels (controlled for trends in the number of children). Conversely, some Member States with low expenditure levels and low or average performance also acknowledged declines in family expenditure (in particular Spain, Latvia, Poland and Portugal). In these countries, the decline in expenditure does not seem to reflect needs, given the relatively low expenditure levels and low or average performance (see Table 4 below).

Table 4: Summary of family expenditure (2010-2012)

		Change in real expenditure per child (2010-2012)				Performance in 2012			
		Large negative	Low negative	Low positive	Large positive	Low	Average (-)	Average (+)	High
Expenditure per child (population aged 0-17), as a share of GDP per capita (in 2010)	Low	CZ, **ES**, **LV**, NL, **PL, PT**		IT	MT	PL	ES, IT, LV, MT, PT	CZ	NL
	Middle (below EU average)	CY, EL, LT, RO	BE, FR, HR, UK	SK		EL, HR, LT, RO, SK	CY, UK	FR	BE
	Middle (above EU average)	EE	BG, SI			**BG**		EE	SI
	High	HU	AT, DK, IE, LU	DE, FI	SE	**HU**	**AT, LU**	IE	DE, DK, FI, SE

Source: Eurostat, DG EMPL calculations.

Notes: Member States are regrouped in four groups according to their expenditure levels, based on levels of pension expenditure per population aged 18 and less as a share of GDP per capita in 2010 (low with levels below 9% and high above 14%) and related trends of real expenditure per unemployed from 2010 to 2012 (large developments below -5% and above +10%). Average levels of performance are based over the main outcome dimensions identified for this function, with thresholds of higher than +0.5 reduced standard deviation or lower than - 0.5 reduced standard deviation. The main outcomes considered are (see details in Annex 1) : relative income of households with children compared to the one of all households, poverty prevention (child poverty, child severe material deprivation and poverty reduction by social transfers), child development (share of children aged 0-3 in childcare and share of children between age three and mandatory school age in childcare), parents' labour market participation (employment rate of women aged 20-49 with youngest child below six years of age and involuntary part-time women aged 20-49).

2.2.6. Social exclusion and housing

As regards social exclusion and housing expenditure, while most Member States had average performances in 2012, four experienced lower performance than average (Greece with relatively high expenditure and Bulgaria, Latvia and Romania with low levels of expenditure) and a few significantly higher than average performance levels (Finland and France). Countries with higher than average expenditure generally experience higher than average performance (except Denmark).

Over the period 2010-2012, expenditure growth has been significantly positive only in three countries (Czech Republic with lower than average expenditure levels, Lithuania average and Finland higher than average levels). On the reverse, expenditure has significantly declined (by more than 10% in real terms) in nearly one third of Member States, including in countries with low expenditure levels and lower (Poland) or significantly lower than average performance (Romania). Furthermore, in spite of low initial levels compared to the average in 2010 and lower than average performance in 2012, expenditure also declined in real terms in some other Member States (Croatia, Italy), though to a lesser extent. In these countries, the decline in expenditure does not seem to reflect needs, given the relatively low expenditure levels and low or average performance (see Table 5).

Table 5: Summary of social exclusion and housing expenditure (2010-2012)

		Change in real expenditure (2010-2012)				Performance in 2012			
		Large negative	Low negative	Low positive	Large positive	Low	Average (-)	Average (+)	High
Expenditure per capita as a share of GDP per capita in 2010	low	**PL**, PT, **RO**	EE, **HR, IT**	BG, LV	CZ	BG, LV, RO	HR, IT, PL	CZ, EE, PT, SK	
	middle	ES, HU, IE, MT	DE, LU, SK	AT, SI	LT		ES, HU, IE, LT	AT, DE, LU, MT, SI, SK	
	high (below EU average)	EL		BE		**EL**		BE	
	high (above EU average)	CY	NL, UK	DK, FR, SE	FI		**DK**	CY, NL, SE, UK	FI, FR

Source: Eurostat, DG EMPL calculations.

Notes: Member States are regrouped in four groups according to their expenditure levels, based on levels of expenditure as a share of GDP per capita in 2010 (low below 0.5% and high above 1.1%) and related trends of real expenditure per unemployed from 2010 to 2012 (large developments below -10% and above +10%). Average levels of performance are based over the main outcome dimensions identified for this function, with thresholds of higher than +0.5 reduced standard deviation or lower than -0.5 reduced standard deviation. The main outcomes considered are (see details in Annex 1) : prevention of poverty and social exclusion (poverty rate, severe material deprivation, share of jobless households and poverty reduction), re-integration into the labour market (inactivity trap) and access to decent housing (housing cost overburden of the poor and overcrowding rate of poor people).

2.3. Main findings

Social protection expenditure grew significantly in the initial phase of the crisis, significantly contributing to the stabilisation of household incomes, before declining in 2011-2012, in a pro-cyclical manner in 2012 and resuming growth in 2013 and more significantly in 2014. Expenditure growth reflected the impact of changes in unemployment (though average expenditure per unemployed declined in real terms over the period 2010-2012), but was also significantly impacted by the design of indexation mechanisms.

The design of indexation mechanisms strengthened the stabilisation impact in 2009, though probably not in the most effective way (in particular as regards pension expenditure) and weighted on expenditure levels and structure for the following years. Over the period 2001-2012, the share of pension and health expenditure increased and that of unemployment and family expenditure declined, with significant developments over the more recent years (2010-2012), in spite of a context of high unemployment levels and weakened household incomes.

Social protection systems could be made more effective in their stabilisation function in various ways. For example, public authorities could, on the one hand, smooth indexation mechanisms of most benefits over the cycle (in particular for pensions). On the other hand, they could ensure that average expenditure levels for the active age population, in particular average unemployment expenditure per unemployed and average family expenditure per child, is less prone to decline over the cycle, for instance by making the duration of unemployment benefits more sensitive to the cycle. A better smoothing of the indexation of benefits over the economic cycle, could for instance be achieved by averaging inflation over several years. This would keep the target of price indexation of pensions unaffected over the economic cycle and could leave fiscal room for other benefits to fully play their stabilisation role.

In 2011 and 2012 when expenditure declined in real terms in Europe, more dynamic expenditure increases were not always devoted to areas (social protection functions) of higher needs. On average, there were significant declines in unemployment expenditure per unemployed person and to a lesser extent in family expenditure per child, while pension and health expenditure were relatively less affected.

Some countries with relatively high spending and low (or average) performance have actually experienced a relatively dynamic expenditure growth, such as in the area of pensions (Cyprus and to a lesser extent Greece and Austria), which does not seem to reflect higher needs (since expenditure levels were already relatively high and performance relatively low). Conversely, some Member States with relatively low levels of expenditure and average or low performance saw large declines in their real levels of expenditure, in the area of pensions (Bulgaria, Estonia, Latvia and Ireland), family (Spain, Latvia, Poland and Portugal) and social exclusion and housing (Croatia, Italy). This has also been the case in nearly half of the Member States as regards unemployment expenditure (Bulgaria, Croatia, Lithuania, Latvia, Greece, Spain, Hungary, Italy, Poland, Slovakia and Romania). In these countries, these declines in expenditure do not seem to reflect needs, given the relatively low expenditure levels and low or average performance.

3. FAMILY POLICIES SUPPORTING ADEQUATE INCOMES AND LABOUR MARKET PARTICIPATION

This section analyses the role of family policies in supporting mothers' labour market attachment and families' economic well-being. Family policies are regarded here as encompassing a variety of instruments and do not only include family expenditure ([12]).

The section first discusses the multiple objectives of these policies focussing thereafter on the Europe 2020 objectives of employment and reduction in poverty and social exclusion. It then sets out to analyse how the EU Member States compare in terms of mothers' employment and children's well-being and institutional factors related to these outcomes. The main determinants of mothers' employment and poverty – identified in previous research – are discussed and analysed empirically (with EU-SILC data). Boxes with country cases illustrate in more detail the policies and their outcomes across the European Union.

3.1. The multiple objectives of family policies

As in most policy domains, family policies include a variety of policy measures to achieve equally numerous objectives. On the instrument side, family policies entail

([12]) Some specific situations are not separately considered, such as the situation of families with children with disabilities.

cash transfers, provision of services, and tax benefits. As regards the policy goals, they vary across countries, but generally address the following policy areas: child poverty and household income, employment, children's well-being and development, fertility and gender equality (see Annex 2).

This section mainly focuses on the objectives of employment and the maintenance of household income and poverty reduction, while it is important to recognise the equal importance and interconnectedness of all these objectives.

Effective family policies are crucial for achieving two of the five policy targets set out in the Europe 2020 strategy. The objective of higher employment rates strongly relies on further increasing the female labour force participation ([13]) ([14]) ([15]), and poverty reduction depends on investing in children and widening the economic opportunities of parents ([16]). This section looks at how countries are making progress in achieving these targets and the institutional settings that support positive developments.

The Social Investment Package, and in particular the Commission Recommendation on Investing in Children (European Commission, 2013b), called on the EU Member States to support early childhood development and invest in children and families from a life-course perspective. Policy recommendations included, *inter alia*, improving access to affordable early childhood education and care, providing adequate income support such as child benefits and stepping up access to quality services that are essential to children's outcomes.

In order to achieve the Europe 2020 targets, the Country-Specific Recommendations (CSRs) adopted by the Council have advocated the provision of high-quality and affordable childcare as well as measures targeted at low income or other marginalised families (see Table A.1 in Annex 2).

Several family policy models in Europe

European countries have organised their welfare states in a number of ways, relying to various degrees on market, family and the State. The combinations of these three vary remarkably in the domain of family policies. The overall level of family expenditure is not necessarily linked to the gender equality friendliness of policies, but the countries that make the most effort to encourage the employment of mothers through paid leave and public childcare are also the countries with high female employment rates and high ratios of female earnings as a share of household income. Consequently, these also impact on the overall gender equality in society and the economic independence of women (Lambert, 2008).

Based on a Cluster analysis using the information on the major social and employment outcomes related to families, it is possible to identify some clusters of Member States ([17]). This analysis is based namely on mothers' employment rates, the employment gap between parents, the employment gap between mothers and women without children, children at-risk-of-poverty (AROP), the share of children living in households of very low work intensity, relative severe material deprivation of children (compared to adults), relative income of families with children (compared to total population) and income inequality among families with children (Chart 9) ([18]). There are obviously outliers in each group for different indicators and some countries are more central to the Cluster than others, but this type of clustering helps to illustrate the inputs and corresponding outputs across the 28 EU Member States (see Annex 2, Chart A.1. for the clustering tree and for detailed information on clusters Table A.2-A.5).

- The best outcomes in terms of both low poverty risk and high relative and absolute employment are found in Sweden, Denmark, the Netherlands and Slovenia.
- Austria, Luxembourg, Cyprus, France, Belgium, Germany and Finland also reach good outcomes, but they are more often characterised by mothers' labour market attachment being weaker.
- The worst outcomes in term of mothers' employment are found in Hungary, Slovakia and the Czech Republic. With the exception of Hungary, the child poverty rate is nevertheless lower than in the EU in general.
- The opposite is true in Lithuania, Latvia, Portugal, Poland and Romania, where mothers work, but poverty outcomes are weak.
- The worst performers in terms of both poverty results and employment are Estonia and, in Southern Europe, Bulgaria, Spain, Croatia, Greece, Italy and Malta.
- Ireland and the United Kingdom are characterised by the high share of children living in households with very low work intensity and a relatively high share of children in severe material deprivation (compared to adult population).

([13]) The gender gap in employment is still high, at 11.5 percentage points in 2014, but the European Commission has been committed to working to improve women's participation in the labour market by facilitating the work-life balance and promoting female entrepreneurship (see chapter I.1).

([14]) Supporting gender equality through mothers' greater participation in the labour market at present is likely to have long-term consequences as well. A recent study shows that adult daughters of employed mothers have a higher probability of being employed, holding supervisory responsibilities, working more hours, and earning higher wages than women whose mothers were home full-time. Mothers' work also has an equalising impact on the division of household chores: sons of working mothers take part in domestic work to a greater extent than sons of mothers who stayed at home (McGinn et al., 2015).

([15]) There is also evidence of the importance of work-family reconciliation policies for gender equality in entrepreneurship. Thébaud (2015) finds that institutional context with work-family conflict can fuel women's representation in business activities, but it also amplifies the gender segregation in entrepreneurship as these women tend to work in less growth-oriented and lower-status ventures.

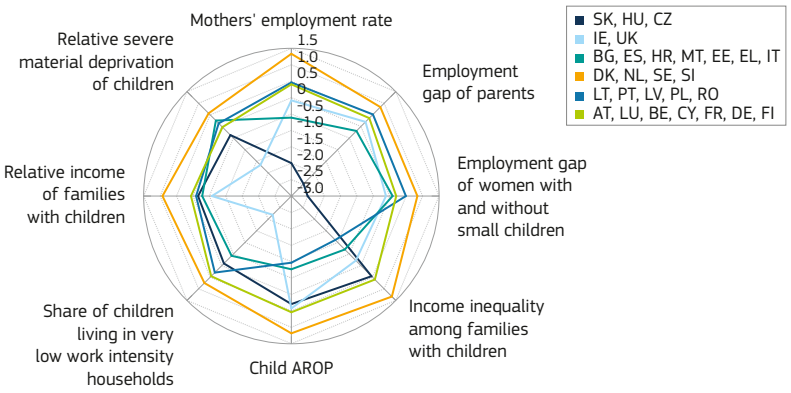
([16]) Family policies supportive of early childhood development are equally important in helping achieve the Europe 2020 target of reducing early school leaving rates below 10%.

([17]) The variables used in the Cluster analysis have been chosen to closely follow the framework for assessing the performance of countries (see Annex 1), and to focus in particular on the factors that illustrate mothers' absolute and relative labour market attachment, children's economic position in society, and also the equality of outcomes in terms of income inequality among families with children – the key interests of this section. Other indicators could be used and this would somewhat change the clustering of the countries, while some countries tend to group together even with various different indicators (such as Sweden and Denmark). However, while a simplification, clustering is an efficient way of summarizing key aspects of policies that we are mainly interested in here.

([18]) Cluster analysis was carried out using Ward's linkage in Stata. It minimises the total within-Cluster variance. At the start, all clusters are single countries, but at each step the pair of clusters with minimum between-Cluster distance is merged (see also Bambra, 2007).

III

Chart 9: Social and employment outcomes, country clusters



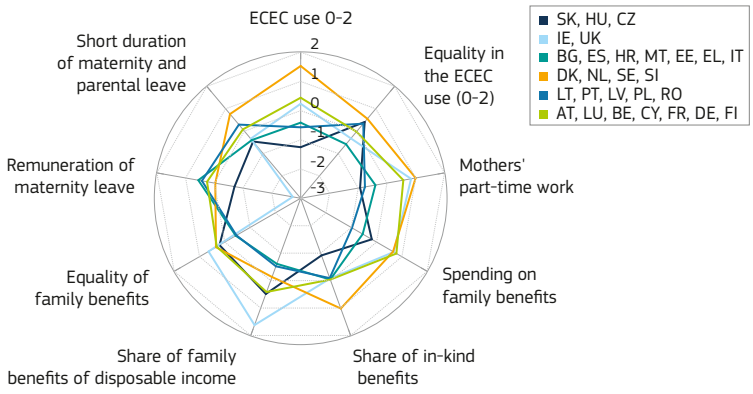
Source: DG EMPL calculations based on the most recent Eurostat data and EU-SILC 2012 [udb 2012](1).

Note: The Chart displays the Cluster standardised score compared to the EU average (the standardisation is based on the country average and standard deviation). For instance, Cluster scores show negative values when the Cluster average is below the EU average and positive values when it is above(2).

(1) The most recent data refers to the availability of the data at the time of writing in September 2015.

(2) EU-28 average for AROP for children = 20.2%, mothers' employment rate = 62.4%, employment gap between mothers and fathers of young children = 1.47 (fathers' rate divided by mothers' rate), employment gap between women with and without small children = 1.29 (rate of women without small children divided by the rate of women with small children), income inequality among families = 28.6, relative income of families (share of median income of families with children of median income of entire population) = 0.97, relative severe material deprivation (SMD) of children = 1.2 (SMD of children divided by SMD of adult population), and children living in household with very low work intensity = 9.1%.

Chart 10: Institutional characteristics, country clusters



Sources: The most recent data from Eurostat, OECD (2014), calculations based on EU-SILC 2012 [udb 2012] and European Parliament (2014)(1).

Note: Figure shows the Cluster standardised average score (standardisation based on country average and standard deviation). In addition, group scores show negative values when they perform worse than the EU and positive values when they perform better(2)(3).

(1) The most recent data refers to the availability of the data at the time of writing in September 2015.

(2) In some cases it is not clear what is to be considered a better/worse performance. This is the case for example for female part-time work, which is here considered positive as it is connected to mothers' labour market participation.

(3) EU-28 average for ECEC below 3 years = 24.6%, share of women in part-time work = 22.1%, spending on family benefits as% of GDP = 1.95, share of in-kind benefits of total family spending = 28%, duration of maternity/parental leave = 113 weeks, remuneration of maternity leave = 84.2%, equality in the use of ECEC below 3 (Q5/Q1) = 2.6, distribution of family benefits (Q5/Q1) = 1.5, and the share of family benefits of disposable family income = 9.7%.

Outcomes in terms of mothers' employment and child poverty are connected to the inputs in the domain of family policies (including relevant labour market and other social policies). Some country groups also illustrate how a combined focus on both employment and social outcomes is necessary.

Chart 10 illustrates the Cluster scores for childcare use for children below 3 years old, inequality in this use, female take-up of part-time work, maternity leave remuneration, the duration of combined maternity and parental leave, spending in family benefits, share of in-kind benefits of total family spending, and distribution of family benefits across income quintiles.

It appears that the countries with the best outcomes have a distinguished set of policies, with a significantly above EU-average share of small children using ECEC services, a high share of women working part-time, generous spending on family benefits and a relatively high share of in-kind benefits, while having below-average duration of maternity and parental leave and less generous remuneration of maternity leave.

The differentiated outcomes, i.e. low child poverty and low employment rate of mothers, in the sixth Cluster (Slovakia, Hungary, Czech Republic) also appear to be linked to the design of family policies. (Thévenon and Neyer, 2014)(19). These countries are characterised by a relatively high level of family spending that supports low-income families and weak childcare provision together with long leave periods that do not encourage women to participate in the labour market. The following sections provide a discussion on the impact of these various policies.

3.2. A better reconciliation of family life and work is crucial for increasing employment rates

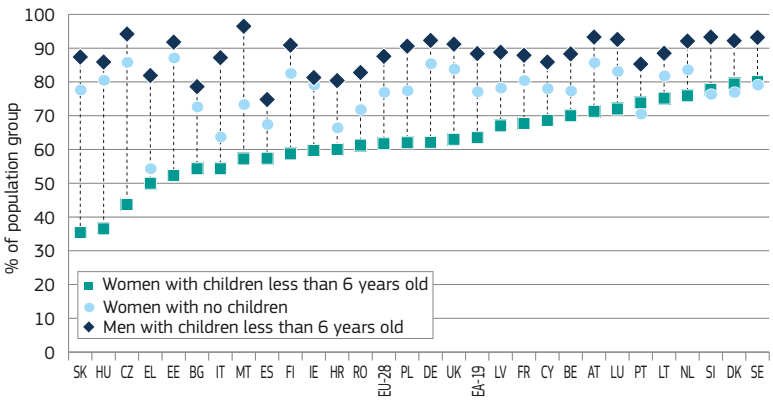
The EU2020 objective of an employment rate of 75% strongly relies on a greater involvement of women in the labour market. Policies to facilitate the combination of work and family life are essential to promoting this. Fostering gender equality and supporting female labour force participation is not only a question of fairness but also a determinant of economic performance. Indeed, investment in the employment of women boosts economic development and competitiveness. On average, across the OECD, halving the gender gap in labour force participation could lead to an additional gain of 6% in GDP (Thévenon et al., 2012).

The employment rate of 20-64 year-old women in the EU-28 increased from 58% in 2002 to 64% in 2014. In spite of this positive trend, the female employment

(19) The state-of-the-art on the multiple objectives of family policies in Europe (fertility, work, care, laws and self-sufficiency) is provided by the FP7 project FamiliesAndSocieties. This project aims to further the understanding of family development in Europe and of challenges associated with it. It examines the causes and consequences of family change, of changes in the parental and gender roles as well as in intergenerational relationships for families and for European societies at large. It analyses the impact of economic, social and policy contexts on family development, family change and the well-being of women, men (mothers, fathers) and children. To provide reliable insights into causes and consequences of family changes, the project looks at family trajectories from a life-course and comparative perspective.

rate is still significantly below that of men, which stands at 75% (see Annex 2 Chart A.2.) ([20]). During the economic crisis, the narrowing of the gender employment gap was actually mainly due to the falling employment rate of men (European Commission, 2013b; Richardson and Pacifico, 2015). However, considerable variation can be found across the EU Member States. Especially large gender gaps are found in Greece, Italy and Malta. On the other hand, in the Nordic countries and Germany, the female employment rate is high and the gender gap is low, though only Sweden has reached the 75% target for both genders (Oláh, 2015).

Chart 11: Mothers' employment rate compared to other women and fathers (people aged 25-49 years), 2013



Source: Labour Force Survey, Eurostat.

3.2.1. Motherhood a key determinant of women's employment

Women's employment patterns throughout the life cycle are strongly linked to household structures. Indeed, motherhood strongly impacts on women's participation in the labour market as well as their work-intensity ([21]) and one of the key obstacles to increasing female labour force participation is the compatibility of childrearing and employment. Labour supply models generally consider that the presence of children raises the value that women place on their time outside of paid work, while lowering women's effective labour market wages due to childcare costs (see Gornick et al., 1997). Women can adjust their working arrangements when they have children by taking leave, reducing the number of working hours or withdrawing from the labour market.

There are remarkable differences between countries in mothers' employment (Chart 11 and also Annex 2 Charts A.3-A.4). In Slovakia, where mothers of small children participate least in paid work, the employment gap between mothers and other women is more than 40 percentage points. Similar large gaps, thus demonstrating a huge potential for improvem ent in labour market participation, can be found in Hungary, the Czech Republic and Estonia. In some other Member States with overall high female employment rates, the gap is also significant: Finland, Germany and the United Kingdom stand out especially. On the reverse, in Sweden, Denmark and Slovenia this gap is negligible, which illustrates how combining work and family can be possible for mothers. For men, the opposite is usually true: fathers work more than men without children. Bünning and Pollman-Schult (2015) analyse the effect of family policies also on fathers' working patterns. Their results indicate that fathers work fewer hours than childless men if they live in countries that offer well paid, non-transferable parental leave for fathers, short parental leave for mothers and generous family allowances. The effects, however, are strongly dependent on fathers' educational levels.

Cantillon et al. (2001) have also highlighted 'multi-speed labour market participation', with highly educated women and mothers approaching the employment rate of men, while women with low education levels lag seriously behind. Labour market participation is divergently influenced by the differential offer and price of care services, alternatives to labour income (e.g. social transfers), and the generally weak job opportunities for the poorly skilled (Cantillon et al., 2001) ([22]). This means that adequately paid jobs are needed to offer an economic incentive for the low-skilled women in particular.

In 2014, mothers with high levels of education had an employment rate of 77.6% in the EU, while it was 60.8% for mothers with medium levels of education, and only 36.3% for mothers with below lower secondary education. The gap between education groups has increased from 35.8 percentage points in 2005 to 41.3 in 2014. The gap is especially large in Croatia (60.8 ppt), Belgium (56.5 ppt), Malta (53.5 ppt) and France (51.0 ppt). Improving the labour market opportunities of poorly educated women is thus particularly important both in terms of employment outcomes and reducing household poverty.

Mothers' educational level is not the only factor influencing working status. For example, age, the number of children, and the household type partly determine a mother's labour force attachment. However, the predictive effect of these characteristics varies slightly from one country to another, while the overall effect is usually similar (Chart 12, see Annex 2 for details).

In general, older and better-educated ([23]) mothers have a higher probability of working than others, as do mothers who live in households with other working adults. Moreover, any additional small child in the household reduces the probability of working, while single parenthood increases it (with the exception of the Cluster of Ireland and the United Kingdom). Non-EU background is a strong determinant of not working even when all the other characteristics are controlled for.

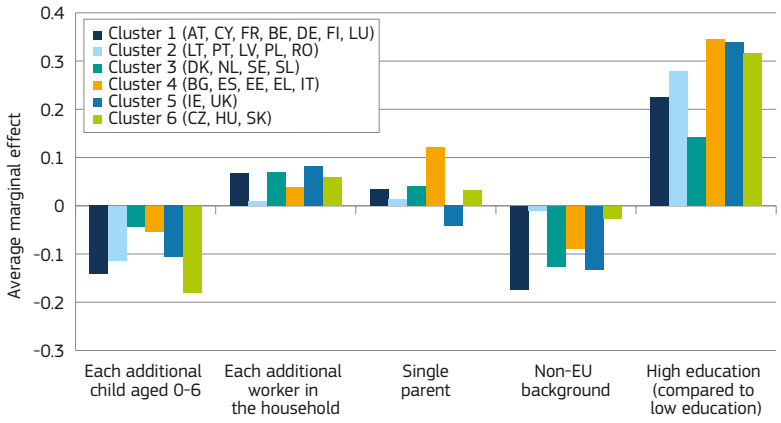
([20]) The gender gap is even larger when *full-time* equivalent is looked at. Few Member States (mainly the Nordic and Baltic countries) succeed in combining high female employment rates with a low gender gap in hours worked (European Commission, 2013b) (for mothers with young children, see Chart 15).

([21]) For an extensive literature review on the explanations for women's employment patterns, see Steiber and Haas (2012).

([22]) On the other hand, Keck and Saracena (2013) note that there is no additional 'educational penalty' for mothers with low levels of education, rather the educational differences we witness in mothers' employment just reflect the general educational differences in employment. However, this does not mean that policy impacts should not be evaluated from the perspective of socio-economic differences; education may still strongly influence the outcomes of various policies.

([23]) In Cluster 3, the marginal effect of higher education is lower than in other clusters. This result, which means that mothers' employment is less affected by differences in education, is in line with the finding by Gutiérrez-Domènech for Sweden (2005). Gutiérrez-Domènech concludes, and this would also apply to the result regarding the entire Cluster 3, that in Sweden generous public provision of childcare enables mothers with low qualifications and earnings potential to work after childbearing.

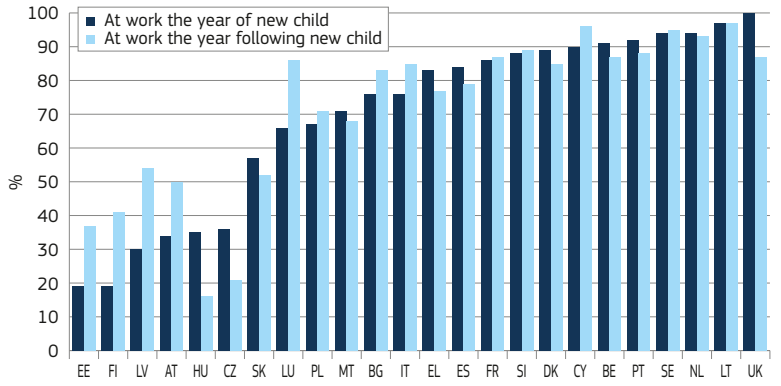
Chart 12: Personal characteristics and labour market attachment (results from regression based on EU-SILC 2006-2012)



Source: DG EMPL calculations based on EU-SILC 2006-2012 [udb 2006-2012].

Notes: Chart 12 presents the average marginal effects when all other personal characteristics are held constant. Only mothers aged 25-49 with children below the age of 6 are considered. See the full regression analysis model in Annex 2 Table A.10. All shown variables are statistically significant (at level P<0.05) with the exception of non-EU background in Clusters 2 and 6 and single parenthood in Cluster 2. No data for Croatia or Malta.

Chart 13: Mothers at work as a share of mothers who were working before the arrival of a new child (average 2007-2012)



Reading note: Longitudinal EU-SILC data with pooled data from 2007 to 2012 makes it possible to follow the same individuals and families over a period of 4 years and to look at the impact on employment of having small children (1). It is important to use the longitudinal data to see the changes in employment and incomes caused by changes in family composition, which is closer to a causal explanation of the dynamics.

Source: DG EMPL calculations based on EU-SILC 2010, 2011 and 2012 longitudinal data [udb 2010-2012].

Notes: Reflecting the design of EU-SILC survey, maternity or parental leave is considered as work, home care allowance is not. Romania and Croatia are not shown due to the small number of observations. No data for Germany and Ireland.

(1) In the next part, the same data is used to look at the impact on poverty entry.

Having a child can translate into very high drops in the employment rates of mothers, such as in Estonia and Finland (of around 80 ppt), but also Latvia, Austria, Hungary and the Czech Republic (of around 65 to 70 ppt, see Chart 13). In the two latter countries, the attachment to the labour market further decreases 1 year later, while in the other countries it increases. On the reverse, in some Member States, the decline is much lower, in particular not more than 10 ppt (United Kingdom, Lithuania, the Netherlands, Sweden, Portugal, Belgium, Cyprus and Denmark).

In respect of mothers' employment decisions, Gornick et al. (1997) differentiate between public policies that i) strengthen mothers' labour force participation at the time of childbirth, ii) increase paternal involvement in childcare, iii) increase the supply or reduce the cost of non-parental childcare and iv) extend the time children are in public-funded schools. In addition, income transfer rules that may lead to benefit reductions due to earnings, policies that encourage part-time work, and marginal tax rates or tax treatment of spouses are likely to affect mothers' labour force participation (24). These family policies, or institutions, will be discussed below (25).

3.2.2. Paid maternity leave strengthens link to labour market

Paid maternity and parental leave are important in ensuring parents' stronger links to the labour market after childbirth; they offer job protection as well as financial support during the break from work (26). Boeckmann et al. (2014) find that well-paid parental leave, subsidised childcare services, and cultural support for maternal employment are associated with smaller gender gaps in employment rates and smaller gaps in working hours between mothers and childless women. On the other hand, extended leave, notably when unpaid, is associated with larger gaps. However, there is no clear consensus on the optimal length of leave arrangements as regards the gender employment gap, female wages and mothers' working patterns.

There is evidence that increases in participation in paid work diminish with length and benefit levels of the parental leave scheme (Akgunduz and Plantenga, 2013; Rønsen and Sundström, 2002). An OECD study (Thévenon and Solaz, 2013) shows that paid leave beyond 2 years keeps parents away from the labour market for longer and reduces their employability. In addition, long periods of leave can lead to stronger occupational segregation, lower future earnings, and unequal division of domestic work (Akgunduz and Plantenga, 2013; Rønsen and Sundström, 2002; Beblo and Wolf, 2002). A Swedish study shows that women with leave over 16 months were less likely to experience an upward career transition once back at work even after controlling for

(24) The impact of fiscal policies in the EU countries on second earners is studied in Rastrigina and Verashchagina (2015).

(25) In addition to having an impact on mothers' working patterns in the first place, institutions also affect the consequences of those patterns for earnings later in life. The findings by Stier et al. (2001) for 12 industrialised countries suggest that institutional arrangements mediate the costs connected to women's part-time and intermittent employment: weaker state support for mothers' employment is associated with higher wage penalties for employment discontinuity.

(26) As highlighted by Galtry and Callister (2005), parental leave is a complex policy area and includes much more than just the issue of mothers' employment. Possible other concerns include health protection of mothers, the development of the child, prenatal care and gender equality within families.

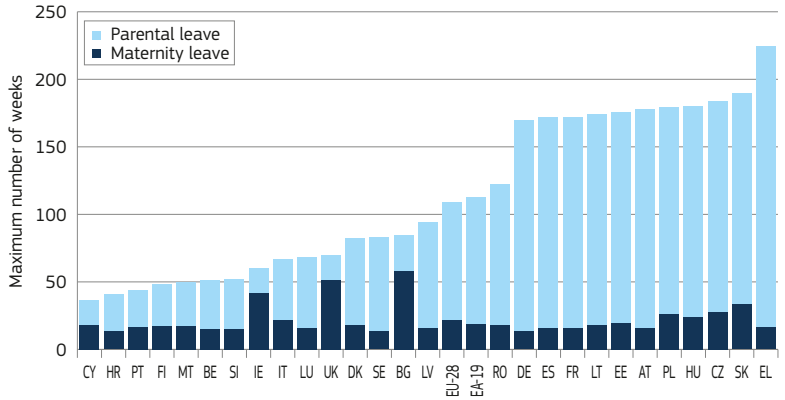
selectivity in leave durations (Evertsson and Duvander, 2011).

On the other hand, studying the 2004 French reform increasing the incentive of taking up a – relatively short – 6 months parental leave after maternity leave, Joseph et al. (2013) found that full-time leave did not have a discernible effect on the employment or wages of parents.

The average length of maternity leave in the EU is 23 weeks. Directive 92/85/EEC requires all Member States to provide a minimum of 14 weeks maternity leave at least at level of sick pay. Longer leave periods are more typical in Eastern European countries (27 weeks on average). According to a European Parliament study (2015), there seems to be a negative correlation between the duration and compensation of maternity leave: the longer the leave, the lower the benefit.

The average duration of parental leave is 86.9 weeks (Chart 14). Directive 2010/18/EU requires Member States to guarantee to all male and female workers a minimum of 4 months of parental leave, with at least one month on a non-transferable basis. Remuneration is left up to the Member States. In some countries, the duration of parental leave depends on the take-up of one parent ([27]). In addition, some countries have attempted to promote gender equality through special entitlements for fathers or non-transferable leave periods for each parent. The variance in duration of parental leave is much bigger than for maternity leave. The shortest leave can be found in Cyprus (18 weeks) and the longest in Greece (2 years per parent in the public sector). In many countries parental leave is unpaid (Ireland, Greece, Spain, Cyprus, Malta, the Netherlands, United Kingdom) and in the rest the payment rate varies considerably ([28]). An earnings-related scheme is likely to attract fathers more and therefore fosters gender equality (see Chart 14 for an overview of maternity and parental leave).

Chart 14: Duration of maternity and parental leave



Sources: European Parliament (2015) and OECD (2014).

Notes: The length of parental leave indicates the maximum amount of weeks that both parents are entitled together. The Netherlands is not included in the figure: in the Netherlands maternity leave is 16 weeks, but parental leave needs to be taken part-time and the length is determined by the number of hours worked.

3.2.3. Part-time employment provides flexibility but can be involuntary

Part-time employment is an important feature of female participation in the labour market. A third of women work part-time compared to 1 man in 10. Participation in part-time work is key to understanding female labour market participation and related recent trends. Indeed, when employment rates are measured in full-time equivalent, they have increased at a much slower pace. This way of measurement shows that not only is the gender gap much higher, but the female employment rate basically stagnated between 2006 and 2012 (European Commission, 2010a: 6; European Commission, 2013b: 178).

While the higher share of part-time work among women also reflects the multiple roles that women have ([29]), part-time work may not be a sufficient source of income and it can lead to weaker pension entitlement (Bettio et al., 2013), inferior training opportunities, as well as poorer career prospects (European Commission, 2010a: 9-11). Public policies may play a role when part-time work is a result of societal or institutional barriers to full-time work and not a voluntary choice ([30]). According to Eurostat, almost a third of part-time workers in the European Union is involuntarily in this arrangement (also Veliziotis et al., 2015). A total of 27.1 % of women working part-time declare care responsibilities as the main reason for working part-time ([31]).

Despite the problems associated with part-time work, this form of working can contribute to mothers' stronger participation in the labour market. Eurofound's Quality of Life study (2014) underlines that an overwhelming majority of mothers would be willing to work if they could better choose their working hours. More than half of the inactive mothers prefer to work part-time, while most mothers and almost half of the fathers in full-time jobs would like to work fewer hours. Single mothers, on the other hand, would prefer to increase their working hours. Our regression analysis also confirms that at the institutional level, women's part-time work is connected to a mother's higher probability of working (see Annex 2 for a full description of the model) ([32]).

([27]) For example in Croatia, Italy and Austria parental leave is extended if the father takes leave as well (in Croatia and Italy, a father needs to take leave of 3 months for the parents to be entitled to the extension, while in Austria there are various options, but the leave is shorter if it is not shared) (European Parliament, 2015).

([28]) A more detailed description of the variation and developments in maternity, paternity and parental leave systems in the OECD countries can be found in Thévenon and Solaz (2013).

([29]) From the employers' side, part-time employment can be seen as beneficial since it can reduce absenteeism, make it possible to retain a skilled workforce, and increase their flexibility. During an economic crisis, part-time work is also a way to avoid redundancies, and both men and women work more part-time now than before the crisis.

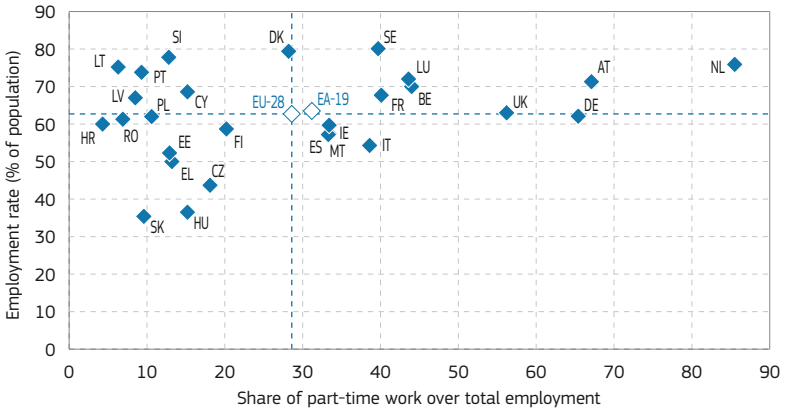
([30]) For a more detailed discussion on the reasons for working less (gender roles, structural barriers, institutional constraints, care responsibilities, and tax-benefit systems) and its negative implications (lower hourly earnings, poverty risk, fewer training and career opportunities, skill mismatch, larger gender pension gaps, underutilisation of human capital) as well as positive implications (better work-life balance, higher life satisfaction, less stress, labour mobilisation, effective use of workforce), see European Commission (2013c).

([31]) Eurostat Labour Force Survey 2014.

([32]) All clusters in the model together. Controlled for personal characteristics, overall employment rate, GDP per capita, GDP growth, unemployment rate and year.

However, the promotion of part-time work can also be detrimental to gender equality. Since the reconciliation of work and family is not an issue limited to women only, policies could include measures that increase flexibility of working and leave arrangements of both men and women, in spite of often strong cultural obstacles to shared or dual caring. There does not need to be a trade-off between high employment rates and fewer working hours (see Chart 15). The examples of Slovenia, Portugal and Lithuania as well as Latvia, Cyprus and to a lesser extent Denmark illustrate that combining a high employment rate and full-time work is possible.

Chart 15: Mothers' (aged 25-49 years) employment rate and part-time work, 2013 ([1])



Source: Labour Force Survey, Eurostat.

Note: The lines denote EU-28 average.

([1]) 56% of Swedish women in part-time employment worked relatively long hours (30+ hours per week) and 14% shorter hours (under 19 hours per week); while in Germany the proportions were reversed: 17% in long part-time work and 45% in short (European Commission, 2010: 6).

Box 2: Hungary, Slovakia and the Czech Republic share similar challenges in regards to mothers' employment

Charts 11 and 13 illustrate the weak position of mothers in the Hungarian, Slovakian and Czech labour market, although recent developments vary between countries (an improvement in the Czech Republic but a further decrease in Slovakia). In these countries, less than half of the mothers with young children are employed. In Hungary, the employment gap between mothers and other women aged 25-49 is 44 percentage points, the largest in the EU, followed closely by Slovakia and the Czech Republic.

While Hungary is close to achieving the Barcelona target of having 90% of children above 3 years of age in early childhood education or care, the enrolment rate of younger children is among the lowest in the EU, currently at 10%. However, childcare costs, which according to the OECD (2014) amount to 5.1% of the average wage, are significantly below the EU average (23.8%). On a more positive note, there have been continuous efforts in Hungary to improve childcare provision also for younger children and incentives for mothers to return to work faster have recently been strengthened. The impact of these efforts on mothers' employment and poverty needs to be monitored.

In the Czech Republic and Slovakia the use of childcare for children below 3 years of age, is even lower, and for older children participation in childcare is below the EU average (see Chart 16). In the three countries, maternity and parental leave periods are longer than the EU average, especially in Slovakia, and remuneration is below the EU average.

In the EU, the at-risk-of-poverty and social exclusion rate for children is the highest in Hungary after Bulgaria and Romania. It stands at 43.0% in 2013, considerably higher than for the total population (33.5%). This issue has been highlighted in the 2014 Country-Specific Recommendations, but there has been no visible improvement (European Commission, 2015b). As Hungary already spends more than the EU average on family benefits and the poverty reduction impact of such benefits is relatively high (see Chart 22), more efforts to improve the labour market opportunities of (low skilled and poor) mothers and to provide high-quality childcare services for disadvantaged children might work in the fight against poverty and its long-term consequences for children. The territorial disparities in the availability of childcare can also affect families in unequal way within the country.

While the employment rate for mothers rose from 36.2% in 2005 to 43.7% in 2013, the European Semester process recognises the lack of affordable childcare services and the limited use of flexible working-time arrangements as hindering mothers' labour market participation in the Czech Republic. Partly due to social norms in Czech society, many women continue benefiting from generous parental leave until the child is 4 years old. This could serve to mask the actual unemployment figures for women. Pertold-Gebicka and Husek (2015) stress that the lack of public childcare facilities pushes women away from the labour market: in 2013, kindergarten applications of 16% of children could not be met. In addition, the net cost of childcare, at 18% of the average parental wage, is relatively high (OECD, 2014). The Czech government has already promised to increase the capacity of public childcare facilities, but progress and its implications for mothers' employment need to be monitored in order to evaluate the impact of family policies on gender equality and employment (European Commission, 2015a).

In Slovakia, mothers' labour force participation further decreased between 2005 and 2013. This hinders progress in achieving the EU2020 employment target in this country. Furthermore, estimates show that increasing the female employment rate to the EU-15 level could boost Slovakia's GDP by 1.6 percentage points (European Commission, 2015c). The European Semester country report for Slovakia also mentions low take-up of flexible working arrangements as an obstacle to employment. Some actions have already been taken to increase pre-school education capacity, but more effort is needed to provide good quality care for the youngest children – an issue that has also been highlighted in the 2014 Country-Specific Recommendations (European Commission, 2015c).

3.2.4. Availability of childcare key to reconciling work and family

Women devote considerably more time than men to unpaid household work and these responsibilities contribute to fewer hours of paid work or inactivity. While public childcare arrangements play a fundamental role in this respect, policies affecting men's opportunities in participating in unpaid household work and taking up parental leave are also increasingly important.

Barcelona targets still not reached in many countries

At the Barcelona Summit in 2002, the European Council set targets for providing childcare to at least 90% of children between 3 years old and the mandatory school age and at least 33% of children below 3 years of age. More than a decade later, there has been a lot – although to varying degrees – of progress, but still most of the countries are far below the Barcelona target level (Chart 16). For the younger age group, only France, Luxembourg, Portugal and Slovenia reached the 33% target, while Belgium, Denmark, Spain, the Netherlands, Sweden and the United Kingdom had already reached the target. For the older age group, Estonia, Malta (from a level of 58% in 2005), Slovenia and Sweden reached the 90% target, and Belgium, Denmark, Spain, France and Italy were already top performers ([33]).

The availability of formal childcare is connected to mothers' employment opportunities (Hank and Kreyenfeld, 2002; Del Boca, 2015). Chart 17 illustrates the connection between ECEC participation of children aged below 3 and the size of the employment gap between mothers and other women. The highest participation rates for mothers (taking into account the overall level of female employment) are accompanied by high shares of children in formal childcare ([34]). (Brilli, 2015).

The hours of attendance at childcare services vary enormously among Member States. In several countries the services are used part-time and do not cover a full working week. In the United Kingdom, the Netherlands and Ireland the services are essentially used on a part-time basis regardless of the age group. It should be noted that, in some cases, participation is well below 30 hours per week.

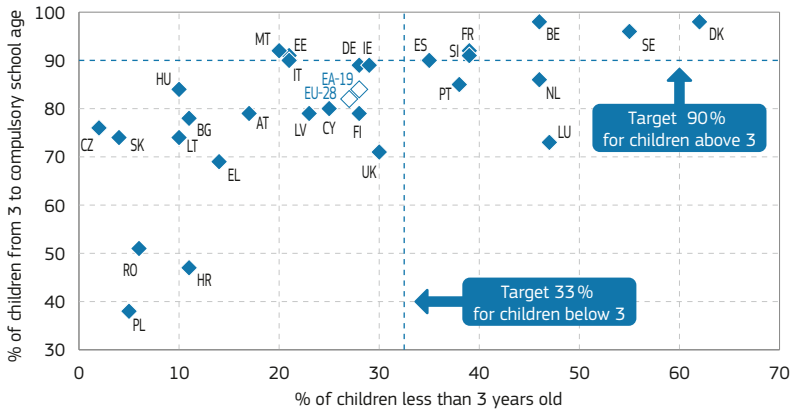
Chart 18 illustrates the connection between the use of childcare for very young children (aged under 3) or general spending on family benefits and mother's employment by educational level. It appears that more extensive use of childcare is connected to higher employment in all educational groups, when other personal characteristics and institutional factors are controlled for (see Annex 2 for full description of the regression model). From a policy perspective it is important to note that all educational groups benefit from childcare, while the marginal effect is slightly higher for the highest educational group. The opposite is true for total family spending (measured as spending per child and adjusted for GDP per capita) that is associated with a modestly decreasing employment probability ([35]).

The cost of childcare

Formal childcare services for young children are a way for parents to enter and/or remain in the labour market only if they are financially accessible (for review of studies, see e.g. Del Boca and Vuri, 2005). However, 53% of mothers who declare that they do not work or that they work part-time for reasons linked to formal childcare services consider the costs to be an obstacle. This figure is higher than 70% in Ireland, the Netherlands, Romania and the United Kingdom (European Commission, 2013a: 12).

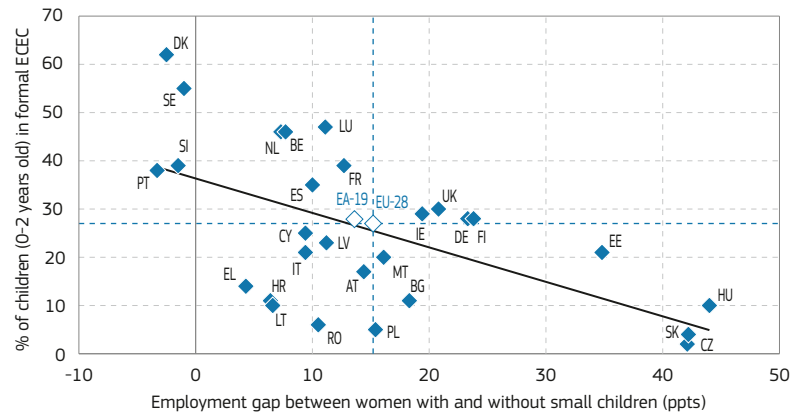
For example, in the United Kingdom, the net cost of childcare exceeds one third of parental net income compared to the

Chart 16: Achieving Barcelona targets – use of formal childcare in 2013



Source: Eurostat.

Chart 17: Use of formal childcare (0-2 years old) and employment of women (aged 25-49 years) in 2013



Source: Eurostat.

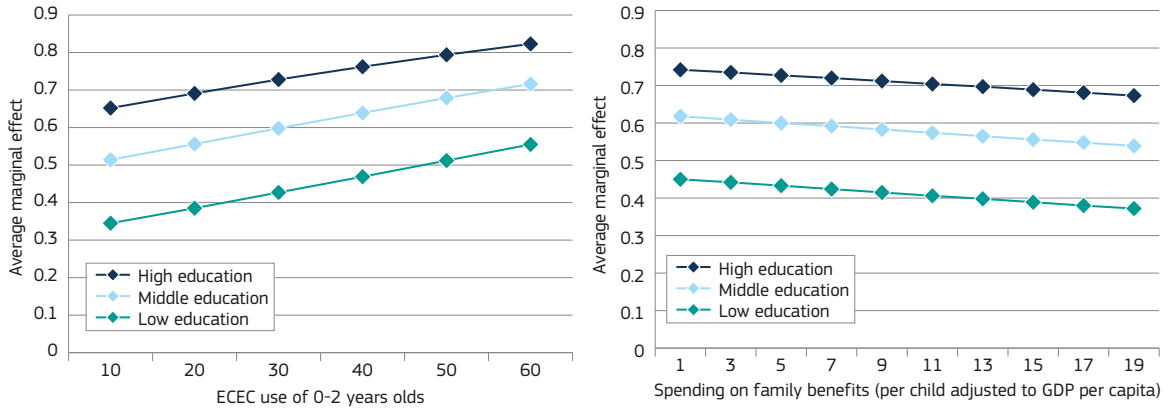
Notes: Use of formal care for 0-2 years old vs. employment gap of women with children less than 6 years old and women without children. The lines denote the EU-28 average. Correlation of 0.3227 (R2).

([33]) For a full review of achieving the Barcelona targets, see European Commission (2013a).

([34]) The connection is obviously endogenous: the more women work, the more children are enrolled in services.

([35]) Ferrarini (2006) has similar findings: childcare is positively correlated with female employment, while general family support did not have a relationship with it.

Chart 18: Impact of ECEC use (0-2 years old) and spending on family benefits and on mothers' work, regression analysis results



Source: DG EMPL calculations based on EU-SILC 2007-2012 [udb 2007-2012].

Notes: Chart presents the average marginal effects when all other personal and institutional characteristics are held constant, only mothers aged 25-49 with children below the age of 6 are considered. See the full regression analysis model in Annex 2. Results are statistically significant at the level of P<0.001. Results for all countries together. No data for Croatia and Malta.

EU average of 11.2% (OECD, 2014) ([36]). A recent study using microsimulation also shows that Ireland and the United Kingdom stand out as countries where secondary earners with children are especially penalised. In Germany, Slovakia and Luxembourg, the out-of-pocket childcare costs are also a considerable disincentive for women (Rastrigina and Verashchagina, 2015).

A study on the expansion of free entitlement to part-time early education in England showed that the expansion led to a rise in mothers' employment and especially those mothers who used early education because it was free were affected (Brewer et al., 2014). Empirical evidence from Italy also indicates that only by reducing the financial burden on families and expansion of childcare system could have a large impact on mothers' labour market participation (Del Boca and Vuri, 2005).

When childcare costs are taken into account, median earning mothers generally manage to increase their income by less than 40% by taking up a job. Moreover, a single mother needs to earn an above-average full-time wage in order to achieve a 50% increase in family income (Richardson, 2012).

In addition to their impact on affordability of childcare, childcare subsidies also impact on redistribution. First, they serve as an employment-related income transfer to working parents. Hence, publicly provided or subsidised childcare may complement other redistribution programmes (Vaalavuo, 2013). Second, high-quality childcare can also ensure that children from lower socio-economic backgrounds have equal opportunities ([37]).

The social gradient in access to childcare

Enabling parents to work is particularly important for children as poverty has a significant impact on well-being and may have negative long-term effects on educational achievement and future life chances ([38]). In addition, good quality childcare has been proven to be beneficial for child development. Very early intervention has been estimated as a cost-effective instrument for breaking the poverty cycle, and use of childcare is associated with various positive child outcomes (Heckman and Masterov, 2007; Berlinski et al., 2009; EACEA, 2009; Engster and Olofsdotter Stensöta, 2011). The social gradient in the use of childcare services is especially interesting from this point of view.

The European Commission's recommendation 'Investing in children: breaking the cycle of disadvantage' states that Member States should 'incentivise the participation of children from a disadvantaged background (especially those below the age of 3 years), regardless of their parents' labour market situation, whilst avoiding stigmatisation and segregation' (European Commission, 2013b). The recommendation also underlines that Member States should dismantle the barriers and disincentives deterring parents from working and address the lack of quality services.

Families in the first income quintile (the same is true for families with less educated parents) use childcare services less than those from higher income quintiles (or better educated) (see Chart 19). Slovenia, Sweden and Malta can be singled out as the best performers, having achieved a high participation rate and equality in use simultaneously. It is, however, very difficult to say to what extent inequality in the use of childcare is a cause or a consequence of other societal inequalities. On the one hand, there might be financial barriers to accessing childcare services, especially in countries where public involvement is limited but, on the other hand, it might also be that some parents decide to reduce working time in order to stay at home with a child, thus voluntarily choosing lower income and not using the services. Higher household work intensity is naturally associated with higher incomes and generally requires use of childcare.

([36]) Policy concern and most academic research has tended to focus on young children and the role of childcare services for school-age children, while school schedules have received relatively little attention. The educational system takes over part of the care responsibility, but in most countries school hours are part-time and generally not compat¬ible with a full-time working week. Women in countries with continuous school days tend to have higher activity rates (Gornick et al., 1997). Plantenga and Remery (2013) argue that in addition to offering a safe place where children can relax, out-of-school services may contribute to further social and educational development.

([37]) Early childhood, education and care services are provided through a variety of mechanisms across European countries. The effects of these funding systems in terms of costs, quality and inclusiveness and the advantages and disadvantages of private and public systems along these dimensions are investigated by the FP7 research project CARE. http://ecec-care.org/fileadmin/careproject/Publications/reports/D5_1_The_Socio-Economic_Dimension_of_ECEC_in_Europe.pdf.

([38]) http://old.indicators.nom-nos.dk/pxweb/Dialog/statfile1.asp.

Box 3: The negative impact of home care allowance on employment in Finland

Nordic countries usually Cluster together in questions of social and family policy: they all have low child poverty rates and high fertility rates, and use a considerable amount of government expenditure to support families. Nevertheless, there is a considerable difference between Finland and for example Sweden when it comes to mothers' labour market attachment. While Finland has achieved high levels of female labour force participation in general, it has, after Hungary, Slovakia, the Czech Republic and Estonia, the highest gap (24 percentage points) in employment between women with small children and women without children (Charts 11 and 13).

The individual right to childcare guarantees each child a place in formal childcare ([1]), but still only 28% of children below 3 years of age are enrolled in Finland, compared with 55% in Sweden. This is largely due to the childcare allowance available for Finnish parents who take care of their small children at home ([2]). The Finnish model of reconciliation is special in that it offers parents a choice between employment and parental care through reducing barriers to work and financial support for those who choose to stay home. The political support for homecare allowance is strong despite the fact that several Nordic studies have demonstrated the negative impact of cash-for-care schemes on employment (Rønsen and Sundström, 2002; Schøne, 2004; Rønsen, 2009).

The above figures on childcare use show that the choice of Finnish mothers is tilting towards staying at home with children. This is not without consequences for women's pension rights, career opportunities and the optimal use of human capital. Furthermore, it has implications for the gender wage gap, which in Finland is among the highest in Europe ([3]). A large gender pay gap contributes further to mothers' decisions on whether to take up homecare allowance in the place of men. The large majority of the recipients are mothers with low incomes and low educational attainment (Ellingsater, 2012; Aassve and Lappegård, 2009), which can mean that these women have few opportunities in the labour market. Consequently, the use of the homecare allowance may further increase inequality between women of different socio-economic classes.

In order to promote mothers' return to work and gender equality, Finland could develop incentives for fathers to use the homecare allowance as well as opportunities to engage in part-time work. For example Sweden has succeeded in increasing fathers' use of parental leave. In 2013, 25.5% of paid parental leave days were used by men in comparison to 8.8% in Finland ([4]). However, the attractiveness of labour market participation has to be improved for women with lower qualifications and fewer labour market opportunities.

Based on their tax-benefit model, the OECD (2015a) finds that providing cash benefits, such as the Finnish homecare allowance, which creates incentives to care for children at home, reduces the tax burden and increases access to other cash benefits, thus leaving some families better off in the short run. However, it also states: 'if cash payments increase homecare incentives for the poor this can result in a weaker labour market attachment and long-term poverty implications.' The study also points out that governments should focus on the long-term consequences, including benefit dependency and intergenerational inequality ([5]), of such policies and make sure that in particular, low-income parents are better off by using public childcare services. In addition, in the case of higher-earning parents, the use of a care allowance and consequently the fewer hours worked reduce the taxes and social contributions collected. It is also likely to affect overall productivity due to skills associated with higher earnings.

([1]) However, the new Finnish government has proposed to cut the subjective right to childcare when one of the parents is at home or unemployed.

([2]) Parents of children under 3 years old can claim the Finnish homecare allowance if the child is not enrolled in municipal day care but is instead taken care of by one of the parents, another relative or a private service-provider. The basic allowance is not income-related, while there is an additional allowance for low-income families.

([3]) OECD Employment Database 2014: http://www.oecd.org/gender/data/genderwagegap.htm.

([4]) http://old.indicators.nom-nos.dk/pxweb/Dialog/statfile1.asp.

([5]) The OECD (2015a) points out that incentivising mothers to stay out of the labour market for long periods of time due to childcare responsibilities at home reinforces intergenerational inequality: children whose mothers have paid work may do better in school given their relative social and economic advantages and higher family income (see also McGinn et al., 2015).

3.3. Supporting household incomes, fighting child poverty and breaking the intergenerational cycle of disadvantage

Effective family policies that support mothers' employment also support household incomes and these policies can be especially important for low-income families. Family policies are also crucial in supporting household incomes and fighting poverty and deprivation by providing cash support. Several forms of parental leave, child allowances, cash-for-care systems and tax credits for families are available for this purpose. In some countries these cash transfers place more emphasis and incentives on encouraging women to work.

3.3.1. Family policies support household incomes to varying degrees

Family benefits have varying importance for household incomes across the Member States. This reflects both the distribution of benefits across income quintiles within a country (Chart 20) as well as their level in relation to other incomes (Chart 21).

There is great variance between countries in the equality of distribution of family benefits. In Malta, Portugal and the United Kingdom, these cash transfers benefit the bottom income quintile especially, while the distribution is remarkably pro-rich in Spain and all the Baltic states.

Spain (and to a lesser extent Greece and Italy) stands out in that the share of family benefits of household disposable income is on average only 1% in comparison to around 10% in the EU-28 (2% and 3% in Greece and Italy). In addition, the importance of family benefits even for the poorest families remains equally low,

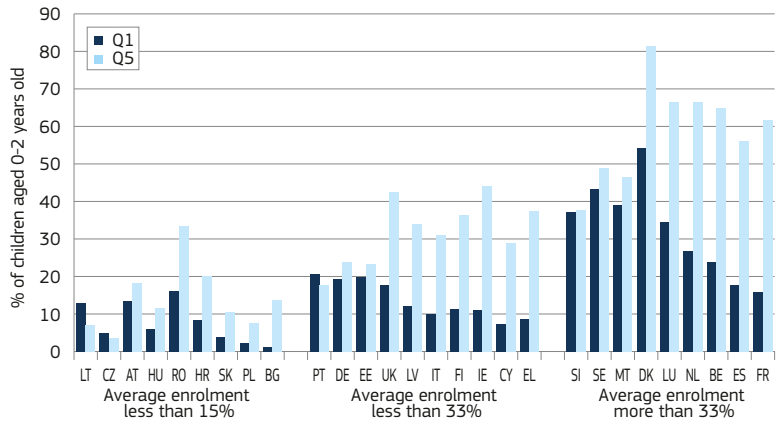
while in the EU-28 family benefits represent 20% of the total disposable income of the bottom income quintile. The case of Spain is especially striking because child poverty is among the highest in Europe.

Family benefits form a considerable proportion of household income in the bottom part of the income distribution in many countries (see Tables A.6-A.9 in Annex 2 for all income quintiles and for different social transfers). For example, in Ireland 40% of household income in the bottom income quintile comes from family benefits, in Hungary 39%, and the United Kingdom 33%. Cuts in these benefits would hurt the families with tight budgets the most. In addition to family benefits, other social transfers make up a large share of family disposable income. On average social assistance represents 6%, housing allowances 3% and unemployment benefits 8% of the income in the lowest income quintile. In Ireland, the United Kingdom, Hungary and the Netherlands, all benefits together make up more than half of total household income. By contrast, in Greece, Italy, Cyprus and Poland, their share is less than a fifth. In Spain, quite unsurprisingly, unemployment benefits form a large component of family income.

3.3.2. Family benefits important in reducing poverty

The impact of family benefits on household incomes and poverty risk varies significantly from country to country. While Korpi and Palme (1998) argued that universal systems are better placed to fight poverty and inequality, more recent research has found that this 'paradox of redistribution' seems no longer to exist. In other words, targeting can actually also increase redistribution (Marx et al., 2013). However, universal systems, i.e. systems where the entire reference population is entitled to the benefit, usually have a stronger impact on poverty because these systems also tend to be associated with higher overall family spending than more selective systems that use, for example, means-testing as an eligibility condition (Cantillon et al., 2015) ([39]).

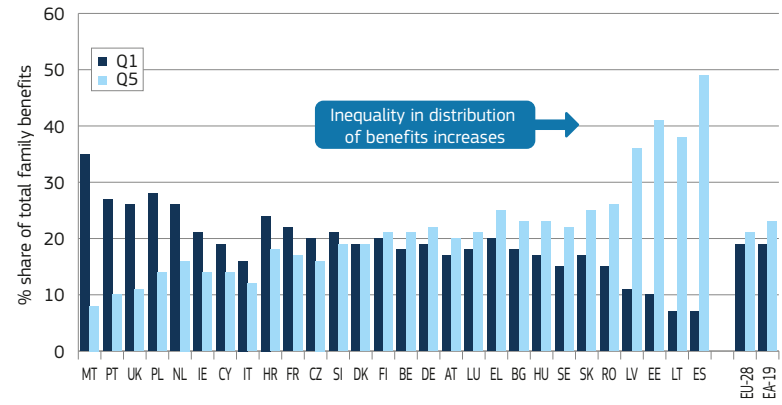
Chart 19: Percentage of children aged 0 to 2 in formal childcare per income quintile



Source: DG EMPL calculations based on EU-SILC 2012 [udb 2012].

Note: Income quintiles based on children below 6 years old.

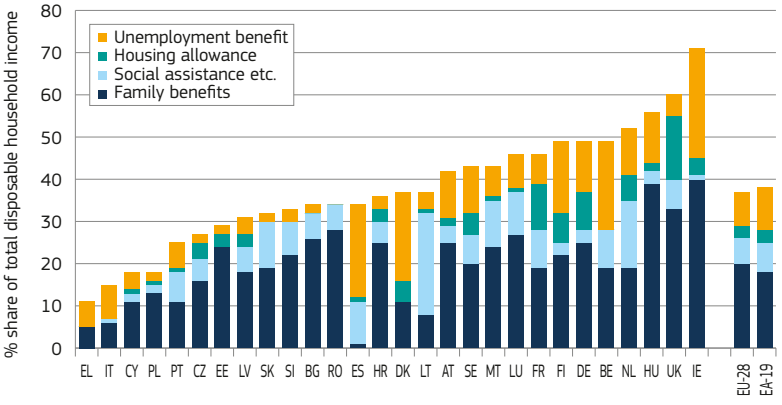
Chart 20: Distribution of family benefits across income quintiles (0-17 years old)



Source: DG EMPL calculations based on EU-SILC 2012 [udb 2012].

Notes: All family benefits (gross) per income quintile divided by the number of children in the quintile. Income quintiles based on children 0-17 years old only.

Chart 21: Selected social benefits as a share of total disposable household income of the lowest income quintile, 2012



Source: DG EMPL calculations based on EU-SILC 2012 [udb 2012].

Note: Quintiles based on children 0-17 years only.

The size of the poverty reduction effect of family benefits is strongly correlated with the volume of spending on family benefits as a share of GDP (Chart 22). This is, however, not the full story. Interestingly, the share spent on in-kind benefits is not connected to the magnitude of poverty reduction: it is the total spending that matters. While the correlation is clear, some countries achieve the same level of poverty reduction with lower spending. This is especially evident, when comparing Denmark, the highest spender, and the Netherlands, among the least generous Member States, which have the same level of poverty reduction through family benefits. However, in the Netherlands the distribution of family benefits is pro-poor

([39]) For recent evidence on poverty, social policy and social innovation in Europe, see DG RTD funded research project ImPRovE. The project has provided new social indicators, especially in the area of reference budgets and minimum income protection; insightful analyses of poverty and the Europe 2020 targets; research on employment and the welfare state; and contributed to a better understanding of the interaction between local projects of social innovation and the traditional welfare state. In its last phase, the project develops policy scenarios that foster insight into how poverty can be effectively reduced in EU Member States.

Box 4: Comparing the effectiveness and efficiency of family cash benefits and services

The OECD report (2015a) 'Comparing the effectiveness and efficiency of family cash benefits and services' offers information on the effectiveness of family spending. This is especially important now as the continued economic crisis has put pressure on cutting social spending in many countries, and governments are faced with the question of how scarce resources can be used in the most effective way to improve the lives of families.

The report first discusses **barriers to take-up of benefits**, which are likely to hamper the effective delivery of both cash and in-kind benefits. In order to tackle low take-up especially among disadvantaged families, the report recommends improvements in terms of facilitating enrolment in programmes, simplification of eligibility criteria, and provision of clearer information on the application and benefits.

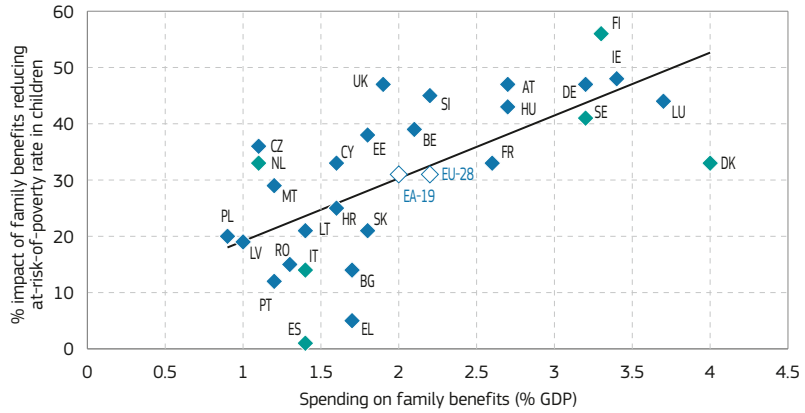
The report draws attention to **randomised controlled trials (RCT)** in order to offer detailed insights on what works and in which conditions, but it also illustrates how one should study and measure the impacts of new policy measures and reforms. The trials reviewed in the report show that the benefit conditions and complementary services to cash transfers are important for successful delivery of family benefits. RCTs present an effective tool for establishing the causal effect of policies. This cannot usually be done based on observational data that can only illustrate correlations between policies and outcomes. However, it is necessary that governments commit to studying the effectiveness of policies through RCTs when planning for new programmes.

The report's **macro-pooled time series analysis** complements the results presented in this section. The OECD analysis finds that employment and poverty outcomes are driven by the balance of how, when and how much money is spent on families with children. One of the main conclusions is that universal benefits are connected to lower child poverty, while targeted benefits are connected to lower female employment. However, it is also important to note that one-size-fits-all policies are hard to find, and effective policies need to be tailored to suit the overall institutional context as family policies interact with other policies. In addition, policies that are important in fostering female employment and reducing child poverty are not limited to family policies only, but naturally include labour market and education policies.

The report reviewed the effects of policy reforms during the economic crisis on the poverty risks of certain family types through an **OECD tax and benefit simulation model**. Their calculations show that the poverty risk of different family types increased in most OECD countries, while there were different impacts for low- and average-income families. For example in Denmark, Hungary and Italy, the increase was more marked in lower-income families, while average-income families were affected to a greater extent in Poland and the United Kingdom. Only in Slovenia, Spain and Sweden were there notable declines in poverty risks.

While some of the reforms have not translated into changes in poverty, the reduction in the maternity leave replacement rate in the Czech Republic and in childcare support in the United Kingdom are likely to have contributed to higher poverty risks. The changes in maternity leave eligibility rules in Greece, the Irish introduction of a free pre-school year, and the childcare voucher for low-income families in Luxembourg, on the other hand, have improved the living standards of families.

Chart 22: Poverty reduction impact of family benefits and public spending on families and children



Notes: Countries marked with green diamonds have above-average spending on in-kind benefits as a share of all family benefits. Correlation 0.4244 (R2).

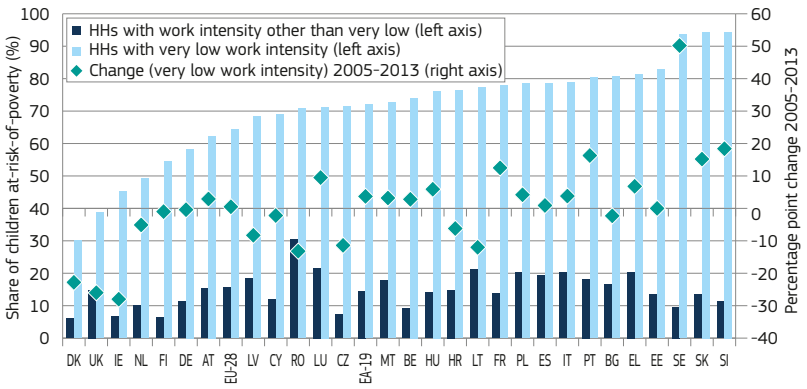
and in Denmark it is much more equal (see Chart 20). To conclude, the design of the system affects the effectiveness of family benefits in reducing poverty risk (see also Box 4).

Working parents are the best protection against child poverty

Removing barriers for parents' employment is a desirable goal from the point of view of poverty reduction. The generalisation of dual earnership means that a double income in a family has become the norm, which increases the poverty risk for single earners' households. This also generally translates into very high poverty risk of those children living in households with very low work intensity (Chart 23) ([40]). On average, the poverty risk for children living in very low work intensity households is 70.7%, compared with 14.8% of children living in households with higher work intensity.

The impact of work intensity has grown during the past decade in many countries. The most striking change took place in Sweden: in 2005 children in very low work intensity families faced a poverty risk of 43.5%, while in 2012 this was 93.7%. This can be interpreted in two ways: either the population who end up in very low work intensity households has changed over time (so-called 'selection' bias) and belonging to such a household means nowadays even more complete marginalisation and perhaps multiple deprivations or, alternatively, the income protection of such families has weakened ([41]). In some other countries, such as Ireland, the United Kingdom and Denmark, the poverty risk related to very low work intensity has decreased (see Chart 23).

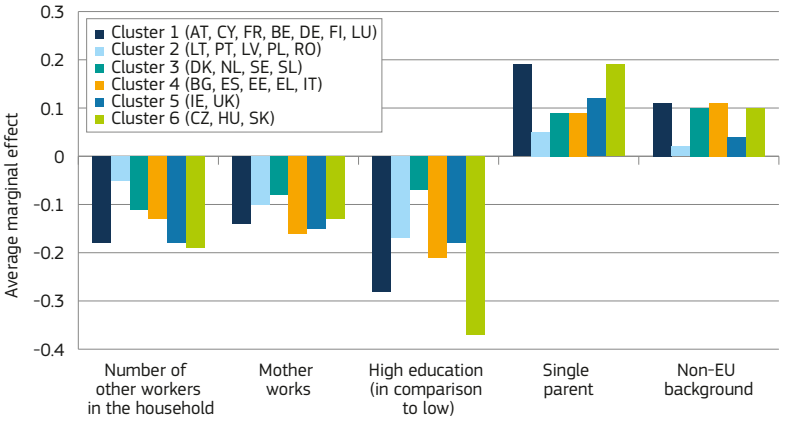
Chart 23: At-risk-of-poverty rate of children living in very low work intensity households, 2013



Source: Eurostat.

Notes: The change in poverty risk (in percentage points) is indicated in the secondary (right-hand side) axis. Positive numbers indicate an increase in the risk related to very low work intensity. For Bulgaria change is measured for 2006-2013, for Romania 2007-2013, and for Croatia 2010-2013. 'Very low work intensity' is a measure of 0-59 year old persons living in households where working-age adults (18-59 years old) work less or equal to 20% of their total work potential during the survey year.

Chart 24: Personal characteristics determine poverty status (regression analysis based on EU-SILC 2006-2012)



Source: DG EMPL calculations based on EU-SILC 2006-2012 [udb 2006-2012].

Notes: Chart 16 presents the average marginal effects when all other personal characteristics are held constant; only mothers aged 25-49 with children below the age of 6 are considered. See the full regression analysis model in Annex 2, Table A.11. All shown variables are statistically significant (at level P<0.000). No data for Croatia or Malta.

Some key personal characteristics impact on mothers' poverty status (see Chart 24). Both the mother's own working status and the number of additional workers in the household appear to be the main determinants of poverty, together with the educational level of the mother ([42]). On the reverse, single parenthood and non-EU background are associated with a higher poverty risk.

At the institutional level, some factors are connected to higher probability of poverty and in particular an unequal distribution of family benefits and a higher share of female part-time work. A larger share of family benefits in the poorest income quintile and wider participation in childcare, on the other hand, reduce the risk of poverty (see the full model in Annex 2, Table A.11) ([43]).

Families with a new child have a higher risk of entering poverty than overall population

Having a new child in the household can impact on poverty entry. Entry rates into poverty can be analysed separately for families with a new child, those who became single parents, and the total population who were not poor the year before, but made a transition to poverty (see Chart 25, based on the same data as in Chart 13). The EU average for poverty transition is 9.6% for families with a new child, higher than the entry rate for the entire population, which stands at 6.0%. However, the highest entry probability is for new single parents, of whom 26.1% entered poverty.

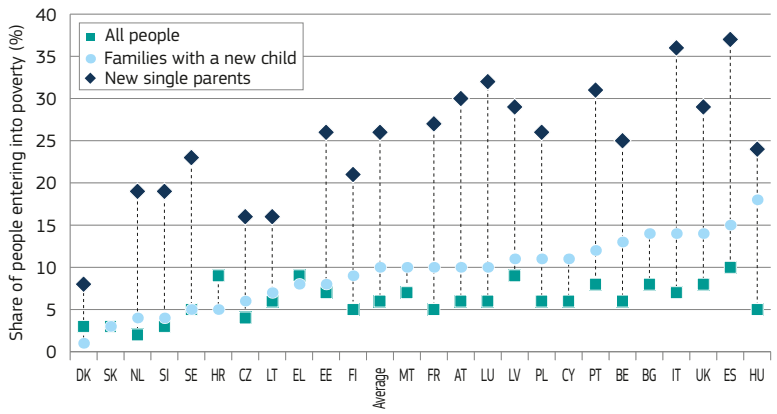
([40]) Less than 20% of total potential working time in a year is used for working by household members 18-59 years old (excluding students).

([41]) A third option could be that the number of children living in very low work intensity households in Sweden is so small that the change over time is a result of sampling and the finding is an artefact.

([42]) OECD (2015a) also finds that female labour market participation is consistently associated with lower child poverty risk – independent of variation in family spending.

([43]) All clusters in the model together. Controlled for personal characteristics, overall AROPE (share of people at-risk-of-poverty or social exclusion), mothers' employment rate, gender pay gap, family spending, GDP per capita, GDP growth, unemployment rate, Gini coefficient and year.

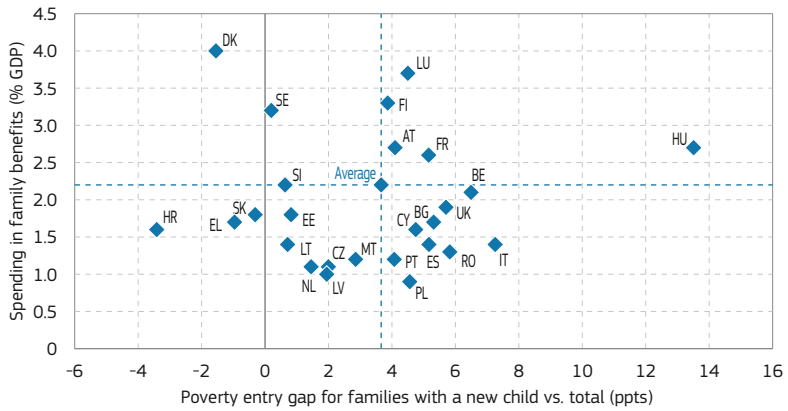
Chart 25: Impact of a child on poverty, poverty entry rates



Source: DG EMPL calculations based on EU-SILC 2010, 2011 and 2012 longitudinal data [udb 2010-2012].

Notes: Due to small sample sizes, the entry rate for new single-parents is not shown for all countries. No data for Germany and Ireland.

Chart 26: No correlation between poverty entry gap and public spending on family benefits



Source: EU-SILC 2010, 2011 and 2012 longitudinal data [udb 2010-2012] and Eurostat.

Note: The lines denote average for the included countries.

Denmark, Slovakia, Slovenia and the Netherlands have the lowest entry rates for poverty for families with a new child, in some cases even lower than for the total population, while Hungary, Spain and the United Kingdom have the highest entry rates, and in Hungary the difference compared with the total population is especially large (18 % compared to 5 %).

The entry rate for poverty for families with a new child is correlated with the AROPE (at-risk-of-poverty or social exclusion) rate of children (correlation 0.39). However, it might be more interesting to look at the difference in entry risk between families who have a new child and the total population, together with public family spending. There is no correlation between the two (Chart 26). The countries where the gap is the largest, illustrating the high relative poverty risk associated with having a child, such as Hungary, Italy and Belgium, also have very different levels of public spending on families as well as different employment rates for mothers (Chart 11).

3.4. Main findings

Outcomes for children are an essential factor affecting long-term economic and social developments, and investment in childhood is key to tackling the challenges associated with ageing societies in Europe, both in terms of their future impact on children when they grow older and for the direct impact on families, including the employment of parents and notably mothers.

Our analysis shows that wide provision and use of childcare services is associated with higher rates of mothers' participation in the labour market. In addition, part-time work also increases this likelihood when other things stay constant. However, general spending on family benefits and the gender pay gap are negatively correlated with mothers' employment.

When focusing on mothers' poverty risk, beyond the expected positive impact of employment on protection against poverty, equal distribution of family benefits and their higher level are connected with a lower poverty risk. All other things being equal, women's part-time work is, however, associated with a higher poverty risk, which illustrates the importance of looking at both the employment and social outcomes simultaneously (as some policies may have some positive impacts on the one side, but not necessarily on the other). In general, *a holistic approach* to family policies, i.e. taking into account employment, social and child well-being objectives at the same time, appears to be necessary.

The one-breadwinner family model no longer appears sufficient to protect families against poverty. The higher the work intensity in the family, the lower the poverty risk. While other risk factors exist, the labour market situation of parents is a powerful determinant of the conditions in which children grow up and their opportunities in the long run. However, in combination with opening access to the labour market, availability of adequately paid jobs and flexible working time arrangements for both mothers and fathers also matter.

To this end, adequate levels of paid parental leave that maintain attachment to the labour market and ensure financial incentives work, with affordable high-quality childcare services, play a crucial role. However, reducing incentives for mothers to stay home for long periods would also need to be accompanied by work opportunities for mothers of different educational levels, notably for mothers with low skills and immigration backgrounds, who currently have significantly weaker labour market attachment. These are also the families that would benefit the most from good-quality early childhood education programmes.

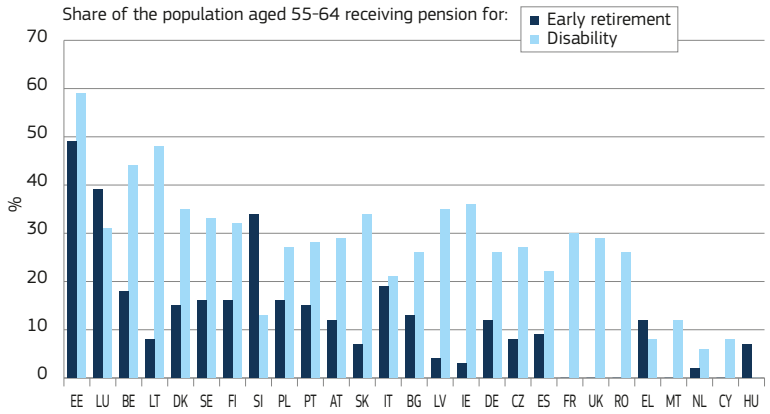
On the other hand, while full-time work for mothers appears desirable for both individual families and society, it might be associated with a double burden on mothers. In this respect, more gender-balanced working hours would also contribute to better reconciliation of work and family life. Greater flexibility at workplaces would also contribute to addressing the heterogeneity of household situations.

4. SOCIAL PROTECTION PROMOTING LONGER WORKING LIVES

This section provides an analysis of key factors impacting the labour market participation of older workers. Indeed, promoting longer working lives is essential to ensure both the sustainability and adequacy of pension systems in a context where structural demographic ageing adds to cyclical deficits to put pressure on the sustainability of social protection systems and in particular of pension systems (see 2015 Ageing and Pension adequacy reports). Furthermore, as highlighted in the first section of this chapter, the share of pension expenditure tended to slightly increase during the crisis.

The section first focuses on the role of pension systems in setting adequate work incentives and in particular in restricting early retirement paths (4.1). It then reviews trends in the labour market situation of older workers, focusing in particular on transitions on the labour market (4.2). It then reviews obstacles for longer working lives on the basis of a Cluster analysis (4.3), before deriving estimates of the impact of key drivers of the employment rate of older workers (4.4).

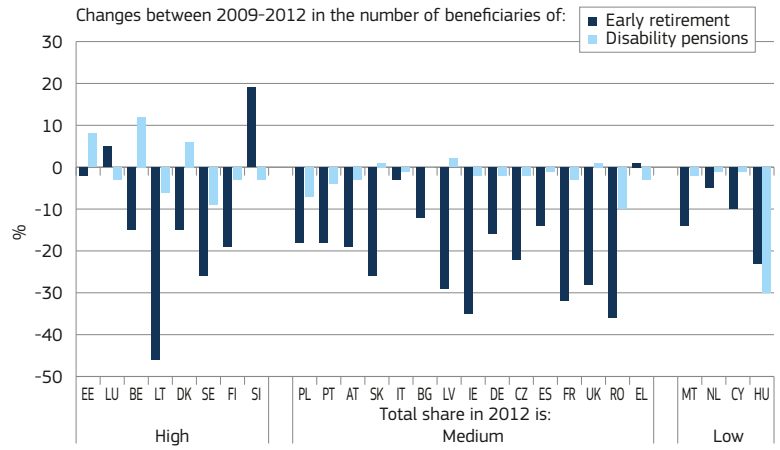
Chart 27: Share of beneficiaries per relevant population by type of pension (2012)



Sources: ESSPROS Pension beneficiaries module. DG EMPL calculations for the share of the population aged 55-64 receiving pension for early retirement or disability.

Notes: Early retirement schemes include anticipated old-age pensions and early retirement due to labour market reasons. Disability pensions include disability and early retirement pensions due to reduced capacity to work. The figures may include double counting as individuals may be beneficiaries of more than one pension.

Chart 28: Change in the share of beneficiaries per relevant population by type of pension, 2009-2012



Sources: ESSPROS Pension beneficiaries module, DG EMPL calculations for percentual changes between 2009 and 2012 in the number of beneficiaries of early retirement or disability pension.

Notes: Early retirement schemes include anticipated old-age pensions and early retirement due to labour market reasons. Disability pensions include disability and early retirement pensions due to reduced capacity to work. The figures may include double counting as individuals may be beneficiaries of more than one pension.

4.1. Development of the adequacy and sustainability of pension systems

4.1.1. Pension reforms have improved the long-term fiscal outlook

Reforms of pension systems over the past years and decades have aimed to manage public expenditure on pensions to safeguard their future sustainability and adequacy (see 2015 Ageing and Pension adequacy reports and also Määttänen et al., 2014). The 2015 Ageing Report (ECFIN, 2015) puts forward a baseline scenario that despite a rise in the proportion of people aged 65 and over, average public pension expenditure for the EU-28 as a share of GDP would be no higher in 2060 than in 2013. This overall stable evolution of public pension spending over the next 4 decades is explained by substantial decreases in the coverage ratio, i.e. the share of pensioners in the old-age population (-2.4 ppt of GDP) and the benefit ratio i.e. the average relative level of pensions relative to earnings (-2.9 ppt of GDP). The decrease in the coverage ratio is mainly driven by rising exit ages from the labour market, leading to more people around the age of 65 relying on work income, whereas the decrease in the benefit ratio is explained by the fact that most Member States have enacted reforms that are expected to reduce benefit levels from the public pension system in comparison to average wages.

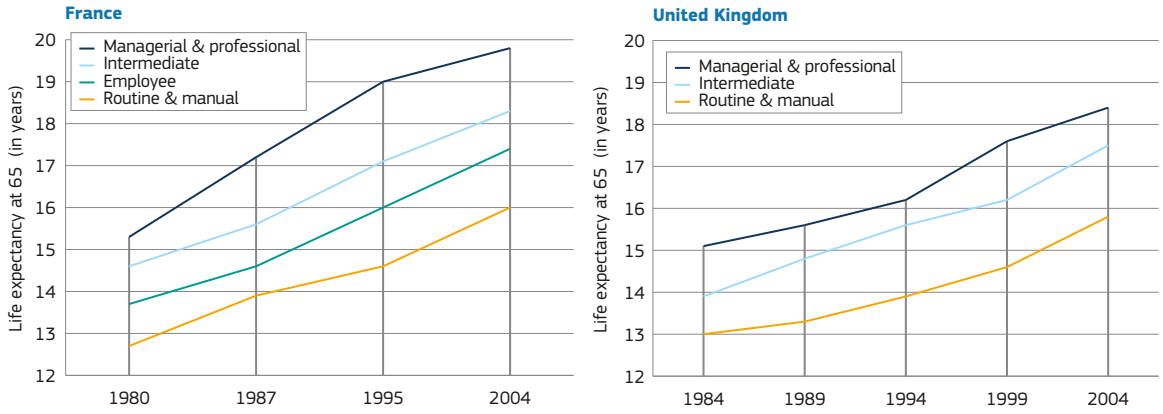
Postponing pensionable ages in line with the increases in pensionable ages could, amongst other measures, mitigate the reduction in replacement rates in most Member States, as longer careers result in better individual pension entitlements. Yet this will depend on the extent to which future cohorts, and in particular women, will be able to achieve fuller careers and on whether older workers will have sufficiently good health, skills and labour market opportunities to work to higher ages and accrue more pension rights.

4.1.2. An important role of limiting access to early retirement routes

Reforms implemented in the past two decades also include closing down early retirement schemes, tightening job search requirements for older workers, restricting disability benefits to those genuinely in need and increasing the pensionable age (see 2015 Ageing and Pension adequacy reports).

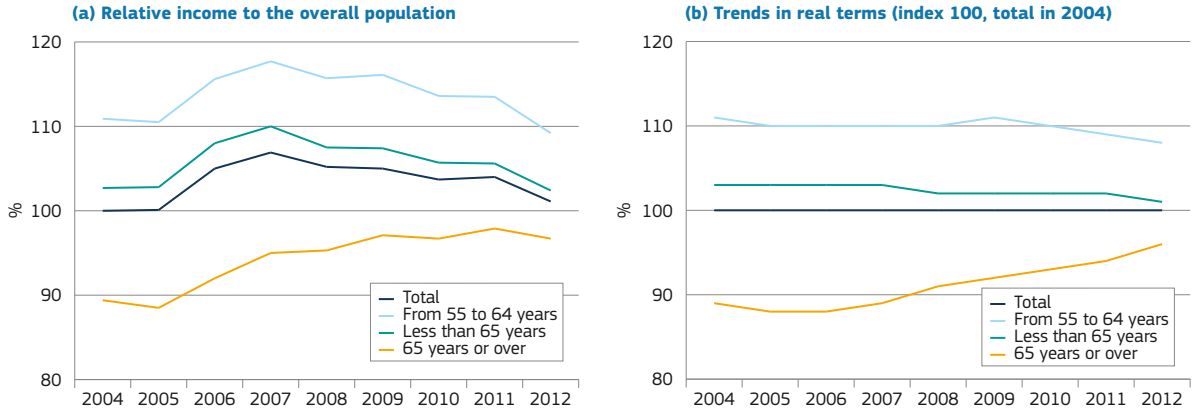
In 2012 in the EU-28, 43.1 % of persons receiving an old-age pension took part in an early retirement scheme. This share is

Chart 29: Development of life expectancy at 65 by socio-economic status in France and the United Kingdom



Sources: Blanpain and Chardon, 2011; ONS 2011; and Society of Actuaries 2000, 2014 in OECD Pension Outlook.

Chart 30: Trends in the median income of older people (2004-2012)



Reading notes: (a) Relative median equivalised incomes of the various categories as compared to the overall population; (b) relative median income in real terms (deflated by HICP) as compared to the median income of the total population in 2004.

Sources: EUROSTAT EU-SILC and HICP, DG EMPL calculations.

particularly high in some Member States such as Italy (73.9%), Ireland (68.5%) and Spain (59.9%) ([44]).

The coverage of early retirement and disability pension schemes varies widely across Member States, with some still making (in 2012) widespread use of early retirement and disability pensions, such as Estonia, Luxembourg, Belgium and Lithuania (Chart 27) ([45]).

Between 2009 and 2012, the number of beneficiaries of these pensions generally declined and increased only in a few countries, most notably for disability pensions in Belgium and Estonia (Chart 28). Hungary considerably reduced the number of beneficiaries of disability pensions, while in most Member States, the number of beneficiaries of early retirement schemes significantly declined, most significantly in Latvia, Lithuania, France, Ireland and Romania.

4.1.3. A uniform increase in pensionable age can be regressive

Life expectancy does not necessarily increase uniformly across society: people in some occupations die systematically younger than in others and the socio-economic gaps in life expectancy can actually increase over time (Chart 29). In addition, the evolution of healthy life years is not always parallel with the increase in life expectancy. Therefore, setting a single pensionable age for all may be regressive (2014 OECD Pension Outlook).

4.1.4. Relative income position of older people has generally improved in recent years

This section reviews trends in the income situation of people aged 55-64 and 65 or over (based on EU-SILC), in comparison to incomes of the overall population. The relative income position of older people has generally improved in recent years in spite of the crisis (also see 2015 Ageing and Pension adequacy reports). On average across the EU-28, the median disposable income of those aged 65 or above stood at 96% of that of the total population in 2012, as compared to less than 90% in the mid-2000s (Chart 30a). Over the same period, the relative position of people aged 55-64 slightly weakened.

This increase in the relative income of older people actually reflects a continuation of the growth of older people's median incomes during the crisis (except in 2012) in a context of a continuous decline in the median income of people aged under 65, including those aged 55-64 since 2008 (Chart 30b).

While these trends are linked to the shift in the structure of social protection expenditure (see Section 2), it can also be noted that in some Member States, incomes of older people can also support younger members in the same household. In particular, in some Member States

([44]) *Source:* 2012 LFS ad-hoc module transition.

([45]) Luxembourg and Lithuania also have a relatively large share of 65 year-olds receiving a survivor's pension, while in Estonia, for instance, the share is small.

(e.g. Slovenia, Lithuania, Luxembourg), income from pensions received by older household members is particularly important in supporting the incomes of the working-age jobless poor receiving less than 10% of their income from social benefits (see ESDE 2012).

4.2. Development of the labour market situation of older people

In 2014, the employment rate of older workers (aged 55-64) was 51.8% in the EU-28, just above the Barcelona target of 50%. However, this masks large differences across Member States, with rates as low as 34% in Greece and as high as 74% in Sweden. This section reviews trends in the activity and employment rates of older workers in the crisis before focusing on the specific aspects of older workers' transitions on the labour market.

4.2.1. Activity rate and employment rates of older persons continued increasing during the crisis

The activity rate of older people (aged 55-64) has been growing to a greater extent than for the overall working-age population, especially during the second phase of the economic crisis, when several pension reforms (increasing the pensionable age, the age for early retirement, length of contribution, etc.) were implemented (Chart 31).

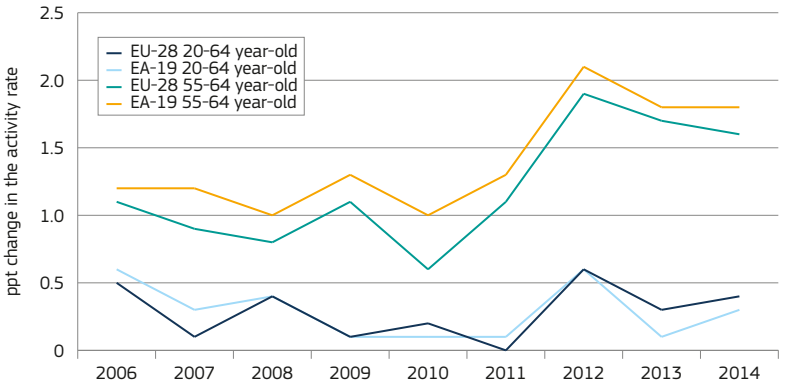
Between 2005 and 2014, the activity rate of older people increased in all Member States but one (Greece), and most significantly in Poland, Slovakia, Austria, Italy, Germany, the Netherlands and Bulgaria (Chart 32). The reduced use of early retirement schemes and disability pensions contributed to this trend, although other factors (including structural reasons) played a role. Indeed, the Member States which experienced the largest drop in the share of beneficiaries of early retirement pensions did not always experience the largest increase in the activity rate of older people and vice-versa.

Employment rates also improved

During the crisis, while the overall employment rate dropped both in the EU-28 and EA-19, the employment rate of older workers kept growing although at a moderate pace. Since 2012 the employment rate of older workers has been growing at a faster pace than before the crisis, while the overall employment rate only resumed growing significantly in 2014 (Chart 33).

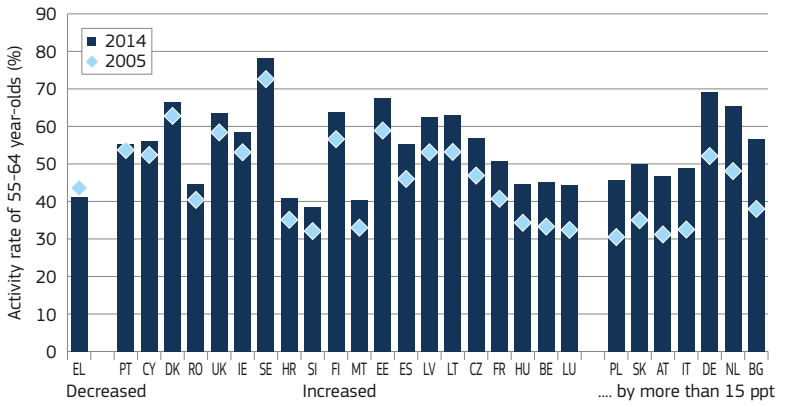
The employment rate of older workers has generally increased in the past decade, with a few exceptions (Greece, Cyprus and Portugal), and considerably in Germany, Poland, Bulgaria, Austria, Italy, the Netherlands and Slovenia (Chart 34).

Chart 31: Trend of the activity rate (ppt) of older workers (55-64) and core active-age population (20-64) in the EU-28 and EA-19 (2006-2014)



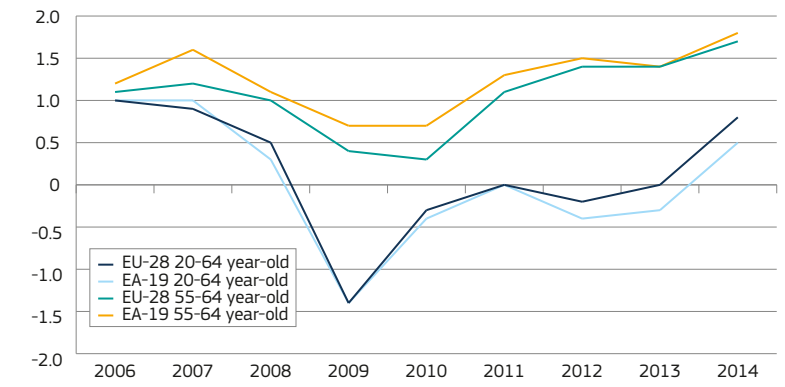
Source: LFS [lfsa_argan].

Chart 32: Trends in activity rates of 55-64 in Europe (2005-2014)



Source: LFS [lfsa_argan].

Chart 33: Change in the employment rate (ppt) of older workers (55-64), EU-28 (2006-2014)

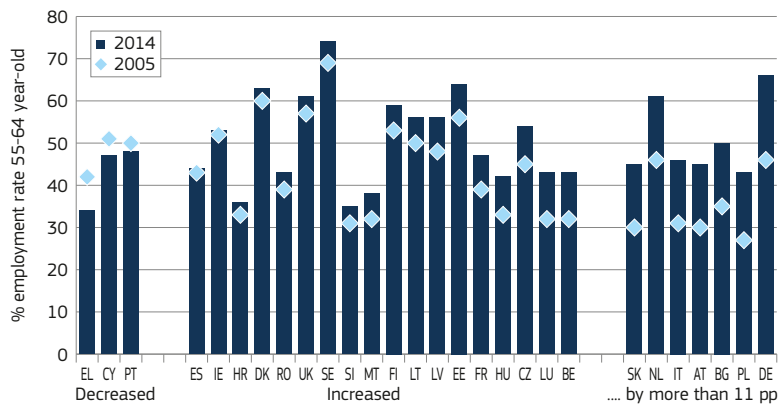


Source: Eurostat [lfsa_ergan].

4.2.2. Long-term unemployment is still more common amongst older people

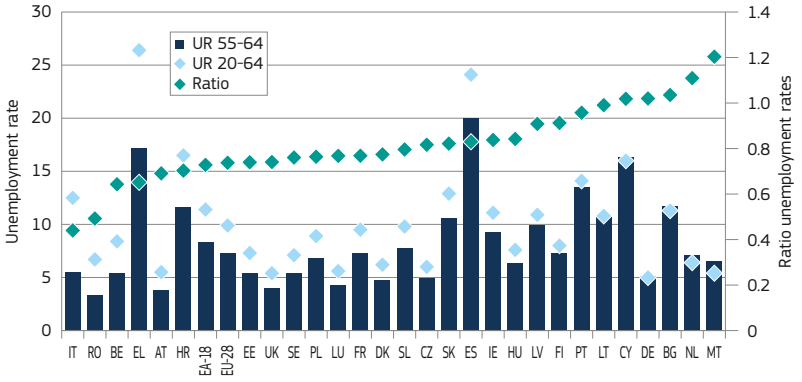
In most Member States, the unemployment rate of older people is lower than for the population aged 20-64, especially in Italy, Romania, Belgium, Greece, Austria and Croatia, while in

Chart 34: Employment rates of 55-64 in 2005 and 2014, by Member State



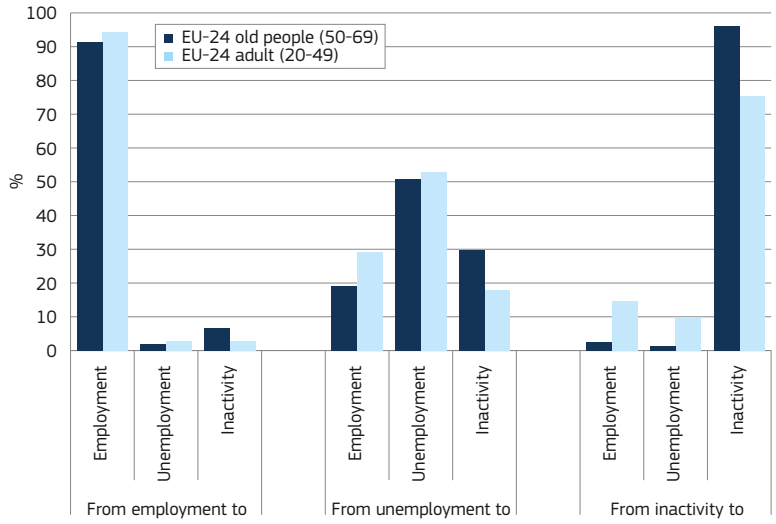
Source: Eurostat [lfsa_ergan].

Chart 35: Unemployment rate of older people (55-64), 2014



Source: 2014 LFS [lfsa_urgan].

Chart 36: Yearly labour market transitions of older workers (50-69) versus core active-age population (20-49), EU-24 in 2012-2013



Source: DG EMPL calculations based on experimental EU-LFS longitudinal ad-hoc extractions.

Note: Based on Eurostat extractions from longitudinal LFS. No data for Belgium, Luxembourg, the Netherlands and Malta. Latest data available.

others (Cyprus, Germany, Bulgaria, the Netherlands and Malta) unemployment particularly affects older people slightly more than the 20-64 age group (Chart 35). A distinguishing feature of unemployment among older people is the duration of their unemployment. Indeed, the share of long-term unemployment is higher among older people than among younger age groups (see Chapter II.2).

4.2.3. Labour market transitions are less dynamic for older people

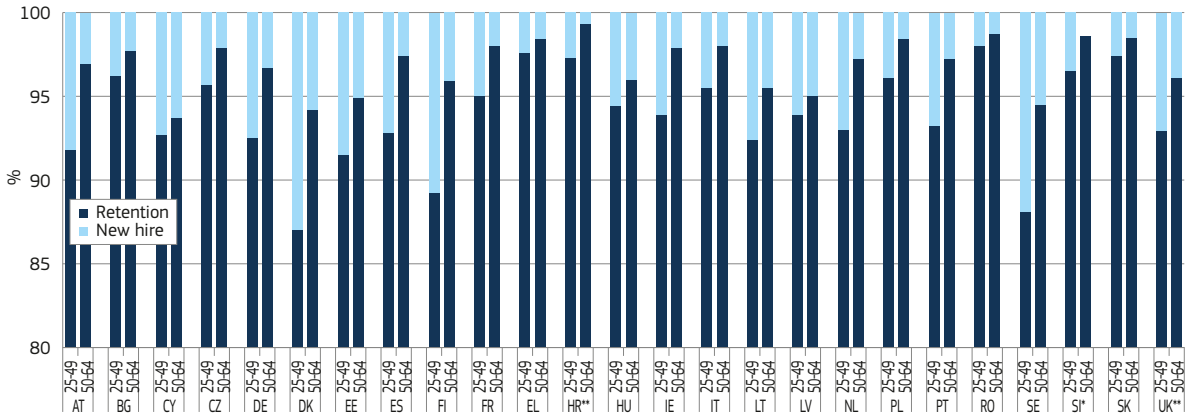
The transition rate of older people (aged 50-69) from employment to employment is slightly lower (by around 3 percentage points) than for younger age groups (20-49), reflecting higher transitions to inactivity (by around 4 ppt), while transitions to unemployment are slightly lower (by around 1 ppt, see Chart 36).

Once older people become unemployed or inactive, it is more difficult for them to get back to employment. Once unemployed, they are more likely to become or remain inactive (by around 12 ppt, see Chart 36) and less likely to return to employment (by around 10 ppt). Furthermore, older people remain unsurprisingly much more frequently in inactivity than others once they have entered into it.

A less active rotation within employment for older workers...

A key factor determining longer working lives for older people is dynamism of the labour market. This can be captured by the share of workers who remain on the same job or who change job over 1 year. The share of employed older workers who stay in the same job is higher than that of younger workers (Chart 37).

Chart 37: Transitions of older workers (50-64) within employment by Member State, 2013-2014



Source: DG EMPL calculations based on experimental EU-LFS longitudinal ad-hoc extractions.

Note: No data for Belgium, Luxembourg and Malta and the United Kingdom. Latest data available. * Data for new hires have a limited reliability in Slovenia and Croatia (for the age group 50-64 years old). In addition, France has breaks in the series. ** Due to the limited size of the longitudinal sample in 2013-2014 data for UK refers to 2010-2011 and for Croatia to 2012-2013.

Chart 38: New hiring rates for older workers (50-64) and younger ones (25-49)

Source: DG EMPL calculations based on experimental EU-LFS longitudinal ad-hoc extractions.

Note: No data for Belgium, Luxembourg, and Malta. Latest data available. * Data for new hires have a limited reliability in Slovenia and Croatia (for the age group 50-64 years old). In addition, France has breaks in the series. ** Due to the limited size of the longitudinal sample in 2013-2014 data for UK refers to 2010-2011 and for Croatia to 2012-2013.

Chart 39: Rehiring rates in employment for 50-64 year olds and employment rate of 50-64 year olds

Source: DG EMPL calculations based on experimental EU-LFS longitudinal ad-hoc extractions.

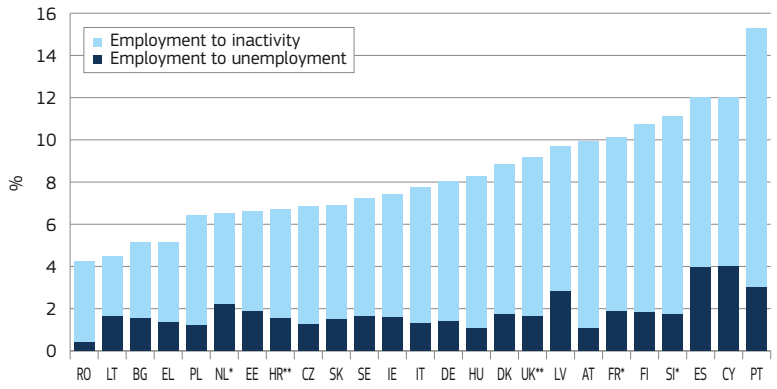
Notes: No data for Belgium, Luxembourg, and Malta. Latest data available. * Data for new hires have a limited reliability in Slovenia and Croatia (for the age group 50-64 years old). In addition, France has breaks in the series. ** Due to the limited size of the longitudinal sample in 2013-2014 data for UK refers to 2010-2011 and for Croatia to 2012-2013. Rehiring rates expressed as a share of the total number of people in the age bracket 50-64.

Conversely, the share of older workers who are working in a new job is relatively low and lower than for younger people. The share of people working in 2 consecutive years and currently working in a new job ranges from 1 % to 6 % for older people and from 2 % to 13 % for younger workers (see Chart 38).

In some Member States (e.g. Sweden, Denmark) new hiring rates of older workers are relatively high compared to other European countries though they remain low compared to younger workers. Comparatively high unemployment and low transition rates for older workers in countries such as Greece, Romania or Slovakia stress the need to develop labour markets for older workers in order to promote longer working lives effectively.

Actually when also taking into account the employment rate for older workers (see Chart 39), there appears to be a strong link between the rehiring rate (expressed as a share of the population aged 50-64) and the overall employment rate of 50-64 year old people, with Member States experiencing rates lower than 1 % reaching employment rates of 50 % for the 50-64 population while those with rates above 3 % acknowledging levels around 70 % or above (with the exception of Cyprus).

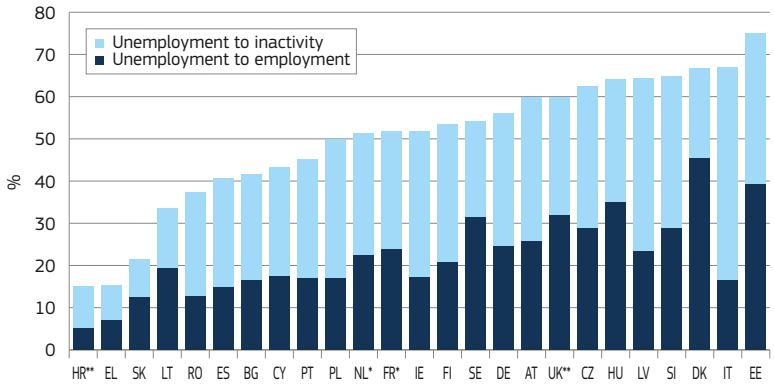
Chart 40: Transitions of older people (50-69) from employment by Member State, 2013-2014



Source: DG EMPL calculations based on experimental EU-LFS longitudinal ad-hoc extractions.

Notes: No data for Belgium, Luxembourg, and Malta. Latest data available. Member States sorted by ascending levels of transitions out of employment. *Data have a limited reliability for Slovenia. In addition, data have breaks in the series for France, the Netherlands and UK. ** Due to the limited size of the longitudinal sample in 2013-2014 data for UK refers to 2010-2011 and for Croatia to 2012-2013.

Chart 41: Transitions of older people (50-69) from unemployment by Member State, 2013-2014



Source: DG EMPL calculations based on experimental EU-LFS longitudinal ad-hoc extractions.

Notes: No data for Belgium, Luxembourg and Malta. Latest data available. Member States sorted by ascending levels of transitions out of employment. *Data have breaks in the series for France, the Netherlands, Croatia and UK. ** Due to the limited size of the longitudinal sample in 2013-2014 data for UK refers to 2010-2011 and for Croatia to 2012-2013.

... and a lower probability of finding a new job when becoming unemployed

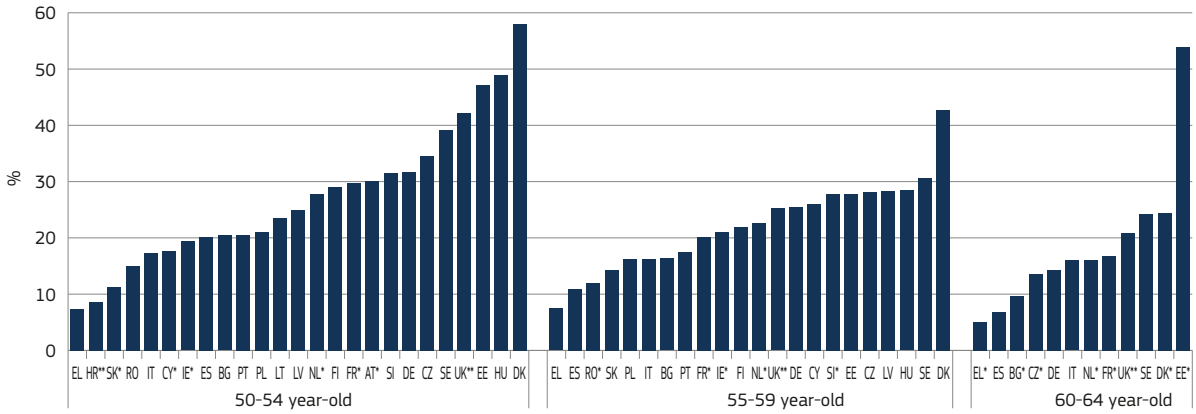
Another key factor determining longer working lives for older people is the probability of finding a new job if they lose their previous job. Member States differ significantly in the levels of transitions out of employment of 50-69 (see Chart 40), with high flows towards inactivity in some Member States (in particular Portugal) or unemployment (in particular Portugal, Spain, Cyprus, Latvia and the Netherlands).

Once unemployed, older workers are more likely to become inactive, especially in Greece, Slovakia and Romania (Chart 41) and less likely to return to employment. In some Member States, older people have a relatively high risk of becoming unemployed (Spain and Cyprus), while in others, unemployed people often move into inactivity (especially in Italy and Latvia) (Chart 41).

In this context, Member States also differ greatly in the dynamism of labour markets for older unemployed people, with Greece having the lowest transition from unemployment back to employment (less than 7%) and Denmark the highest (above 40%).

Member States also differ in the extent to which ageing affects this probability for older people, with Italy having the smallest difference between old age groups. Member States with lower transition rates from unemployment to employment tend to have a more homogenous

Chart 42: Transition rates from unemployment to employment for older people by age group, 2013



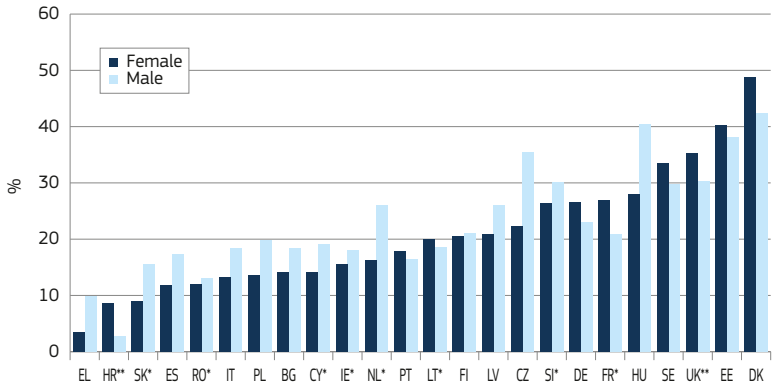
Source: DG EMPL calculations based on experimental EU-LFS longitudinal ad-hoc extractions.

Note: Data for some Member States are not reported due to reliability constraints. * Data in the age group 50-54 years have a limited reliability for Croatia, Slovakia, Cyprus, Ireland and Austria. Data in the age group 55-59 years old have a limited reliability for Romania, Ireland and Slovenia. Data in the age group 60-64 have a limited relability for Greece, Bulgaria, Czech Republic, UK, Denmark and Estonia. In addition, the Netherlands, France and UK have breaks in the series. ** Due to the limited size of the longitudinal sample in 2013-2014 data for UK refers to 2010-2011 and for Croatia to 2012-2013.

distribution among different older age groups (Chart 42).

In most Member States (for which we have reliable data) the transition rates from unemployment to employment for females are lower than for males, although in a number of Member States (especially in Denmark and France) they are higher (Chart 43). Individuals with a higher level of education have a higher probability of finding a job if unemployed than those with lower education levels, in particular in countries like Bulgaria, Estonia and the Netherlands, while in other countries (e.g. Denmark and France) the level of education is less important (Chart 44).

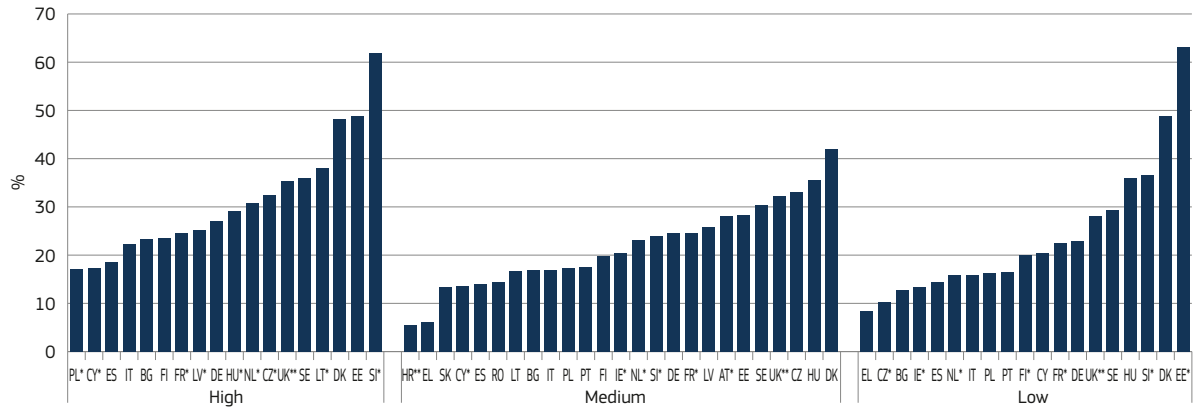
Chart 43: Transition rates from unemployment to employment for older people (50-69) by gender, 2013



Source: DG EMPL calculations based on experimental EU-LFS longitudinal ad-hoc extractions.

Note: Data for some Member States are not reported due to reliability constraints. * Data have a limited reliability for Cyprus, Ireland, Lithuania, Romania, Slovenia, Slovakia and Croatia. In addition, the Netherlands, France and UK have breaks in the series. ** Due to the limited size of the longitudinal sample in 2013-2014 data for UK refers to 2010-2011 and for Croatia to 2012-2013.

Chart 44: Transition rates from unemployment to employment for older people (50-69) by skill levels, 2013



Source: DG EMPL calculations based on experimental EU-LFS longitudinal ad-hoc extractions.

Note: Data for some Member States are not reported due to reliability constraints. * Data for individuals with low educational level have a limited reliability in Czech Republic, Estonia, Finalnd, Ireland and Slovenia. Data for individuals with medium educational level have limited reliability in Austria, Cyprus, Ireland, Slovenia and Croatia. Data for individuals with high educational level have limited reliability in Cyrpus, Czech Republic, Hungary, Lithuania, Latvia, Poland and Slovenia. In addition, the Netherlands, France and UK have breaks in the series. ** Due to the limited size of the longitudinal sample in 2013-2014 data for UK refers to 2010-2011 and for Croatia to 2012-2013.

4.3. Where, why and how older people work – a mapping of Member States

4.3.1. Some Member States have better labour market outcomes for older people, while there may be a trade-off with social outcomes

A comparison of different countries' experiences can be useful in identifying which characteristics are associated with better outcomes (Valia-Catanda et al., 2014). In this section, Member States are grouped on the basis of a Cluster analysis based on three main dimensions, before reviewing the different main characteristics according to the results of the Cluster analysis. The three main dimensions considered are the following ([46]):

- the ageing pressure on social protection spending as measured by the old age dependency ratio and by social expenditure on old age and survivors as a share of total expenditure;
- Europe 2020 and MIP broadly-relevant labour market outcomes that are specific for older people (such as activity, employment and unemployment ratio ([47]));
- Europe 2020 broadly-relevant social outcomes for older people (risk of poverty or social exclusion, inequality ([48])) and the adequacy of pensions as measured by the ratio between the median income of retired people over 65 and employed people over 18.

The Cluster analysis results in five different groups (Chart 45), characterised as follows:

- Cluster 1 (Germany, Sweden, Finland, the Netherlands, Denmark, United Kingdom) with good employment and social outcomes and a moderate relative income of older people;

([46]) For details of the methodology of the Cluster analysis, which is common with the former section, see ESDE 2011 (p. 238).

([47]) We use the unemployment ratio between the population aged 55-64 and 20-64 to avoid cyclical effects on unemployment affecting the analysis of the structural characteristics of the old age population.

([48]) Inequality is measured by the income quintile share ratio S80/S20.

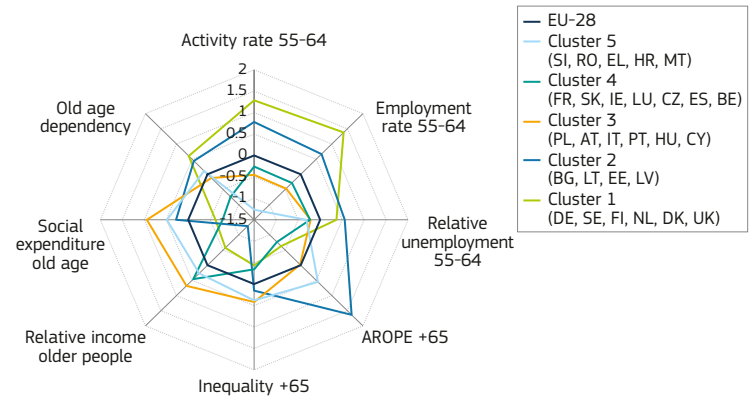
- Cluster 2 (Bulgaria, Lithuania, Estonia, Latvia) with good employment and very low social outcomes;
- Cluster 3 (Poland, Austria, Italy, Portugal, Hungary, Cyprus) with intermediate employment and social outcomes, good relative income of older people and social expenditure skewed towards pensions;
- Cluster 4 (France, Slovakia, Ireland, Luxembourg, Czech Republic, Spain, Belgium) with intermediate employment and very good social outcomes in a context of no particular ageing pressure;
- Cluster 5 (Slovenia, Romania, Greece, Croatia, Malta) with low employment and social outcomes.

4.3.2. Good performance does not always reflect a better position of older people

Good performance of some Member States in terms of elderly outcomes does not always reflect a relatively positive position for older people, but rather an overall good performance for the population as a whole. For instance, the unemployment rate and AROPE of older people is higher than for the overall working-age population in Germany and the Netherlands, which have relatively good employment and social outcomes for elderly people, compared to other EU countries (including a relatively low unemployment rate). On the other hand, in some of the countries with intermediate/low employment and social outcomes for the elderly, the elderly are relatively better off when compared with younger age groups (in particular in Italy, Romania and Slovakia) (Chart 46 and Appendix). To summarise, the relative position of older workers with respect to younger age groups is:

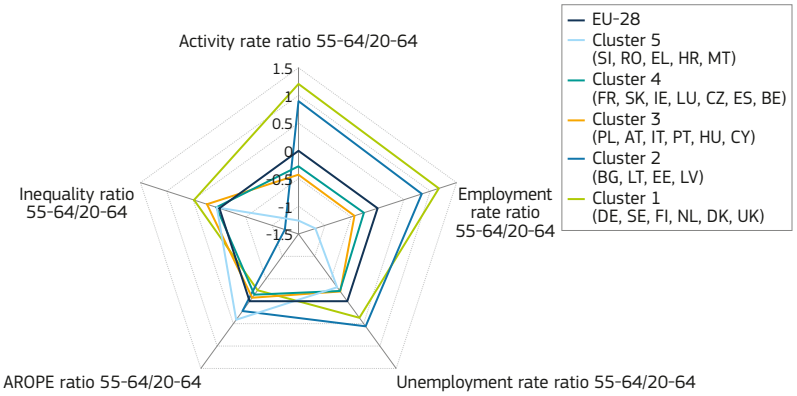
- Good for employment outcomes, but not always good for social outcomes and unemployment in Cluster 1;
- Good for employment outcomes and inequality, but not always good for unemployment and poverty and social exclusion in Cluster 2;
- Intermediate for employment outcomes and in some cases considerably better social and unemployment outcomes in Cluster 3;
- Intermediate for employment outcomes and in some cases considerably better social and unemployment outcomes in Cluster 4;
- Low for employment outcomes, with often a better situation in terms of unemployment in Cluster 5.

Chart 45: Main outcomes



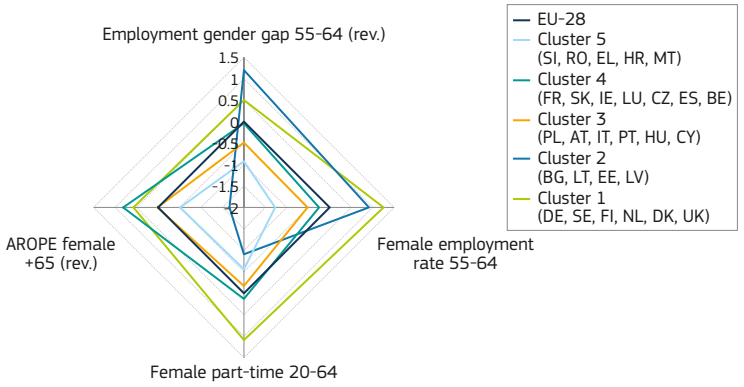
Note: See the Appendix (Table A.12) for a description of the variables used.

Chart 46: Relative position of older people



Note: See the Appendix (Table A.12) for a description of the variables used.

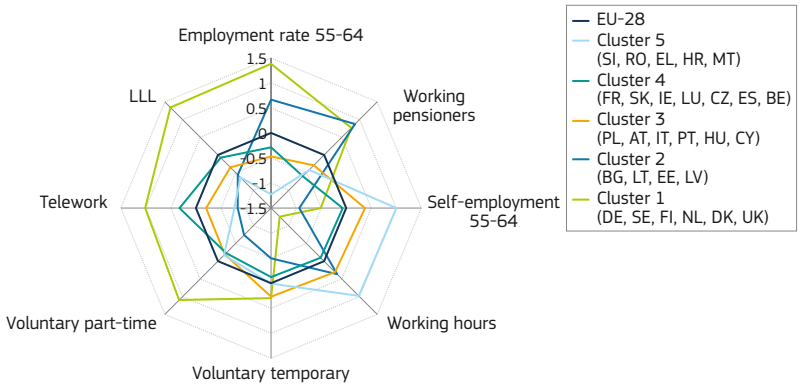
Chart 47: Gender dimension



Note: See the Appendix (Table A.12) for a description of the variables used.

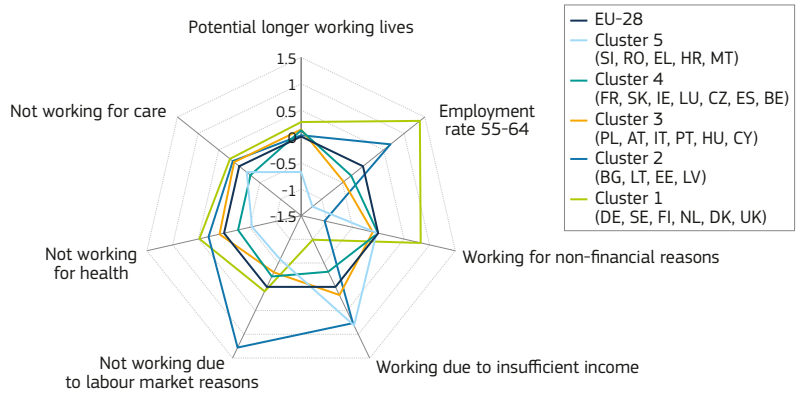
A gender perspective of outcomes for older people shows that the performance of clusters is as for the main outcomes with minor changes only. In particular, social outcomes for older women are not as good as overall in Cluster 1 (especially in Sweden and Finland), while in terms of the employment gender gap for older people, Cluster 2 performs the best (Chart 47).

Chart 48: Labour market structure



Note: See the Appendix (Table A.12) for a description of the variables used.

Chart 49: Reasons for working/not working



Note: See the Appendix (Table A.12) for a description of the variables used.

4.3.3. Older people like to work longer if they work less, more flexibly and continue to be trained

In terms of labour market structure (Chart 48):

- Cluster 1 (Germany, Sweden, Finland, the Netherlands, Denmark, United Kingdom) is characterised by a very large share of working pensioners, very high participation in lifelong learning (LLL), very large share of telework and voluntary part-time work, very short working hours and a low share of self-employment;
- Cluster 2 (Bulgaria, Lithuania, Estonia, Latvia) is characterised by a very large share of working pensioners, low participation in LLL, low share of telework, voluntary part-time, intermediate working hours and a very low share of self-employment;
- Cluster 3 (Poland, Austria, Italy, Portugal, Hungary, Cyprus) is characterised by a low share of working pensioners, low participation in LLL, low share of telework, voluntary part-time, high temporary and involuntary temporary contracts, intermediate working hours and a high share of self-employment;
- Cluster 4 (France, Slovakia, Ireland, Luxembourg, Czech Republic, Spain, Belgium) is characterised by a low share of working pensioners, low participation in LLL, low share of voluntary part-time, but in most cases a large share of telework;
- Cluster 5 (Slovenia, Romania, Greece, Croatia, Malta) is characterised by a low share of working pensioners, low participation in LLL, low share of telework, voluntary part-time, long working hours and a high share of self-employment.

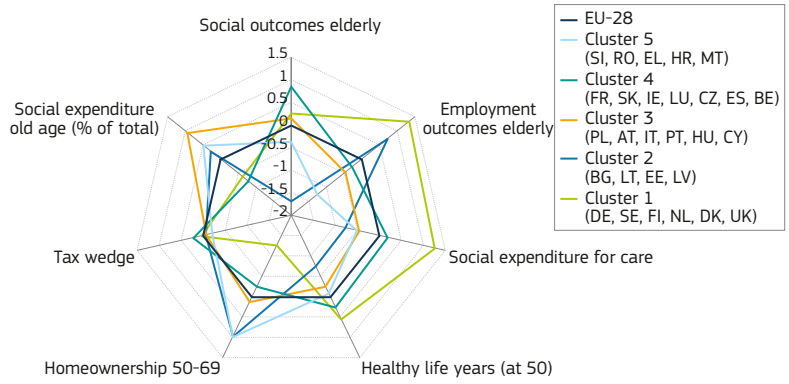
4.3.4. Working for non-financial reasons increases the potential for longer working lives

Chart 49 shows the position of each Cluster in terms of the share of older people who would have liked to work longer (potential for longer working lives), the reasons for having stopped working (health, labour market) and the reasons for continuing working while receiving an old-age pensions for those working, split into financial and non-financial reasons (Appendix). The potential for longer working lives is considerable in Portugal, Spain, Estonia, Denmark and the United Kingdom (above 40% of people receiving old-age pensions).

The main reason for leaving work is reaching eligibility for a pension in most Member States, especially in Bulgaria, the Czech Republic, Malta and Slovenia (above 80%), while not working for lack of care services is relatively important in the United Kingdom, Cyprus, Ireland, Romania (above 7%). However, countries differ considerably in the other reasons for working or not working while receiving an old-age pension:

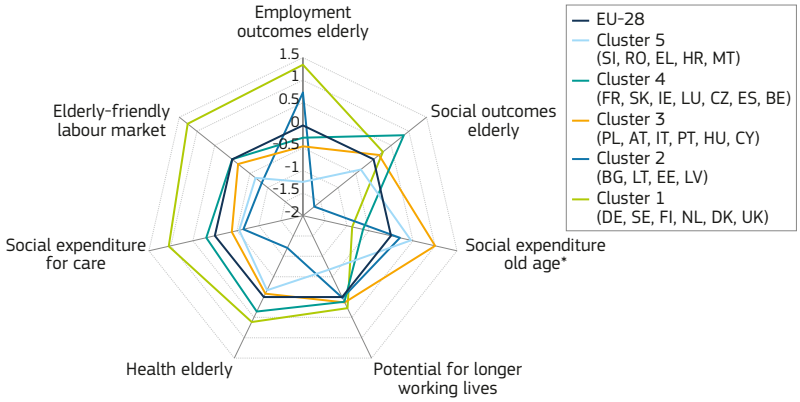
- Cluster 1 (Germany, Sweden, Finland, the Netherlands, Denmark, United Kingdom) has a large share of pensioners working for non-financial reasons, considerable importance of health for quitting work (due to the selection of non-working older people in these Member States, which is lower than in others);
- Cluster 2 (Bulgaria, Lithuania, Estonia, Latvia) has a large share of pensioners working for financial reasons and not working because they could not find a job and for health reasons;
- Cluster 3 (Poland, Austria, Italy, Portugal, Hungary, Cyprus) has a relatively low share of older people not working because they could not find a job;
- Cluster 4 (France, Slovakia, Ireland, Luxembourg, Czech Republic, Spain, Belgium) has a relatively low share of older people working for financial reasons and not working for health reasons;
- Cluster 5 (Slovenia, Romania, Greece, Croatia, Malta) has a large share of pensioners working for financial reasons (due to the selection of the fewer pensioners working), while health, labour market and service care do not seem to be important reasons for not working as the main reasons remain having reached pensionable age.

Chart 50: Health, tax and social expenditure



Notes: 'Social outcomes elderly' is the average of the standardised values of AROPE over 65, inequality over 65 and relative income of older people. 'Employment outcomes elderly' is the average of the standardised values of employment and activity rates of old people. See the Appendix (Table A.12) for a description of the variables used.

Chart 51: Relevant dimensions for longer working lives, by cluster



Notes: 'Social outcomes elderly' is the average of the standardised values of AROPE over 65, inequality over 65 and relative income of older people. 'Employment outcomes elderly' is the average of the standardised values of employment and activity rates of old people. 'Elderly friendly labour market' is the average of the standardised values of hours of work (reverted), telework, voluntary part-time and temporary work. See the Appendix (Table A.12) for a description of the variables used. * = data on 'social expenditure old age' for Cluster 4 excludes Ireland. 'Elderly friendly labour market' is an indicator based on the average of the standardised values of hours of work, voluntary part-time, voluntary temporary work and telework.

4.3.5. Good health and a balanced social expenditure

Other dimensions represent important factors for explaining longer working lives (see DRIVERS, 2015), such as health, wealth, social expenditure and taxation (more details in the Appendix). Indeed, older people may not continue working because they have to take care of relatives, they are in bad health or have fewer financial incentives because of high levels of their own wealth, the good relative income of older people or a high tax wedge. Chart 50 shows that:

- Cluster 1 (Germany, Sweden, Finland, the Netherlands, Denmark, United Kingdom) is characterised by high expenditure on care services (child and long-term care), good health and low outright homeownership;
- Cluster 2 (Bulgaria, Lithuania, Estonia, Latvia) is characterised by high weight of pensions in total social expenditure, poor health and low expenditure on care services;
- Cluster 3 (Poland, Austria, Italy, Portugal, Hungary, Cyprus) is characterised by poor health, low expenditure on care services and high expenditure on pensions;
- Cluster 4 (France, Slovakia, Ireland, Luxembourg, Czech Republic, Spain, Belgium) is characterised by high expenditure on care services and low expenditure on pensions;
- Cluster 5 (Slovenia, Romania, Greece, Croatia, Malta) is characterised by low expenditure on care services, high expenditure for pensions and high outright homeownership.

4.3.6. A summary of relevant dimensions for longer working lives

Chart 51 summarises the various dimensions discussed above and the performance of clusters in terms of employment and social outcomes:

- Cluster 1 (Germany, Sweden, Finland, the Netherlands, Denmark, United Kingdom) associates good employment and social outcomes with older person-friendly labour markets, good health and high expenditure on care services;
- Cluster 2 (Bulgaria, Lithuania, Estonia, Latvia) has good employment outcomes, despite a non-favourable labour market for older people, poor health and low expenditure on care, with very poor social outcomes;
- Cluster 3 (Poland, Austria, Italy, Portugal, Hungary, Cyprus) has intermediate employment outcomes with below average labour market, care services and health conditions, while high social expenditure on pensions is associated with better than average social outcomes;
- Cluster 4 (France, Slovakia, Ireland, Luxembourg, Czech Republic, Spain, Belgium) has very good social outcomes, with below-average expenditure on pensions;
- Cluster 5 (Slovenia, Romania, Greece, Croatia, Malta) has insufficient social outcomes, despite high expenditure on pensions, and an unfavourable labour market with poor expenditure on care associated with poor employment outcomes, worsened by a lack of potential for longer working lives.

Chart 51 shows two models of successful longer working lives, as represented by Cluster 1 and 2. Although Cluster 2 has worse social outcomes than Cluster 5, the similarity of some dimensions suggests some room for improvement in terms of employment outcomes in Cluster 5. The next section (regression) will present the importance of different factors in explaining employment and social outcomes for older people and help to explain why, for example, Malta does not perform as well as Latvia in terms of employment outcomes.

4.4. Socio-demographic and policy factors and longer working lives

This section reviews in a consistent manner various factors, including institutional characteristics, which are linked to longer working lives (see Appendix). As underlined by the analysis of the transition rates of older people on labour markets, on the one hand workers wish to retire early and on the other hand employers may be reluctant to hire older workers (see also Vodopivec and Dolenc, 2008). New hires of older people are relatively scarce and the main reason for leaving a job is often the fact that pensionable age has been reached.

Table 6: Regression coefficients of socio-demographic and institutional factors on the employment rate of older people (50-69)

	Women	Men	Women	Men	Women	Men
Year	0.345**	0.009	0.370**	0.03	0.199	-0.042
Population growth	-0.399	-0.658	-0.255	-1.479**	-2.838**	-1.965**
Reference age 50-54						
Age 55-59	-14.983**	-11.413**	-14.691**	-11.281**	-15.161**	-11.262**
Age 60-64	-43.146**	-40.702**	-42.703**	-40.934**	-43.722**	-40.696**
Age 65-69	-58.653**	-62.778**	-59.356**	-63.238**	-59.359**	-62.650**
Reference education: low						
Education: medium	10.125**	7.904**	10.542**	8.230**	10.308**	7.987**
Education: high	24.984**	20.491**	24.965**	20.701**	24.710**	20.687**
Healthy life years	-0.351**	0.293**	-0.675**	0.460**		
Working hours	-0.499**	-0.486**	-0.425**	-0.299*		
Self-employment	-0.410**	0.190**	-0.053	0.220**		
LLL			0.671**	0.444**		
Relative income older people	-0.319**	-0.209**	-0.245**	-0.200**	-0.321**	-0.141**
Family expenditure cash	-0.505**	-0.311**			-0.131	-0.611**
Family expenditure in-kind	0.216**	0.170**			-0.004	0.017
Tax wedge	-0.095*	-0.270**	-0.071	-0.284**	-0.250**	-0.461**
Homeownership					-0.175**	-0.125**
R2 (adjusted)	0.807	0.869	0.827	0.876	0.804	0.867
Number of observations	2169	2307	2372	2477	1902	1998

Notes: Other controls included in the regressions are the employment rate of 25-49 year-olds, the unemployment rate of 50-64 year-olds and GDP growth. * for statistical significance at 5% level, ** at 1% level. The regressions are based on combinations of age group, gender, education level for each Member State and year from 2004 to 2012. See Appendix for a description of the variables used.

4.4.1. Demographic factors and education levels are the most important driver of longer working lives

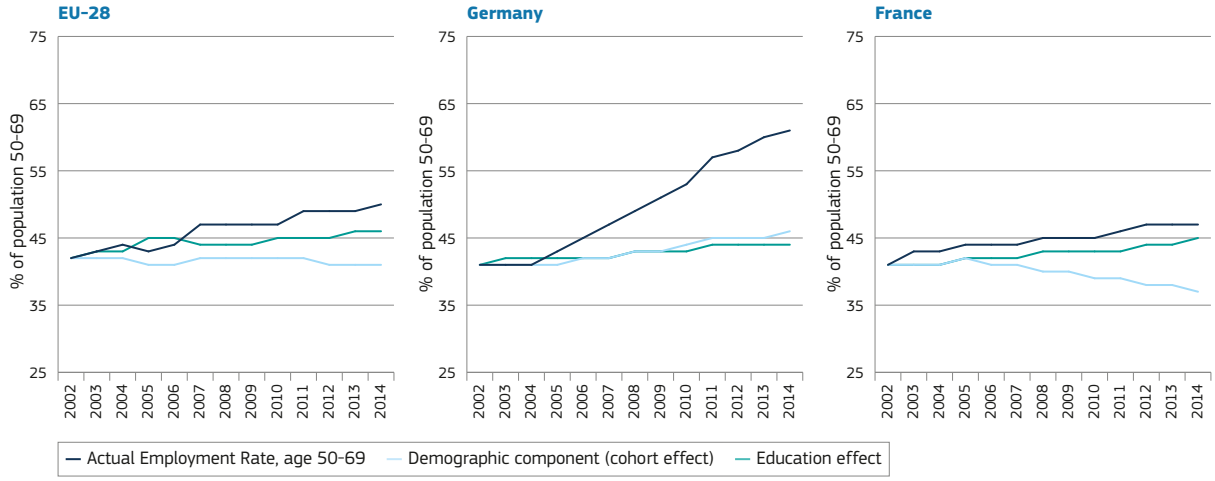
Structural changes in the workforce, notably age, gender, sector of employment and educational achievement, have contributed considerably to explaining the increase in the employment rate of older workers over the past decade. Some of these structural changes bring lasting and sustainable increases in the employment rate across all age groups and gender (for instance, the service sector accounts for most of the recent job opportunities for older workers). In addition, the past progress in educational attainment has meanwhile reached the 50+cohorts and results in higher activity and employment rates among older people.

Other changes influencing the past progress in older workers' employment rates have only been transitional. Notably, cohorts passing through the 55-64 year-old age bracket shift its composition by increasing (decreasing) the share of younger (older) cohorts within the bracket, thus influencing its overall employment rate to some extent. This cohort effect has been helping some EU countries since the start of this decade, whereas others have been facing a demographic head-wind. For instance, in Germany, a quarter of the shift in the employment rate of workers aged between 50 and 69 years since 2002 has been due to a cohort effect (Chart 52, demographic component curve), while France would have doubled its increase without the cohort effect.

For the EU as a whole, this demographic cohort effect in the recent past was negative, but only very modestly (Chart 52, demographic component curve). On the contrary, the positive impact of educational progress on the employment rate of people aged between 50 and 69 was much stronger, accounting for about half of the increase in the EU's employment rate since 2002. In France and other EU countries this education effect dominates the observed gains in older people's employment.

Furthermore, this positive effect will continue in the coming years as past

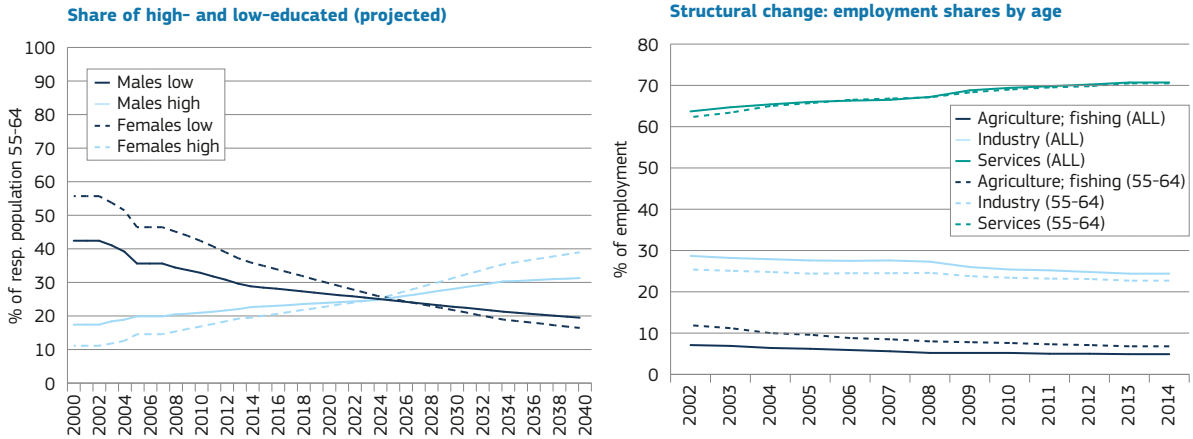
Chart 52: Educational component in employment (50-69 year-olds)



Sources: DG EMPL calculations based on Eurostat Europop2013 population projection, Main scenario, and Eurostat LFS.

Notes: For isolating the education effect, the employment rate per education level is kept constant at 2002 levels. This leaves any difference to the actual employment rate for the total age-range 50-69 to structural changes of the education mix within that age range.

Chart 53: Educational progress (55-64 year-olds)



Source: DG EMPL calculations based on Eurostat Europop2013 population projection, Main scenario, Eurostat LFS, national accounts.

Notes: The projection of the shares of high- and low-educated people (left) assumes a log-linear trend projection for young people (25-34 years) and no further progress at ages beyond 34; that is, the share for age 35-44 is equal to the share for 25-34 10 years earlier.

decades' educational progress among young people gradually impacts the older cohorts. It also has a strong gender component (as women's educational gains were stronger than those of their male peers).

Unlike the temporary cohort effect, educational progress reflects long-lasting structural change. The EU has seen a strong shift of employment away from the primary sector, mainly towards services. It can be expected that services will continue to be a job-creating engine for older workers and that labour demand for higher qualifications will increasingly meet a better-qualified labour supply, including at an older age (Chart 53).

Assuming the shares of high- and low-educated older people develop as currently projected, this would imply that the EU-wide education effect could generate additional active population of some 3 million people aged between 55 and 64 between now and 2040, an increase of 8% compared to today's employment levels of the same age group, or around 5 ppt of the employment rate.

4.4.2. Shorter working hours and lifelong learning

The option to work part-time, for a reduced number of hours or from home, together with other factors, can favour longer working lives. While older people have a preference for working shorter hours, non-standard working hours are common in some Member States (such as those in the countries in Cluster 1, see above) but not in others.

The analysis confirms the importance of older person-friendly labour markets for longer working lives, including shorter working hours and a larger participation in lifelong learning, as successfully shown by the Member States in Cluster 1 (see above). The employability of older workers is improved by participation in lifelong learning ([49]), and this appears to be especially significant for women.

Self-employment can represent an opportunity to work longer but it can also be associated with more demanding working conditions. Indeed, self-employed often acknowledge relatively weaker social security coverage ([50])

([49]) Due to the high correlation between LLL and family expenditure (almost 80%) the analysis includes alternative specifications excluding one of the two variables.

([50]) For a review of the social protection of the self-employed across European Member States please look at the 'Social Protection of the self-employed', Situation on 1 January 2014, MISSOC, European Commission, Directorate General for Employment, Social Affairs and Inclusion.

compared to employees. If social protection schemes were more inclusive for self-employed so as to provide them with voluntary and low-threshold arrangements along the five key functions of the social protection (pensions, healthcare and disability, unemployment, family, social exclusion and housing), this would allow older self-employed to better cope with a potential related falls in income.

The analysis shows a different impact of self-employment by gender: it is positively linked to the participation of men and negatively linked to the participation of women. However, controlling for the index of employment protection legislation (EPL) the coefficient for self-employment turns negative (regression not shown). On the other hand, a more rigid EPL is associated with longer working lives, while the permanence in employment of older people is often explained by retention in the same job, rather than by new hires (see above on transitions). This result can be interpreted on the one hand as a predominance of retention for longer working lives and on the other hand as an opportunity for older people to work as self-employed in the absence of strong employment legislation which would favour retention in the same job.

Other factors have not been reflected on in this analysis, such as the attitude of employers towards older workers. Employers can be reluctant to hire older workers, for instance as they could be perceived as being less suitable for training, and more resistant to change and to learning new technologies, although they can also be perceived as more reliable and having a better work ethic. Removing institutional obstacles and preventing age discrimination through initiatives such as information campaigns and the promotion of guidelines about the employment of older workers also appear to be useful for stimulating longer working lives (Vodopivec and Dolenc, 2008).

4.4.3. Expenditure for care and better health often contributes to longer working lives, while other factors can reduce them

An important incentive to work longer corresponds to the monetary benefit of staying active, which mainly depends on three factors: the levels of pensions, wages and taxation. The opportunity cost of working longer is measured in this analysis by the ratio of the income of retired people over 65 and the income of employed people over 18 (defined as relative income of older people in the regressions). This ratio is negatively linked with the employment rate of older workers (which can relate to both a relatively high income of retired people and a relatively low income of working-age individuals).

Outright homeownership ([51]) (a good proxy for wealth of households) is negatively associated with the labour market participation of older people, reflecting the fact that the economic incentives for working longer may then be weaker (with the exception of countries in Cluster 2 and, to a lesser extent, in Cluster 5).

The analysis confirms the positive link of employment with expenditure for in-kind family benefits ([52]), especially for older women. In-kind family benefits primarily include child daycare. Older people often take care of their grandchildren. Care of grandchildren is very common among older people in the Nordic countries. However, regular childcare is also more common among older people in Southern European countries. In countries such as Sweden, Denmark and France grandparents complement publicly-provided childcare, while in countries such as Italy, Greece and Spain grandparents substitute insufficient childcare (Hank and Buber, 2009). The interaction between a welfare system providing adequate childcare and labour markets that are favourable to older people (e.g. in terms of time arrangements) boosts the employment of both mothers and grandparents.

In addition, the analysis highlights the negative association between employment and family in cash expenditure, particularly for older women. However, due to endogeneity problems, a causal relationship between employment and in cash expenditure cannot be established as this is likely mediated by other non-observable variables (such as relative income of the household).

Furthermore, as regards health conditions, healthy life years at the age of 50 (averaged over the past 3 years) is positively associated with employment for men and negatively for women. For women, feedback effects from work to health cannot be excluded. Poor health may result in a departure from the labour market, while working conditions may impact on health status (Barnay and Debrand, 2006). While retirement makes people happier (Fonseca et al., 2014), health suffers from measurement problems. In this analysis, health is measured by an indicator mixing life expectancy (objective measure) and self-perceived health (subjective measure). Previous research finds that better health status increases the probability of employment of older people. However, research findings on the relationship between health and employment also show the existence of endogeneity problems related to the health indicator, which complicates the study of this relationship (Pinzon Fonseca, 2011). In addition, health does not explain cross-country differences in Europe in the employment rate of older people, which is better explained by differences in labour market and retirement mechanisms (Borsch-Supan et al. 2009; Barnay and Debrand, 2006).

4.4.4. Reducing the tax wedge for older workers can be more efficient and inclusive than other tax incentives

The tax wedge is negatively associated with the employment rate of older people, especially for men, highlighting the fact that fiscal incentives can prove useful for longer working lives. Such incentives can take the form of income tax exemptions for working pensioners or cuts in (employee or employer) social security contributions for older workers and can be effective in increasing employment and long-term growth.

Simulations show that cutting social security contributions could importantly boost longer working lives in some countries. In Italy, for instance, the effect could be considerable due to the high tax wedge and the large share of potential beneficiaries (old people). Other fiscal incentives are used to promote the employment of young and low-skilled people. Targeted cuts in social security contributions for older workers can prove more efficient in the long run than if targeted at other groups, as they do not affect the decision of investments in education and, consequently,

([51]) Due to the high correlation between outright homeownership and usual hours of work (above 80% for women), the regressions include only one of the two variables in each specification.

([52]) Expenditure for long-term care could not be included in the analysis due to data limitation problems.

productivity, investment and long-term growth (ESDE, 2011).

However, Member States often use fiscal incentives for older people in the form of fiscal support to build up private pension entitlements. Some Member States offer significant tax incentives for old age private pensions, with the aim of supporting the future adequacy of pensions. Belgium, for instance, has 0.14% of GDP foregone revenues for tax reductions on 3rd pillar pension savings, Germany 0.05% of GDP for incentives for old age pensions and Sweden 0.4% of GDP for reliefs on the return on pension savings (Mourre, 2014). These incentives are often regressive due to the distribution of the tax base (savings) and particularly when given in forms of tax deductions. The use of these foregone tax revenues could be used instead to cut social security contributions for older workers and result in an increase in employment, productivity and growth.

4.5. Main findings

Active ageing remains a challenge in most Member States

Increasing the employment rate of older persons, especially of women, is of crucial importance for the achievement of the EU2020 employment target and for the sustainability of pension expenditure. In 2014, the employment and social outcomes of ageing remain a challenge in most Member States and, more importantly, in Slovenia, Romania, Greece, Croatia and Malta.

This analysis shows the importance of a comprehensive assessment of the situation of older people. For instance, Bulgaria, Lithuania, Estonia and Latvia have relatively good employment rates of older workers, but very poor social outcomes. In these countries, older people continue working mostly because they lack adequate income, which is not a desirable model of longer working lives. A successful model of longer and more inclusive working lives is present in countries such as Denmark, Finland, Germany, Netherlands, Sweden and the United Kingdom, which combine well-functioning labour markets and an adequate and balanced social expenditure. In these countries older people continue working for non-financial reasons in older person-friendly labour markets (e.g. with reduced working hours and from home) and continue to be offered training by their employers. The high potential of even longer working lives in these countries underlines the success of this model. However, these countries are not always exempted from other problems, such as the difficulties of older unemployed people in finding a new job or the adequacy of their income once retired.

Achieving longer working lives rests on a combination of a more educated workforce…

A more educated workforce largely explains the improvements in the employment rate of older workers in the past decade. Highly educated older people continue to have a stronger attachment to the labour market. The increasing educational level of younger generations looks promising for the employment rate of future older persons, together with the fact that they will be fully affected by previous pension reforms.

… pension reforms that contribute to explaining the persistence of the labour market improvements of older people during the crisis…

The improvement in the labour market attachment of older workers continued during the recession almost everywhere in Europe. Reforms implemented in the past decades (such as the tightening of early retirement schemes, longer contributory periods, increase in the pensionable age, etc.) contribute to explaining this trend. Pensionable age plays a crucial role in the decision to continue working. While a uniform increase in the pensionable age may not match the life expectancy gradient for different occupations, strengthening incentives to work beyond pensionable age can be a fruitful route.

… and further fiscal and labour market incentives

Other types of social expenditure can support longer working lives, such as the provision of childcare and long-term care, while limiting tax expenditures for pension savings to cover a reduction in the tax wedge for older workers can also prove efficient and inclusive. Supporting older person-friendly labour markets, with flexible time and organisational arrangements also strengthens incentives for older people to work longer. Employers also play a role in creating more favourable labour markets for older people and the offer of continued training for older workers stimulates longer participation in the labour market.

5. Conclusion and main findings

The deterioration of the economic and labour market conditions since 2009 has put pressure on household incomes, as well as heavy financial strain on European welfare systems. As a result, increased attention is being paid to the potential for improvements in the efficiency as well as the effectiveness of social protection systems over the life-cycle.

This chapter reviews developments of social expenditure across the EU and assesses to what extent expenditure trends during the period 2010-2012 were focused on areas of greatest need. It then focuses on family policies and policies that promote the employment of older workers.

A gradual shift occurred in the structure of social protection expenditure over the period 2001-2012, in particular from unemployment and family expenditure towards pension and health expenditure (and to a lesser extent social exclusion and housing). This shift in the orientation of social protection expenditure has intensified in the most recent years for which data is available (2011 and 2012) when, in a context of high unemployment levels, average unemployment expenditure per unemployed person declined significantly (as well as to a lesser extent average family expenditure per child), while pension and health expenditure were relatively less affected. This shift coincided with the weakening of the stabilisation impact of social protection expenditure especially in 2012. Social protection expenditure grew strongly in the initial phase of the crisis, contributing significantly to the stabilisation of household incomes, before declining in 2011-2012, with a pro-cyclical impact, particularly in 2012. Expenditure growth then resumed in 2013 and more significantly in 2014.

Expenditure trends reflected both the changes in the numbers of potential beneficiaries (in particular the increase in unemployment), but also changes in average expenditure, significantly impacted by the design of indexation mechanisms. The effectiveness of

social protection systems' stabilisation function could be strengthened through smoothing indexation mechanisms over the cycle (this could be applied to most benefits, but in particular to pensions). Furthermore, average expenditure levels for the active-age population, in particular average unemployment expenditure per unemployed (as well as average family expenditure per child), should become less prone to decline over the cycle, for instance by making the duration of unemployment benefits more sensitive to the cycle. Smoothing indexation of benefits over the economic cycle could for instance be achieved by averaging inflation over several years. This would keep the target of price indexation of benefits unaffected over the economic cycle and could leave fiscal room for other benefits to fully play their stabilisation role.

Expenditure increases were not always channelled to areas of higher needs (and vice versa) in 2011 and 2012 when expenditure declined in real terms. Some countries with relatively high spending and low or average performance in given areas have actually experienced a relatively dynamic expenditure growth not reflecting actual needs, such as Cyprus and to a lesser extent Greece and Austria in pensions. Conversely, other Member States with relatively low levels of expenditure and low or average performance saw large declines in real levels of their expenditure, Bulgaria, Estonia, Latvia and Ireland in pensions, Spain, Latvia, Poland and Portugal in family, and Croatia and Italy in social exclusion and housing. Similar unwarranted declines in unemployment expenditure have occurred in nearly half of the Member States (Bulgaria, Croatia, Lithuania, Latvia, Greece, Spain, Hungary, Italy, Poland, Slovakia and Romania).

The analysis of family policies highlights the importance of a holistic approach across the different policy objectives including promotion of mothers' employment, family income support and investment in child well-being. The results presented show that a wide provision and use of childcare services as well as availability of part-time work are positively associated with higher rates of mothers' participation in the labour market, while gender pay gap and general spending on family benefits are associated negatively. Furthermore, while working provides protection against poverty, higher and more equally distributed family benefits are also connected with lower poverty rates, which underlines the importance of the redistributive impact of benefits as well as their general level.

While other risk factors exist, the labour market situation of parents is a powerful determinant of the conditions, in which children grow up and thus their opportunities in the long run. The higher the work intensity in the family, the lower the risk of poverty. In contract to its impact on maternal employment, female part-time work is associated with a higher poverty risk all other things being equal. This points to the need for combining flexible working conditions, which support mothers' labour market participation, with adequate income support.

All in all, adequate levels of paid parental leave, which maintain attachment to the labour market and financial incentives to work, together with affordable high-quality childcare services, play a crucial role in supporting mothers' employment. Reducing incentives to stay at home for long periods also needs to be accompanied by work opportunities for mothers of different educational levels, notably for mothers with low skills and immigration backgrounds. On the other hand, while full-time work for mothers appears desirable for both individual families and society, it might be associated with a double burden on mothers. In this respect, more gender-balanced working hours would also contribute to better reconciliation of work and family life. Greater flexibility at workplaces would also contribute to addressing the heterogeneity of household situations.

The analysis of social protection policies promoting longer working lives shows that the improvement in the labour market attachment of older workers continued during the recession almost everywhere in Europe. It stresses the importance of a comprehensive assessment of the situation of older people, as various Member States face different types of challenges.

The gradual ageing of more educated workforce cohorts largely explains the improvements in the employment rate of older workers in the past decade. Highly educated older people continue to have a stronger attachment to the labour market. Hence, the increasing educational attainment of younger generations looks promising for the employment rate of future older persons.

Pension reforms implemented in the past decades (such as the tightening of early retirement schemes, longer contributory periods, the increase in the statutory retirement age, etc.) also contribute to explaining the positive trend. The pensionable age plays a crucial role in the decision to continue working. While a uniform increase in the statutory retirement age may not match the life expectancy differences across socio-economic groups, strengthening incentives to work beyond retirement age can be a fruitful route.

Other types of social expenditure, such as the provision of childcare and long-term care, can prove efficient and inclusive in supporting longer working lives, while limiting tax expenditures linked to pension savings. Finally, flexible time and organisational arrangements, together with availability of continued training for older workers also strengthen incentives for older people to work longer and contribute to labour markets that are friendly to longer careers.

ANNEX 1: A STYLISED FRAMEWORK TO REVIEW THE EFFECTIVENESS AND EFFICIENCY OF SOCIAL PROTECTION SYSTEMS

The Social Protection Committee and the European Commission services have identified a set of key indicators to reflect in a stylised way the effectiveness and efficiency of social protection systems along five key functions: pensions (corresponding to old-age and survivors' expenditure), sickness and disability, unemployment, family and housing, and others.

The indicators below have been identified in this context and are used in this chapter. Following the approach developed in the review, for each of these dimensions, a score is derived for each Member State that measures the distance to the EU average as a share of the standard deviation: a score of 0 corresponds to a value of the indicator identical to the EU average and a score of +1 (-1) to a value above (below) the average of 1 standard deviation.

In the field of pensions

Expenditure

- Gross old-age and survivors' expenditure (source ESSPROS) per population aged 65+, relative to GDP per capita.

Income replacement

- Median relative income of people aged 65+ (source SILC): ratio between the median equalised disposable income of persons aged 65+ and the median equalised disposable income of persons aged between 0 and 64.
- Aggregate replacement ratio (source SILC): ratio of the median individual gross pensions (including all types of pensions) of people aged 65-74 and the median individual gross earnings of people aged 50-59 (excluding other social benefits).

Poverty protection

- At-risk-of-poverty rate among the population 65+, by gender (source SILC): share of the population 65+ living at-risk-of-poverty (at 60% of median equivalised disposable income threshold).

For the purpose of the analysis in this chapter, values for both men and women have been considered separately.

Longer and less interrupted working lives

- Employment rate for the population aged 55-64 (source LFS): Indication of the overall labour market integration of older workers.
- Average duration of working lives (DWL), by gender (source LFS): DWL measures the number of years a person aged 15 is expected to be active in the labour market throughout his/her life.

In the field of healthcare and disability

Since the framework does not cover this dimension, the chapter focuses on gross sickness and disability expenditure (source ESSPROS) as a share of GDP.

In the field of family expenditure

Expenditure

- Gross expenditure in cash (source ESSPROS): per population aged under 18 against GDP per capita.
- Gross expenditure in kind (ESSPROS): per population aged under 18 against GDP per capita.

Adequate income of households with children

- Relative income (SILC): relative equivalised disposable income of households with children compared to that of all households.

Preventing child poverty

- Child poverty (SILC): at-risk-of-poverty rate of the population aged 0-17 (at 60% of median equivalised disposable income threshold).
- Severe material deprivation (SILC): population aged 0-17 living in severe material deprivation.
- Poverty reduction by social transfers (source SILC): reduction in the share of children at-risk-of-poverty due to social transfers.

Child development / parents' labour market participation

- Childcare 0-3 (total) (SILC): share of children aged 0-3 in childcare (full-time and part-time).
- Childcare 3-mandatory school age (total) (SILC): share of children between age 3 and mandatory school age in childcare (full-time and part-time).

Parents' labour market participation

- Rate of women aged 20-49 with youngest child below 6 years of age.
- Involuntary part-time women (aged 20-49), (LFS): Involuntary part-time employment as percentage of total part-time employment.

In the field of unemployment benefits

Expenditure

- Gross expenditure (source ESSPROS): per unemployed person compared to GDP per capita for the population of active age.
- Expenditure on ALMP as a % of GDP (source LMP database).

Income replacement

- Coverage (source LFS): share of unemployed people (all lengths of unemployment spell) receiving unemployment benefits (both registered and not registered at public employment office) as a share of all unemployed people according to the ILO definition (both registered and not registered at public employment office).
- Net replacement rate (source OECD): net replacement rate in the initial period (2 months) of unemployment (case taken: single person, no children, average wage).
- Net replacement rate (source OECD): net replacement rate after 12 months of unemployment (case taken: single person, no children, average wage).

- Poverty rate of unemployed person (source SILC): share of unemployed living at-risk-of-poverty (at 60% of median equivalised disposable income threshold).

Reintegration into the labour market

- Unemployment rate (source LFS): according to the ILO definition.
- Long-term unemployed rate (source LFS): share of long-term (more than 1 year) unemployed (according to the ILO definition) in the total number of active persons in the labour market.
- Share of unemployed people participating in lifelong learning (source LFS).
- Unemployment trap (source OECD): average effective tax rate for a transition into full-time work for persons in unemployment insurance (case taken: 100% of average wage, single person).

In the field of social exclusion and housing

Expenditure

- Gross expenditure on social exclusion (source ESSPROS) as a share of GDP per capita.
- Gross expenditure on housing as a share of GDP per capita (ESSPROS).

Preventing poverty and social exclusion

- Poverty rate (SILC): share of total population living at-risk-of-poverty (at 60% of the median equivalised disposable income threshold).
- Severe material deprivation (SILC): share of population living in severe material deprivation (population aged 0-59).
- Jobless households (SILC): share of population living in very low work intensity households (population aged 0-59).
- Poverty reduction (SILC): relative reduction in the share of population living at-risk-of-poverty (as%) due to social transfers (excluding pensions).

(Re-)integration into the labour market

- Inactivity trap (OECD): average effective tax rate for a transition into full-time work for persons without entitlement to unemployment insurance but entitled to social assistance if applicable (case taken: 67% of average wage, single person).

Access to decent housing

- Housing cost overburden of the poor (SILC): share of population at-risk-of-poverty living in a household where the total housing costs (net of housing allowances) represent more than 40% of the total disposable household income (net of housing allowances).
- Overcrowding rate of poor people (source SILC): the percentage of the population at-risk-of-poverty living in an overcrowded household.

Annex 2: Family policies

Objectives of family policies

Gender equality, equality among women, and income inequality

Equality between men and women is one of the European Union's founding principles ([53]). Promoting gender equality is firmly connected to equal opportunities in the labour market. Because of the greater impact of family and caring responsibilities on women, the state needs to intervene to level the playing field.

Human capital theory proposes that the gender wage gap and occupational sex segregation are due to the periodic separation of women from work (Burchell et al., 2014). Interruptions in employment may result in skill depreciation that will lead to reduction in productivity and consequently lower wages. Policies that encourage mothers to stay home longer may reduce women's chances of gaining access to better-paid and more attractive jobs. Therefore, policies that actively offer incentives to mothers to retire from the labour market for long periods of time should be carefully studied and eventually dismantled.

Specific attention should be paid to the unequal use of cash-for-care systems by women from different socio-economic backgrounds; these policies may reinforce inequalities *among* women as women with lower socio-economic status are more likely to be trapped at home. However, rather than abruptly cut such programmes, the change should be accompanied by modifications in the labour market that would offer women with lower qualifications flexible job opportunities and inexpensive care services. In this same vein, Mandel (2012) highlights the advantages and disadvantages of social policies for different groups of women and concludes that there is a need to explore differentiated approaches to reconciling work and family, rather than addressing universal work-family tensions.

The OECD (2015b) analysis shows that higher female labour market participation also influences income distribution. A greater number of women in paid full-time employment lowers overall income inequality, and the recent increases in the female employment rate has contributed to lowering the Gini coefficient by 2.5 or more percentage points in Belgium, the Netherlands and Spain for example. However, due to assortative mating ([54]), i.e. the tendency of partners coming from similar socio-economic backgrounds to marry each other, and higher participation levels by high-skilled women, a rise in female employment could also increase income inequality. Therefore, policies that support paid work of lower-earning women in particular are needed.

Fertility – a traditional key concern of family policies

Fertility has traditionally been at the heart of family policies. The persistence of below-replacement fertility rates has been a concern in many European countries since the mid-1960s when fertility started declining. This phenomenon, together with increases in longevity, has been associated with the rising old-age dependency ratio, which describes the ratio between those of working-age and people over 65 years of age. The impact of fertility rates on economic growth through old-age dependency has put pressure on developing institutions that support families with children.

Vos (2009) writes that although population reproduction is fundamentally a micro-level decision, it is influenced by institutional factors. While women's increasing educational attainment, rising labour force participation and more ambitious career aspirations are often believed to have been drivers of declining fertility rate in the past, there is new evidence of a considerable shift in this regard. The relationship between female employment or education and fertility has been found to be positive in several studies (Oppenheimer, 1994; De Wit and Ravanera, 1998; Hoem, 2000; Ahn and Mira, 2002) and it appears that the Member States which currently have the highest birth rates are those which have created good conditions for mothers to pursue professional careers and which perform well in terms of female employment (European Commission, 2013).

Table A.1. Country-specific recommendations regarding female employment and the reduction of poverty and social exclusion made by the European Commission to the Member States in the context of the European Semester 2015 and 2014

Austria (2015): Strengthen measures to increase the labour market participation of older workers and women, including by improving the provision of childcare and long-term care services.

(2014): Reinforce measures to improve labour market prospects of people with a migrant background, women and older workers. This includes further improving child- and long-term care services. Improve educational outcomes in particular of young people with a migrant background, by enhancing early childhood education.

Bulgaria (2015): Increase the participation in education of disadvantaged children, in particular Roma, by improving access to good-quality early schooling.

(2014): In order to alleviate poverty, further improve the accessibility and effectiveness of social services and transfers for children and older people. Step up efforts to improve access to quality, inclusive pre-school and school education of disadvantaged children, in particular Roma.

Czech Republic (2015): Further improve the availability of affordable childcare.

(2014): Increase considerably the availability of affordable and quality childcare facilities and services, with a focus on children of up to 3 years old. Increase the inclusiveness of education, notably by promoting the participation of socially disadvantaged and Roma children in particular in early childhood education.

Estonia (2015): Ensure high-quality social and childcare services at local level.

(2014): Increase the efficiency and cost-effectiveness of family policy while improving the availability and accessibility of childcare.

Germany (2014): Address regional shortages in the availability of full-time childcare

([53]) With the entry into force of the Treaty of Amsterdam in 1999, the promotion of gender equality became one of the essential tasks of the European Community (Article 2 EC). This was reinforced in the Treaty of Lisbon in 2009. Equality between men and women is also an integral part of the Charter of Fundamental Rights of the European Union.

([54]) Data from the United States shows that assortative mating has increased since the 1960s and this affects income inequality significantly. If matching between partners was random, the Gini coefficient would fall from the 2005 level of 43 to 34 according to Greenwood et al. (2014).

facilities and all-day schools while improving their overall educational quality.

Hungary (2014): In order to alleviate poverty, implement streamlined and integrated policy measures to reduce poverty significantly, particularly among children and Roma.

Ireland (2015): Take steps to increase the work intensity of households and to address the poverty risk of children by tapering the withdrawal of benefits and supplementary payments upon return to employment and through better access to affordable full-time childcare.

(2014): Tackle low work intensity of households and address the poverty risk of children through tapered withdrawal of benefits and supplementary payments upon return to employment. Facilitate female labour market participation by improving access to more affordable and full-time childcare, particularly for low-income families.

Italy (2014): Improve the effectiveness of family support schemes and quality services favouring low-income households with children.

Malta (2014): Further improve the labour market participation of women, notably those wishing to re-enter the labour market by promoting flexible working arrangements.

Poland (2014): Continue efforts to increase female labour market participation, in particular by taking further steps to increase the availability of affordable quality childcare and pre-school education and ensuring stable funding.

Romania (2015): Increase the provision and quality of early childhood education and care, in particular for Roma.

(2014): Ensure better access to early childhood education and care. In order to alleviate poverty, increase the efficiency and effectiveness of social transfers, particularly for children.

Slovakia (2015): Improve the incentives for women to remain in or return to employment by improving the provision of childcare facilities. Increase the participation of Roma children in mainstream education and in high-quality early childhood education.

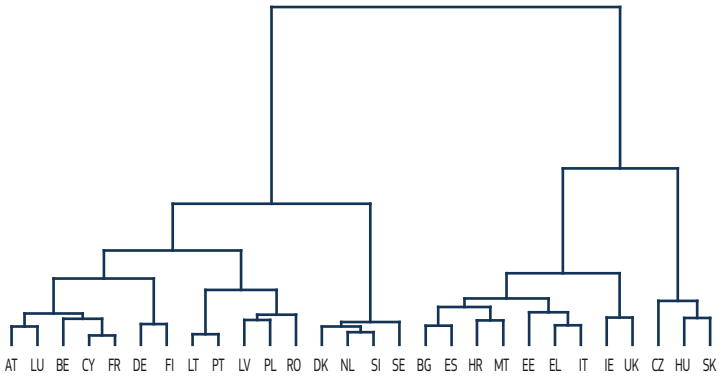
(2014): Improve incentives for women's employment, by enhancing the provision of childcare facilities, in particular for children below 3 years of age. Adopt systemic measures to improve access to high quality and inclusive pre-school and school education for marginalised communities, including Roma.

Spain (2014): Improve the targeting of family support schemes and quality services favouring low-income households with children, to ensure the progressivity and effectiveness of social transfers.

United Kingdom (2015): Further improve the availability of affordable, high-quality, full-time childcare.

(2014): Continue efforts to reduce child poverty in low-income households, by ensuring that the Universal Credit and other welfare reforms deliver adequate benefits with clear work incentives and support services. Improve the availability of affordable quality childcare.

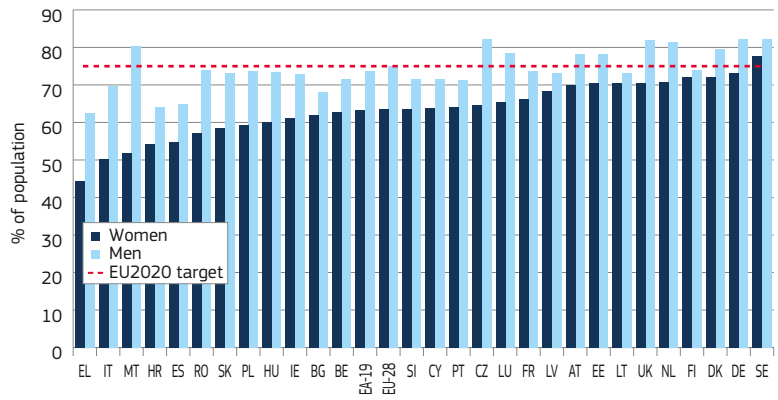
Chart A.1.: Dendrogram of family policy outcomes



Source: DG EMPL calculations based on the most recent Eurostat data (1).

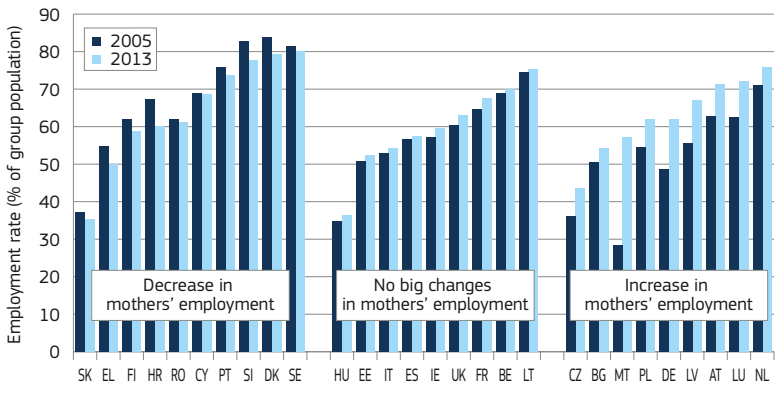
(1) The most recent data refers to the availability of the data at the time of writing in September 2015.

Chart A.2.: Employment rate and the EU2020 employment target, 2014



Source: Labour Force Survey.

Chart A.3.: Changes in mothers' employment 2005-2013



Source: Labour Force Survey.

Table A.2.: Family benefits and fertility rate, country clusters

	ECEC use above 3 (%)	ECEC use 0-2 (%)	Spending on family benefits (% GDP)	Share of in-kind benefits (of family benefits)	Social expenditure (% of GDP)	Distribution of family benefits (Q5/Q1)	Distribution of ECEC (0-2) use (Q5/Q1)	Fertility rate
AT	79	17	2.7	0.26	30.2	1.19	1.37	1.44
CY	80	25	1.6	0.13	23.1	0.70	3.98	1.39
FR	92	39	2.6	0.35	34.2	0.79	3.91	2.01
BE	98	46	2.1	0.14	30.8	1.16	2.72	1.79
LU	73	47	3.7	0.22	23.3	1.20	1.92	1.57
DE	89	28	3.2	0.34	29.5	1.16	1.23	1.38
FI	79	28	3.3	0.52	31.2	1.03	3.24	1.80
LT	74	10	1.4	0.29	16.5	5.32	0.55	1.60
PT	85	38	1.2	0.33	26.9	0.40	0.86	1.28
LV	79	23	1.0	0.20	14.0	3.15	2.82	1.44
PL	38	5	0.9	0.22	18.1	0.50	3.41	1.30
RO	51	6	1.3	0.31	15.6	1.77	2.08	1.53
SE	96	55	3.2	0.53	30.5	1.40	1.13	1.91
NL	86	46	1.1	0.36	33.3	0.60	2.48	1.72
DK	98	62	4.0	0.60	34.6	1.02	1.50	1.73
SI	91	39	2.2	0.27	25.4	0.92	1.01	1.58
BG	78	11	1.7	0.35	17.4	1.29	10.50	1.50
ES	90	35	1.4	0.64	25.9	6.89	3.15	1.32
EL	69	14	1.7	0.24	31.2	1.25	4.31	1.34
HR	47	11	1.6	0.06	21.2	0.76	2.41	1.51
EE	91	21	1.8	0.06	15.4	4.13	1.17	1.56
MT	92	20	1.2	0.17	19.4	0.23	1.19	1.43
IT	90	21	1.4	0.43	30.3	0.76	3.07	1.43
IE	89	29	3.4	0.18	32.5	0.64	3.98	2.01
UK	71	30	1.9	0.37	28.8	0.43	2.41	1.92
CZ	76	2	1.1	0.09	20.8	0.81	0.71	1.45
HU	84	10	2.7	0.22	21.8	1.33	1.99	1.34
SK	74	4	1.8	0.11	18.4	1.46	2.70	1.34
EU-28	80	26	2.0	0.28	25.0	1.51	2.56	1.56
EA-19	84	28	2.0	0.27	25.9	1.74	2.40	1.55

Sources: Eurostat (most recent data) and DG EMPL calculations based on EU-SILC 2012 [udb 2012](1).

(1) The most recent data refers to the availability of the data at the time of writing in September 2015.

Table A.3.: Employment rates and gaps, country clusters

	Employment rate of mothers with children below 6 years old	Employment rate of women without children	Employment rate of fathers of children below 6 years old	Employment gap of parents (fathers/ mothers)	Employment gap of women (childless women/mothers)	Gender gap in employment (ppt)
AT	71.3	85.7	93.3	1.31	1.20	8.2
CY	68.6	78.0	85.9	1.25	1.14	7.7
FR	67.7	80.4	87.9	1.30	1.19	7.4
BE	70.0	77.3	88.3	1.26	1.10	8.7
LU	72.0	83.1	92.6	1.29	1.15	12.9
DE	62.1	85.4	92.3	1.49	1.38	9.2
FI	58.7	82.5	90.9	1.55	1.41	1.9
LT	75.2	81.8	88.5	1.18	1.09	2.5
PT	73.8	70.5	85.3	1.16	0.96	7.1
LV	67.0	78.2	88.8	1.33	1.17	4.6
PL	62.0	77.4	90.6	1.46	1.25	14.2
RO	61.3	71.8	82.8	1.35	1.17	16.7
SE	80.1	79.1	93.2	1.16	0.99	4.6
NL	75.9	83.6	92.1	1.21	1.10	10.7
DK	79.4	76.9	92.2	1.16	0.97	7.3
SI	77.8	76.3	93.3	1.20	0.98	8.0
BG	54.3	72.6	78.6	1.45	1.34	6.1
ES	57.4	67.4	74.8	1.30	1.17	10.2
EL	50.0	54.3	81.9	1.64	1.09	18.3
HR	60.0	66.4	80.4	1.34	1.11	10.0
EE	52.3	87.1	91.8	1.76	1.67	7.7
MT	57.2	73.3	96.5	1.69	1.28	28.4
IT	54.3	63.7	87.2	1.61	1.17	19.4
IE	59.7	79.1	81.3	1.36	1.32	11.8
UK	63.0	83.8	91.2	1.45	1.33	11.3
CZ	43.7	85.8	94.2	2.16	1.96	17.5
HU	36.5	80.5	85.9	2.35	2.21	13.3
SK	35.4	77.6	87.4	2.47	2.19	14.6
EU-28	**62.4**	**77.1**	**88.2**	**1.47**	**1.29**	**10.7**
EA-19	**63.5**	**77.1**	**88.4**	**1.44**	**1.25**	**10.5**

Source: Eurostat (most recent data) (1).

(1) The most recent data refers to the availability of the data at the time of writing in September 2015.

Table A.4.: Working arrangements, country clusters

	Mothers' part-time work	Gender pay gap	Share of mother's earnings of total gross household income	Duration of maternity and parental leave (weeks)	Remuneration of maternity leave
AT	46.9	23.0	13.1	178	100
CY	17.2	15.8	28.0	36	72
FR	30.8	15.2	28.5	47	98.4
BE	41.4	9.8	27.6	51	72.7
LU	35.7	8.6	24.9	172	100
DE	47.0	21.6	18.3	170	100
FI	20.2	18.7	21.3	104	80.7
LT	11.1	13.3	20.5	63	100
PT	14.8	13.0	33.7	44.1	100
LV	9.6	14.4	25.9	68	80
PL	11.1	6.4	22.4	179	100
RO	11.1	9.1	17.9	122	85
SE	38.3	15.2	27.8	83	80
NL	76.8	16.0	26.6	:	100
DK	35.7	16.4	33.1	82	51.5
SI	14.9	3.2	29.8	52	100
BG	3.1	13.5	18.3	85	90
ES	25.6	19.3	25.6	172	100
EL	13.2	15.0	19.7	225	100
HR	7.8	7.4	19.6	170	100
EE	12.8	29.9	21.1	176	100
MT	29.3	5.1	16.1	96	100
IT	32.2	7.3	21.4	40	80
IE	35.0	14.4	22.3	198	26.1
UK	42.5	19.7	17.0	70	22.5
CZ	10.4	22.1	13.3	184	70
HU	8.7	18.4	13.8	51	70
SK	6.9	19.8	16.9	190	65
EU-28	**24.6**	**14.7**	**22.3**	**115**	**84**
EA-19	**27.4**	**14.9**	**23.2**	**110**	**88**

Sources: Eurostat (most recent data), DG EMPL calculations based on EU-SILC 2012 [udb 2012], and European Parliament (2014) (1).

(1) The most recent data refers to the availability of the data at the time of writing in September 2015.

Table A.5.: Poverty and inequality, country clusters

	AROPE total population	Share of family benefits of family disposable income	Income inequality among families	AROP children	Children living in households of very low work intensity	Relative income of families (median family income / total median income)	Relative severe material deprivation of children (child SMD/adult SMD)
AT	18.8	14.3	24.7	18.6	6.3	0.93	1.68
CY	27.8	6.4	26.9	15.5	5.1	0.99	1.21
FR	18.1	9.2	28.4	18.0	6.5	0.96	1.25
BE	20.8	10.9	24.9	17.2	13.2	1.02	1.10
LU	19.0	15.5	27.9	23.9	3.7	0.87	1.50
DE	20.3	13.4	25.6	14.7	6.7	1.01	1.06
FI	16.0	11.9	23.0	9.3	5.9	1.02	0.69
LT	30.8	8.2	31.5	26.9	9.2	1.00	1.19
PT	27.5	3.8	33.2	24.4	8.4	0.95	1.35
LV	35.1	8.5	36.7	23.4	10.2	1.02	1.07
PL	25.8	4.7	31.2	23.2	4.5	0.94	0.99
RO	40.4	10.4	34.7	32.1	5.3	0.89	1.25
SE	16.4	11.3	21.5	15.4	5.7	1.00	1.46
NL	15.9	6.9	24.0	12.6	6.7	0.98	0.88
DK	18.9	6.0	23.1	8.5	5.7	1.07	1.03
SI	20.4	11.7	22.1	14.7	3.4	1.01	0.88
BG	48.0	8.2	34.0	28.4	17.2	0.98	1.09
ES	27.3	0.9	35.1	27.5	12.3	0.90	1.46
EL	35.7	1.9	35.3	28.8	7.5	0.86	1.18
HR	29.9	9.2	29.0	21.8	15.9	0.98	0.92
EE	23.5	15.1	32.2	18.1	7.0	1.07	0.91
MT	24.0	8.2	25.1	24.0	10.4	0.95	1.31
IT	28.4	3.2	30.8	24.8	7.1	0.93	1.12
IE	29.5	20.2	27.6	16.0	24.0	0.97	1.56
UK	24.8	14.7	31.5	18.9	15.4	0.90	1.68
CZ	14.6	7.8	25.5	11.3	6.6	0.98	1.14
HU	33.5	19.8	28.5	23.2	15.5	0.93	1.40
SK	19.8	8.4	25.7	20.3	6.2	0.97	1.35
EU-28	**24.5**	**9.7**	**28.6**	**20.2**	**9.1**	**1.0**	**1.2**
EA-19	**24.1**	**9.4**	**28.5**	**19.9**	**8.4**	**1.0**	**1.2**

Sources: Eurostat (most recent data) and DG EMPL calculations based on EU-SILC 2012 [udb 2012](1).

(1) The most recent data refers to the availability of the data at the time of writing in September 2015.

Table A.6.: Share of family benefits (gross) of total disposable household income, 2012

	Q1	Q2	Q3	Q4	Q5	All
AT	24.8%	18.2%	14.3%	10.4%	6.8%	14.3%
BE	19.0%	13.9%	8.9%	8.0%	5.5%	10.9%
BG	25.6%	8.6%	5.8%	4.0%	3.0%	8.2%
CY	10.6%	9.8%	6.4%	3.6%	2.0%	6.4%
CZ	15.6%	8.5%	6.8%	6.2%	2.8%	7.8%
DE	24.6%	15.1%	11.6%	9.1%	7.1%	13.4%
DK	10.8%	7.7%	5.5%	4.2%	2.9%	6.0%
EE	24.3%	14.4%	10.0%	12.5%	14.4%	15.1%
EL	5.4%	1.4%	1.4%	0.7%	0.7%	1.9%
ES	1.5%	0.6%	0.5%	1.0%	1.0%	0.9%
FI	21.8%	15.9%	10.9%	7.5%	6.1%	11.9%
FR	19.0%	10.8%	7.7%	6.6%	3.5%	9.2%
HR	25.4%	9.5%	6.7%	4.3%	2.8%	9.2%
HU	38.6%	23.1%	17.7%	14.2%	11.0%	19.8%
IE	40.2%	28.4%	18.8%	10.8%	5.1%	20.2%
IT	5.9%	5.3%	2.9%	1.8%	0.8%	3.2%
LT	8.0%	8.4%	7.1%	9.5%	8.0%	8.2%
LU	27.0%	22.2%	14.0%	10.2%	7.6%	15.5%
LV	17.7%	8.7%	7.0%	4.9%	5.6%	8.5%
MT	24.3%	11.4%	3.8%	3.1%	1.2%	8.2%
NL	19.2%	7.5%	4.5%	3.3%	2.1%	6.9%
PL	13.4%	6.0%	3.3%	2.0%	1.1%	4.7%
PT	11.0%	4.3%	2.7%	1.3%	0.7%	3.8%
RO	28.3%	11.4%	8.1%	5.3%	3.9%	10.4%
SE	19.8%	13.5%	10.7%	8.0%	6.2%	11.3%
SI	22.1%	12.9%	8.9%	9.0%	6.2%	11.7%
SK	18.6%	9.1%	6.6%	5.7%	4.7%	8.4%
UK	33.2%	22.3%	12.3%	6.7%	2.9%	14.7%
Average	19.8%	11.7%	8.0%	6.2%	4.5%	9.7%

Source: DG EMPL calculations based on EU-SILC 2012 [udb 2012].

Table A.7.: Share of social assistance etc. (gross) of total disposable household income, 2012

	Q1	Q2	Q3	Q4	Q5	All
AT	4.1%	0.5%	0.7%	0.2%	0.0%	1.0%
BE	9.2%	1.7%	0.0%	0.0%	0.0%	2.1%
BG	5.6%	0.4%	0.0%	0.0%	0.0%	0.9%
CY	2.1%	0.2%	0.0%	0.1%	0.0%	0.5%
CZ	4.7%	0.0%	0.0%	0.0%	0.0%	0.9%
DE	3.4%	0.9%	0.1%	0.1%	0.0%	0.9%
DK	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
EE	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
EL	0.5%	0.0%	0.3%	0.0%	0.0%	0.2%
ES	10.3%	2.4%	1.2%	0.5%	0.4%	2.7%
FI	3.3%	1.1%	0.3%	0.2%	0.0%	0.9%
FR	8.8%	1.6%	0.4%	0.4%	0.3%	2.1%
HR	4.5%	0.4%	0.2%	0.2%	0.0%	1.0%
HU	3.1%	1.0%	0.7%	0.2%	0.1%	0.9%
IE	0.6%	0.4%	0.3%	0.1%	0.0%	0.3%
IT	1.3%	0.2%	0.0%	0.0%	0.1%	0.3%
LT	24.1%	7.5%	2.4%	1.1%	0.2%	6.7%
LU	9.9%	3.8%	0.4%	0.1%	0.0%	2.6%
LV	6.2%	1.5%	0.4%	0.1%	0.3%	1.5%
MT	10.8%	5.2%	1.9%	0.8%	0.1%	3.5%
NL	16.3%	5.2%	0.2%	0.3%	0.0%	4.0%
PL	1.8%	0.2%	0.1%	0.0%	0.0%	0.4%
PT	7.1%	0.5%	0.5%	0.0%	0.1%	1.5%
RO	5.7%	2.0%	0.5%	0.1%	0.0%	1.5%
SE	6.8%	0.5%	0.0%	0.0%	0.0%	1.3%
SI	7.6%	0.7%	0.2%	0.0%	0.0%	1.7%
SK	10.7%	0.5%	0.1%	0.1%	0.0%	1.8%
UK	7.1%	6.5%	3.7%	1.4%	0.1%	3.6%
Average	**6.3%**	**1.6%**	**0.5%**	**0.2%**	**0.1%**	**1.6%**

Source: DG EMPL calculations based on EU-SILC 2012 [udb 2012].

Table A.8.: Share of housing allowance (gross) of total disposable household income, 2012

	Q1	Q2	Q3	Q4	Q5	All
AT	1.9%	0.7%	0.3%	0.1%	0.0%	0.5%
BE	0.2%	0.2%	0.0%	0.0%	0.0%	0.1%
BG	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
CY	1.0%	0.9%	0.3%	0.2%	2.1%	0.9%
CZ	4.2%	0.7%	0.1%	0.0%	0.0%	0.9%
DE	8.5%	2.1%	0.3%	0.1%	0.0%	2.2%
DK	4.7%	1.1%	0.3%	0.0%	0.1%	1.1%
EE	3.3%	0.3%	0.3%	0.0%	0.0%	0.7%
EL	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%
ES	0.7%	0.2%	0.1%	0.1%	0.1%	0.2%
FI	6.6%	1.7%	0.3%	0.1%	0.1%	1.5%
FR	11.1%	4.5%	1.2%	0.4%	0.1%	3.2%
HR	2.8%	0.1%	0.0%	0.0%	0.0%	0.5%
HU	2.0%	0.8%	0.2%	0.1%	0.1%	0.5%
IE	4.1%	3.9%	2.8%	1.2%	0.1%	2.3%
IT	0.4%	0.1%	0.1%	0.0%	0.0%	0.1%
LT	0.6%	0.4%	0.1%	0.0%	0.0%	0.2%
LU	1.1%	1.2%	0.8%	0.9%	0.4%	0.8%
LV	2.7%	0.7%	0.3%	0.2%	0.0%	0.7%
MT	1.3%	0.5%	0.2%	0.1%	0.0%	0.4%
NL	5.6%	1.2%	0.3%	0.1%	0.0%	1.3%
PL	1.0%	0.3%	0.2%	0.0%	0.0%	0.3%
PT	1.2%	0.5%	0.5%	0.2%	0.1%	0.5%
RO	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
SE	5.2%	0.6%	0.0%	0.0%	0.0%	1.1%
SI	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
SK	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
UK	14.8%	9.0%	5.1%	1.7%	0.2%	5.8%
Average	**3.0%**	**1.1%**	**0.5%**	**0.2%**	**0.1%**	**0.9%**

Source: DG EMPL calculations based on EU-SILC 2012 [udb 2012].

Table A.9.: Share of unemployment benefits (gross) of total disposable household income, 2012

	Q1	Q2	Q3	Q4	Q5	All
AT	10.5%	4.6%	2.9%	1.4%	0.8%	3.7%
BE	20.9%	5.4%	2.8%	1.3%	2.0%	6.4%
BG	2.0%	1.2%	2.0%	0.9%	0.9%	1.4%
CY	3.7%	2.1%	1.5%	1.0%	1.8%	2.0%
CZ	1.6%	0.7%	0.3%	0.3%	0.1%	0.6%
DE	12.5%	2.9%	1.2%	0.7%	0.9%	3.6%
DK	20.5%	9.4%	2.8%	1.5%	1.5%	6.7%
EE	1.8%	0.6%	0.9%	0.6%	0.2%	0.8%
EL	6.4%	3.5%	3.7%	1.5%	0.6%	3.1%
ES	22.3%	11.4%	7.4%	5.1%	1.8%	9.1%
FI	17.0%	5.4%	3.4%	2.2%	1.0%	5.3%
FR	7.3%	5.7%	3.5%	2.4%	1.4%	3.9%
HR	2.6%	0.5%	1.0%	0.4%	0.4%	1.0%
HU	11.9%	4.4%	1.7%	0.4%	0.5%	3.3%
IE	25.9%	19.2%	8.9%	6.5%	2.3%	12.3%
IT	8.5%	5.3%	4.0%	3.3%	3.6%	4.8%
LT	3.5%	1.7%	1.5%	0.7%	0.2%	1.5%
LU	7.7%	2.5%	2.3%	1.2%	0.3%	2.6%
LV	4.2%	1.7%	1.0%	1.1%	0.7%	1.7%
MT	6.6%	1.5%	0.3%	0.4%	0.2%	1.7%
NL	10.7%	3.9%	1.4%	1.4%	0.9%	3.4%
PL	1.7%	1.3%	0.8%	0.3%	0.2%	0.8%
PT	6.4%	5.3%	4.6%	2.1%	1.1%	3.8%
RO	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%
SE	10.9%	2.8%	1.4%	0.6%	0.2%	3.0%
SI	3.2%	1.8%	1.4%	0.7%	0.3%	1.5%
SK	2.3%	0.9%	0.6%	0.6%	0.3%	0.9%
UK	4.6%	1.3%	0.7%	0.0%	0.0%	1.2%
Average	**8.5%**	**3.8%**	**2.3%**	**1.4%**	**0.9%**	**3.2%**

Source: DG EMPL calculations based on EU-SILC 2012 [udb 2012].

Regression analysis: family policies

The data used in the regression analysis is EU-SILC micro-data from 2007-2012 (for personal characteristics 2006-2012). We combine individual-level data with country-level information (see also variables included in Table A.10). Institutional factors are based on data from Eurostat. Country-level variables, such as GDP per capita and unemployment rate, are used as control variables. This kind of micro-macro research design allows us to study both the impact of personal characteristics as well as country-level factors, i.e. the impact of policies on mothers' employment and poverty.

The results shown in the family policy part of the chapter are based on the *Heckman selection model* ([55]). Because women do not become mothers randomly, the model first determines if motherhood is observed (or whether employment/poverty status of the mother is observed) and only afterwards estimates the coefficients for independent variables explaining the mother's working and poverty status. The first equation, i.e. the selection of motherhood, is based on a woman having a partner, her age, educational level, income quintile, fertility rate in the country and existing children.

The results that we are most interested in are based on the probit model, as our dependent variables are binary (working or not working and poor or not poor). The complete results from the econometric analysis are illustrated in the tables below, while the evidence presented in the chapter has illustrated key results based on marginal effects of these models. Only mothers aged between 25 and 49 and with at least one child below the age of 6 are considered in the analyses.

([55]) For more information on the Heckman selection model, see Heckman (1974) and for the use in Stata: http://www.stata.com/manuals13/rheckman.pdf.

Table A.10.: Probit model results (marginal effects): mother works

	MODEL 1	MODEL 2	MODEL 3	MODEL 4
Age	0.009***	0.007***	0.007***	0.007***
Number of children 0-6	-0.110***	-0.111***	-0.111***	-0.109***
Number of children 7-17	-0.040***	-0.035***	-0.035***	-0.035***
Number of other workers in the household	0.038***	0.044***	0.044***	0.044***
Education (ref. low)				
Middle	0.153***	0.167***	0.168***	0.167***
High	0.308***	0.298***	0.299***	0.298***
Single parent	0.024***	0.004	0.004	0.010
Non-EU background	-0.113***	-0.136***	-0.136***	-0.141***
Degree of urbanism (ref. densely populated area)				
Intermediate area	0.011***	0.010**	0.011**	0.009**
Thinly populated area	-0.012***	-0.005	-0.005	-0.009**
Use of ECEC 0-2		0.004***	0.004***	0.002***
Use of ECEC above 3		-0.001***	-0.001***	0.001***
Gender pay gap		-0.007***	-0.007***	0.000
Family benefit spending (adj. for GDP per capita and demography)		-0.005***	-0.004***	-0.009***
Share of mothers working part-time		0.001	0.001***	-0.001***
Employment rate 20-64		0.008***	0.008***	0.000
GDP per capita		0.000	0.000	0.000***
GDP growth		0.002***	0.004***	0.002**
Unemployment rate		0.001	0.002***	0.000
YEAR				
2008			0.020***	0.026***
2009			0.029***	0.029***
2010			0.006	0.021***
2011			-0.011	0.006
2012			-0.002	0.010
CLUSTER				
2				-0.001
3				0.119***
4				-0.116***
5				-0.094***
6				-0.169***

Source: DG EMPL calculations based on EU-SILC 2007-2012 [udb 2007-2012].

Note: *** P-value<0.000, ** P-value<0.005, * P-value<0.05.

Table A.11.: Probit model results (marginal effects): mother is poor

	MODEL 1	MODEL 2	MODEL 3	MODEL 4
Age	0.010***	0.013***	0.013***	0.013***
Number of children 0-6	-0.021***	-0.021***	-0.021***	-0.021***
Number of children 7-17	0.007***	0.002	0.002	0.002
Number of other workers in the household	-0.125***	-0.128***	-0.128***	-0.128***
Mother works	-0.160***	-0.157***	-0.157***	-0.158***
Education (ref. low)				
Middle	-0.185***	-0.171***	-0.171***	-0.170***
High	-0.320***	-0.310***	-0.310***	-0.308***
Single parent	0.197***	0.229***	0.229***	0.231***
Non-EU background	0.106***	0.123***	0.123***	0.122***
Degree of urbanism (ref. densely populated area)				
Intermediate area	-0.019***	-0.010**	-0.010**	-0.010**
Thinly populated area	0.044***	0.036***	0.036***	0.035***
Distribution of family benefits (Q5/Q1)		0.012***	0.012***	0.009***
Share of family benefits of disposable income (Q1)		-0.002***	-0.002***	0.000
AROPE, all		0.003***	0.003***	0.004***
Mothers' employment rate		-0.001***	-0.001***	-0.002**
Part-time work, women		0.001*	0.001**	0.001***
Gender pay gap		-0.001*	0.000	0.000
Family benefit spending (adj. for GDP per capita and demography)		0.000	0.000	-0.004***
GDP per capita		0.000*	0.000**	0.000***
GDP growth		0.001***	0.003***	0.002***
Gini coefficient		0.003***	0.004***	0.006***
Unemployment rate		0.002***	0.001*	0.002***
Use of ECEC 0-2		0.000	0.000	0.000
Use of ECEC above 3		-0.002***	-0.002***	-0.002***
YEAR (ref. 2007)				
2008			0.025***	0.028***
2009			0.035***	0.035***
2010			0.022***	0.024***
2011			0.026***	0.026***
2012			0.025***	0.025***
Cluster (ref. Cluster 1)				
2				-0.011
3				0.014
4				0.003
5				-0.077***
6				-0.004

Source: DG EMPL calculations based on EU-SILC 2007-2012 [udb 2007-2012].

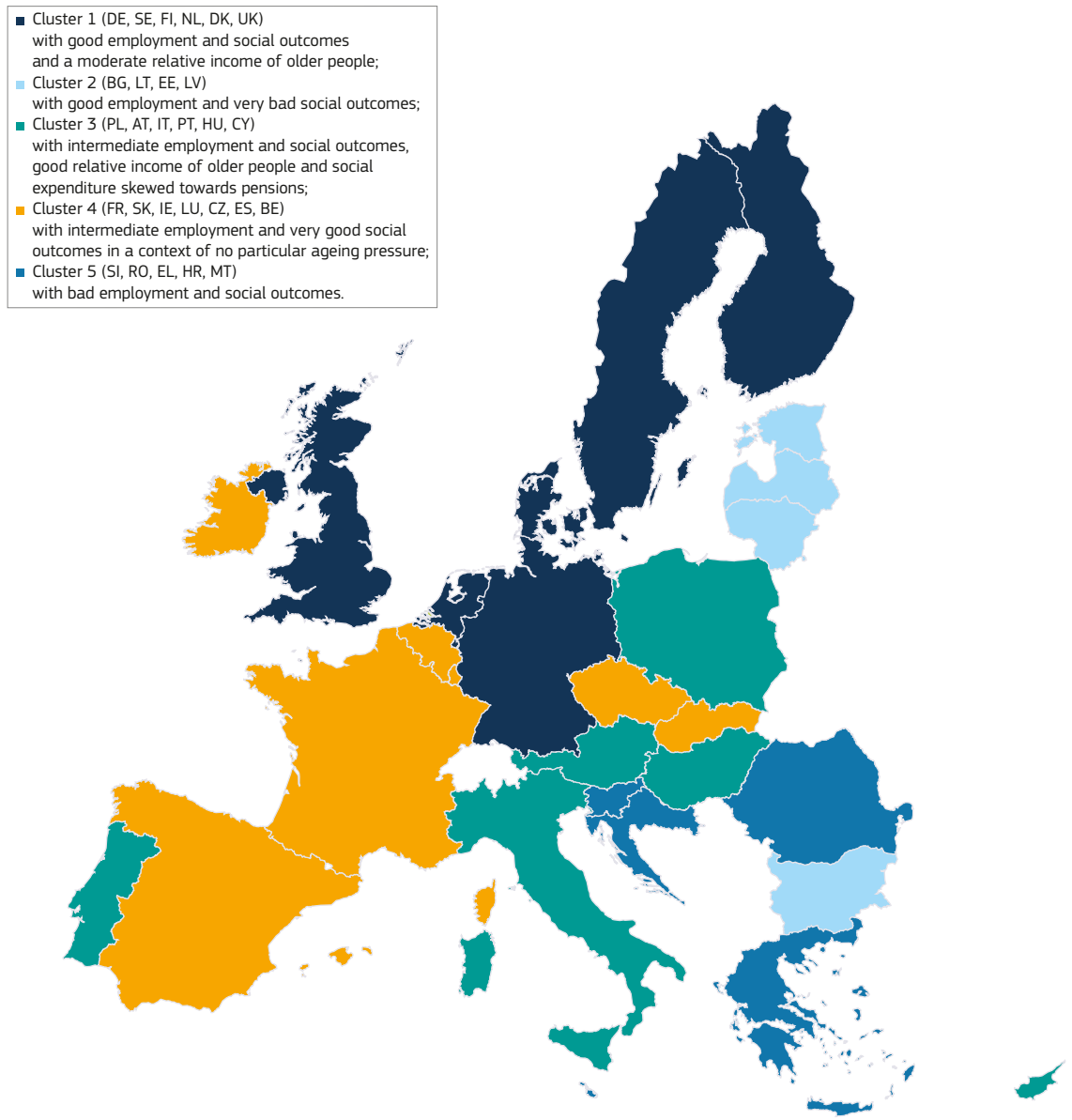
Note: *** P-value<0.000, ** P-value<0.005, * P-value<0.05.

ANNEX 3: LONGER WORKING LIVES

Table A.12: Indicators included in the analysis

INDICATOR	DESCRIPTION	USED IN		DATA SOURCE
		Cluster	Regression	
Inequality +65	S80/S20 over 65	✓		EU-SILC
Potential for longer working lives	Inactive people who would have liked to stay longer in employment	✓		2012 LFS ad-hoc module on transitions from work to retirement
Population growth	Population growth in the previous 5 years		✓	Eurostat
Working hours	Number of hours of work per week usually worked 55-64	✓	✓	LFS
Voluntary part-time	Share of employed working voluntarily part-time		✓	LFS
Telework	Share of employed usually or sometimes working from home (only usually in regressions)	✓	✓	LFS
Self-employment	Share of self-employed		✓	LFS
LLL	Participation in lifelong learning 50-74 year-old		✓	LFS
Healthy life years	Healthy life years at 50 (average over the last 3 years in regressions)	✓	✓	Eurostat
Expenditure old age	Expenditure for old age and survivors as % of total social expenditure	✓		ESSPROS
Relative income older people	Ratio of income of retired over 65 to income of employed over 18	✓	✓	EU-SILC
Family expenditure cash	Ratio of family expenditure in cash per person aged 0-18 to GDP per capita		✓	ESSPROS, own elaboration
Family expenditure in-kind	Ratio of family expenditure in cash per child in pre-school age to GDP per capita		✓	ESSPROS, own elaboration
Tax wedge	Tax wedge of single at 100% of average wage			OECD-ECFIN tax database
Homeownership	Share of outright homeowners among 50-69 year-old		✓	EU-SILC, own elaboration

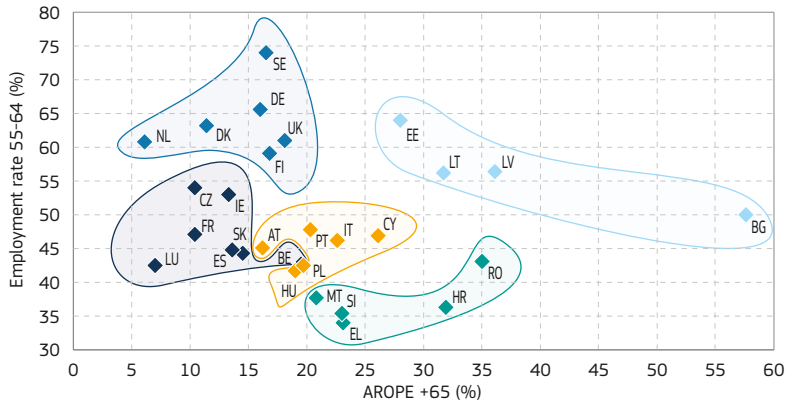
Chart A.4: Cluster of Member States for older people outcomes



Source: DG EMPL Cluster analysis based on most recent Eurostat data.

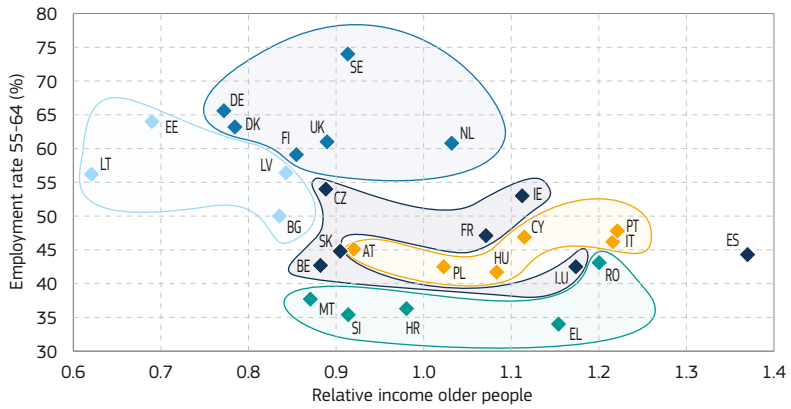
Charts A.5 and A.6 plot the employment rate of older workers versus two social outcomes considered in the Cluster analysis: AROPE for over-65 year-olds and relative income of pensioners, as measured by the ratio of income of retired people over 65 to income of employed people over 18. The figures show that Member States in Cluster 1 (Germany, Sweden, Finland, the Netherlands, Denmark, United Kingdom) perform well in terms of both employment and poverty or social exclusion, but not so well when considering the relative income of older people. Member States in Cluster 3 (Poland, Austria, Italy, Portugal, Hungary, Cyprus) and Cluster 5 (Slovenia, Romania, Greece, Croatia, Malta) improve their position in terms of social outcomes when considering the relative income of older people, while Member States in Cluster 2 (Bulgaria, Lithuania, Estonia, Latvia) remain the worst performers in terms of social outcomes.

Chart A.5: Employment and social outcomes of older people in 2012, clusters of countries



Sources: LFS (lfsa_ergan) and EU-SILC. See Table A.12 for definitions.

Chart A.6: Employment and social outcomes of older people in 2012, clusters of countries



Sources: LFS (lfsa_ergan) and EU-SILC. See Table A.12 for definitions.

Table A.13: Main outcomes

Cluster	Country	Activity rate 55-64	Employment rate 55-64	Unemployment rate 55-64	Ratio unemployment rate 55-64/20-64	AROPE +65	Inequality (S80/S20) +65	Pension adequacy	Social expenditure old age (in % total)	Old age dependency
1	Denmark	66.40	63.20	4.80	0.77	11.40	3.20	0.78	41.62	0.28
1	Finland	63.80	59.10	7.30	0.91	16.80	3.30	0.85	39.74	0.30
1	Germany	69.10	65.60	5.10	1.02	16.00	3.80	0.77	38.64	0.32
1	Netherlands	65.40	60.80	7.10	1.11	6.10	3.20	1.03	37.54	0.26
1	Sweden	78.20	74.00	5.40	0.76	16.50	3.40	0.91	41.97	0.31
1	United Kingdom	63.60	61.00	4.00	0.74	18.10	3.80	0.89	44.44	0.27
2	Bulgaria	56.60	50.00	11.70	1.04	57.60	4.60	0.84	48.85	0.29
2	Estonia	67.70	64.00	5.40	0.74	28.00	3.10	0.69	44.16	0.28
2	Latvia	62.60	56.40	9.90	0.91	36.10	3.90	0.84	55.00	0.29
2	Lithuania	63.00	56.20	10.70	0.99	31.70	3.90	0.62	44.24	0.28
3	Austria	46.90	45.10	3.80	0.69	16.20	4.10	0.92	49.34	0.27
3	Cyprus	56.00	46.90	16.30	1.02	26.10	4.80	1.11	51.08	0.20
3	Hungary	44.60	41.70	6.40	0.84	19.00	2.80	1.08	51.38	0.26
3	Italy	48.90	46.20	5.50	0.44	22.60	4.40	1.22	59.08	0.33
3	Poland	45.60	42.50	6.80	0.76	19.70	3.40	1.02	58.56	0.21
3	Portugal	55.30	47.80	13.50	0.96	20.30	4.90	1.22	51.67	0.30
4	Belgium	45.10	42.70	5.40	0.64	19.50	3.10	0.88	37.99	0.27
4	Czech Republic	56.80	54.00	4.90	0.82	10.40	2.40	0.89	48.08	0.26
4	France	50.80	47.10	7.30	0.77	10.80	4.30	1.07	42.98	0.28
4	Ireland	58.40	53.00	9.30	0.84	13.30	4.10	1.11	21.23	0.19
4	Luxembourg	44.50	42.50	4.30	0.77	7.00	4.10	1.17	37.34	0.20
4	Slovakia	50.10	44.80	10.60	0.82	13.60	2.30	0.90	42.93	0.19
4	Spain	55.40	44.30	20.00	0.83	14.50	4.50	1.37	44.79	0.27
5	Croatia	41.00	36.30	11.60	0.70	31.90	5.10	0.98	37.26	0.28
5	Greece	41.10	34.00	17.20	0.65	23.10	3.90	1.15	57.05	0.32
5	Malta	40.30	37.70	6.50	1.20	20.80	3.20	0.87	54.64	0.26
5	Romania	44.60	43.10	3.30	0.49	35.00	4.50	1.20	53.85	0.24
5	Slovenia	38.40	35.40	7.80	0.80	23.00	3.50	0.91	46.06	0.26

Table A.14: Relative position of older people

Cluster	Country	Activity rate ratio 55-64/20-64	Employment rate ratio 55-64/20-64	Unemployment rate ratio 55-64/20-64	AROPE ratio 55-64/20-64	Inequality ratio 55-64/20-64
1	Denmark	0.82	0.83	0.77	0.85	0.74
1	Finland	0.80	0.81	0.91	1.10	0.92
1	Germany	0.84	0.84	1.02	1.35	0.83
1	Netherlands	0.81	0.80	1.11	1.21	0.89
1	Sweden	0.91	0.93	0.76	0.69	0.92
1	United Kingdom	0.79	0.80	0.74	0.99	0.83
2	Bulgaria	0.77	0.77	1.04	0.99	0.70
2	Estonia	0.84	0.86	0.74	1.22	0.56
2	Latvia	0.79	0.80	0.91	1.02	0.62
2	Lithuania	0.78	0.78	0.99	1.15	0.64
3	Austria	0.60	0.61	0.69	1.14	1.00
3	Cyprus	0.70	0.69	1.02	0.98	0.98
3	Hungary	0.62	0.63	0.84	1.00	0.67
3	Italy	0.71	0.77	0.44	0.99	0.77
3	Poland	0.62	0.64	0.76	1.10	0.69
3	Portugal	0.70	0.71	0.96	1.11	0.82
4	Belgium	0.61	0.63	0.64	1.10	0.82
4	Czech Republic	0.73	0.73	0.82	1.16	0.71
4	France	0.66	0.67	0.77	1.06	0.91
4	Ireland	0.77	0.79	0.84	1.01	0.91
4	Luxembourg	0.58	0.59	0.77	1.04	0.89
4	Slovakia	0.66	0.68	0.82	0.95	0.64
4	Spain	0.70	0.74	0.83	1.00	0.71
5	Croatia	0.58	0.61	0.70	1.07	0.96
5	Greece	0.57	0.64	0.65	1.13	0.59
5	Malta	0.57	0.57	1.20	1.03	0.78
5	Romania	0.63	0.66	0.49	1.00	0.68
5	Slovenia	0.51	0.52	0.80	1.36	0.97

Table A.15: Gender dimension

Cluster	Country	Employment gender gap 55-64	Female employment rate 55-64	Female part-time 20-64	AROPE female +65
1	Denmark	11.3	57.6	35	13
1	Finland	-4.6	61.4	19.3	20.5
1	Germany	11.4	60	46.3	18.3
1	Netherlands	19.9	50.8	76.6	6.7
1	Sweden	5	71.5	37.3	22.5
1	United Kingdom	13.4	54.4	41.3	19.8
2	Bulgaria	8.5	46	2.8	62.1
2	Estonia	2	63.1	11.2	33.5
2	Latvia	-0.1	56.4	8.9	39.8
2	Lithuania	4.5	54.3	10.6	36.3
3	Austria	17.9	36.4	46.3	18.6
3	Cyprus	20.2	36.9	16.8	30
3	Hungary	14.4	35.2	8.3	22.2
3	Italy	19.9	36.6	32.1	25.2
3	Poland	20.2	32.9	10.3	22.5
3	Portugal	12.2	42.1	12.6	21.6
4	Belgium	11.4	37	41.2	20.7
4	Czech Republic	21	43.8	9.5	13.8
4	France	3.5	45.4	30.5	12.3
4	Ireland	16.7	44.7	34.4	14.1
4	Luxembourg	14.8	35	35.6	7.5
4	Slovakia	15.9	37.2	6.8	15.5
4	Spain	13.4	37.8	25.5	15
5	Croatia	18.5	27.3	6.7	35.3
5	Greece	19	25	13	24.3
5	Malta	35.9	19.8	28.8	21
5	Romania	19	34.2	9.5	39.1
5	Slovenia	12.8	29	13.7	27.8

III

Table A.16: Labour market structure

Cluster	Country	Self-employment 55-64	Voluntary temporary	Voluntary part-time	Working pensioners	Working hours (weekly)	Teleworking	LLL
1	Denmark	10.95	0.74	6.96	5.59	35.63	34.71	29.90
1	Finland	17.40	1.46	7.89	9.61	36.91	24.01	22.50
1	Germany	13.75		7.58	9.11	34.99	13.53	6.70
1	Netherlands	20.93	3.31	19.78	7.42	31.08	14.02	15.60
1	Sweden	13.29	2.46	9.04	16.47	34.96	33.23	26.60
1	United Kingdom	20.50		11.02	16.01	35.84	29.34	14.40
2	Bulgaria	15.24	1.45	0.76	5.37	40.58	2.39	1.50
2	Estonia	10.15	1.06	5.51	16.40	38.46	12.18	10.10
2	Latvia	10.71	0.95	2.95	11.37	38.39	2.98	4.80
2	Lithuania	13.09	0.52	4.60	11.39	38.06	6.22	4.40
3	Austria	18.31	2.24	8.43	5.68	38.43	26.75	12.60
3	Cyprus	27.93	0.17	5.37	6.71	39.80	1.98	6.30
3	Hungary	17.20	1.83	4.67	3.19	38.91	11.88	2.70
3	Italy	26.32	0.66	2.58	4.94	37.20	5.13	7.10
3	Poland	24.86	5.58	4.75	7.89	40.28	14.62	3.50
3	Portugal	29.67	1.25	7.30	10.40	37.72	13.95	8.40
4	Belgium	18.53	0.84	11.81	3.70	36.18	25.45	6.40
4	Czech Republic	21.24	1.94	3.17	8.33	40.16	9.75	8.60
4	France	16.25	2.45	5.16	6.21	37.47	23.89	16.60
4	Ireland	27.66	1.42	7.64	4.84	34.71	20.74	6.00
4	Luxembourg	15.35	1.84	5.47	4.73	36.35	26.93	12.50
4	Slovakia	16.24	1.43	2.58	5.96	40.11	9.08	2.60
4	Spain	25.18	0.33	1.76	2.83	39.17	8.79	8.80
5	Croatia	23.28	4.16	5.27	4.17	39.42	3.44	2.20
5	Greece	54.73	0.50	2.23	1.13	43.06	5.39	2.50
5	Malta	18.02	2.21	6.26	8.36	38.81	4.86	6.40
5	Romania	32.53	0.06	6.87	10.13	39.90	0.82	1.30
5	Slovenia	19.75	1.23	7.36	5.95	40.66	18.46	10.90

Table A.17: Reasons for working/not working

Cluster	Country	Potential longer working lives	Working for non-financial reasons	Working due to insufficient income	Not working due to labour market reasons	Not working for health	Not working for care
1	Denmark	40.7	78.8	9	11.6	31.6	6.2
1	Finland	37	42.2	22.9	16	30.6	2
1	Germany	23.8	16.6	26.5	6.5	30.5	3
1	Netherlands	28.3	51.2	22.2	7.6	21.1	2.1
1	Sweden	29.8	64.8	14.2	4.6	20.1	5.9
1	United Kingdom	40.7	40.7	33.2	7.5	20.6	8.8
2	Bulgaria	16.6	13.4	53	5.4	10.3	1.8
2	Estonia	55	7.6	78.3	27.4	38.3	7.2
2	Latvia	38.3	8.9	58.2	20.7	26.5	
2	Lithuania	10.7	8.3	47.2	8.9	21.3	
3	Austria	34.1	65.4	23.5	6.1	29.3	1.7
3	Cyprus	44.5	27.8	35.8	7.3	16.5	9.4
3	Hungary	17.8	10.2	64.8	5.2	17.7	2.8
3	Italy	27	29.5	45.4	6.9	12.5	5.6
3	Poland	7.4	18	50	5.6	20	2.4
3	Portugal	58.7	25.1	59.1	9.2	37	4.6
4	Belgium	31.2	48.1	27.8	7.5	16.8	4
4	Czech Republic	21.5	18.5	53.5	5	7	0.7
4	France	30.9	24.4	31.9	10.3	14.9	2.6
4	Ireland	36.4	41.4	35.5	6.2	22.5	7
4	Luxembourg	29.9	51.3	20	2.2	25.1	3.1
4	Slovakia	26.3	5.5	62.6	11	16.6	3.5
4	Spain	43.3	31.2	19.5	8.3	29.1	3.2
5	Croatia	32	21.1	59	11.6	30	2.6
5	Greece	12.4		86.1	0.7	5.7	1.2
5	Malta	33.6	38	47		6.3	
5	Romania	18.7	2.2	90.5	6.5	30	7.2
5	Slovenia	9.2	62.4	18.5	2	9.9	

Table A.18: Health, tax and social expenditure

Cluster	Country	Homeownership 50-69	Social expenditure for care	Social expenditure old age (in % tot)	Tax wedge	Healthy life years (at 50)
1	Denmark	12.54045	4.05	41.6185	38.07014	20.46667
1	Finland	31.80073	1.91	39.74359	43.89751	16.8
1	Germany	25.39665	1.97	38.64407	49.31077	14.9
1	Netherlands	7.608344	3.35	37.53754	37.70937	18.91667
1	Sweden	8.45601	1.79	41.96721	42.46088	25.53333
1	United Kingdom	28.95278		44.44444	31.09373	20.95
2	Bulgaria	85.38276	0.11	48.85057	33.62	19.11667
2	Estonia	64.26312	0.26	44.15584	40.04627	12.98333
2	Latvia	72.03625	0.46	55	43.89	13.41667
2	Lithuania	85.27454	0.59	44.24242	41.07	14.81667
3	Austria	31.11715	2.01	49.33775	49.35282	17.15
3	Cyprus	55.57889	0.2	51.08225	13.94	17.8
3	Hungary	68.94406	0.4	51.37615	49.02724	14.16667
3	Italy	59.76892		59.07591	48.219	17.83333
3	Poland	73.17231	0.44	58.56354	35.59731	16.4
3	Portugal	40.66986	0.47	51.67286	41.21882	17.53333
4	Belgium	29.21733	2.54	37.98701	55.57558	20.13333
4	Czech Republic	62.3915	0.29	48.07692	42.64224	17.86667
4	France	33.91975	1.87	42.98246	48.4436	19.28333
4	Ireland	34.67927		21.23077	28.18407	21.6
4	Luxembourg	28.28377	2.22	37.33906	37.56649	21.65
4	Slovakia	80.75721	0.02	42.93478	41.20938	10.28333
4	Spain	47.45623	1.59	44.78764	40.70632	19.2
5	Croatia	86.61852	0.05	37.26415	39.49	16.48333
5	Greece	60.91988	0.27	57.05128	40.40745	18.66667
5	Malta	63.91211		54.63918	25.27	24.05
5	Romania	95.63836	1.03	53.84615	44.56	13.18333
5	Slovenia	77.89108	1.26	46.06299	42.45901	14.6

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