

Working away at the cost of ageing: the labour market adjusted dependency ratio

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well being
2030

'Well-being 2030' is a two-year research project, co-funded by the EPC and the European Commission, which started running in April 2009. Based on a belief that policy can shape our future, the project is seeking to establish a strategic vision for the long-term development of social policy in Europe. To that end, the project investigates what policy choices are most inclined to deliver a higher level of well-being for European citizens by the year 2030. The reflection on the future of Europe's economic and social models including the trends, challenges and constraints framing policy choices for improving citizens' quality of life are at the core of the project.

The reflection of this forward-looking project is stimulated through a range of activities, from analysis to research, panels and communication activities, which aim to deliver three key outputs:

- to bring the insights of the research on well-being definition and measurement into the policy debate over the long-term future of Social Europe;
- to analyse Europeans' values and preferences in order to sketch a picture of a future society delivering higher level of well-being for its citizens;
- to identify the strategic policy choices (social, economic and environmental) reflecting Europeans' preferences and considering the current challenges as well as resources available to deal with these challenges.

The project analyses the main policy areas that impact on citizens' quality of life, with a particular emphasis on areas where there is a specific European policy interest. This includes labour market policies, health/lifestyles, education, demographics/migration, integration and inequalities, and public finances/financial sustainability. The key question of how to 'measure' well-being, the challenges and factors which influence social conditions, and what kind of social provision citizens want in the European Union of the future is also addressed. Moreover, the project pays particular attention to highlighting trade-offs or synergies among policy areas.



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Executive Summary

In 2050, nearly one in three European citizens will be 65 or older. Demographic change and population ageing is one of the greatest challenges that will affect the structure of the EU economy over the next couple of decades, through its impacts on labour markets, pensions systems and public finances.

The policy implications of this demographic evolution are profound: the proportion of people of working age in the EU will shrink at the same time as the number of those who potentially need support mechanisms, such as retirement benefits and public healthcare, expands. European societies will need to respond and adapt to this change.

The challenge varies considerably across Europe, since EU member states are at different starting points, both concerning their demographic outlook and also their labour market performance.

Assessing the relative position of EU countries according to the old-age dependency ratio - a demographic indicator that measures the proportion of people over 65 over the working-age population - shows that the best performing countries are Ireland, Slovakia, Cyprus and Poland. Old-age dependency ratio is often used to estimate the impact of demographic trends on welfare systems and, according to Eurostat projections, the average ratio in the EU is forecast to grow from 25.9% in 2010 up to 50.4% in 2050.

However, old-age dependency does not capture the fact that many people of working age are actually not working. This paper proposes a different ratio: the Labour Market Adjusted Dependency Ratio (LMADR).^{1,2} It calculates the proportion of people who are not in work as a proportion of the total population.

The new measure gives a different picture of EU performance: in 2010, the EU countries had a LMADR of 47.7% on average, meaning that, currently, in the EU, slightly less than half of the population is unemployed, retired or inactive for other reasons. The average LMADR in the EU would grow from 47.7% in 2010 up to 56.3% in 2050. In 2010, the Netherlands (36.2%) and Denmark (38.5%) topped the ranking of EU countries, due to their labour market structure rather than their demographic outlook. Countries such as Sweden and Germany also presented a significant improvement of their relative position, as compared to using the old-age dependency ratio. Italy (55.4%), Hungary (55.2%) and Malta (53.8%) were the EU countries with the weakest position.

The table on the next page summarises the performance of EU Member States in 2010, 2030 and 2050 using the old-age dependency ratio and the LMADR.

The results suggest that, in addition to demographic trends, labour market performance plays a critical role.

The urgency of increasing labour market participation is recognised in the Europe 2020 Strategy, which sets the achievement of an employment rate of 75% for the 20-64 age group by 2020 as one of the five headline targets. However, since most action has to be undertaken by the Member States, it will be important to strengthen implementation of structural labour market reforms.

Effective policy actions exist. Three main areas of intervention can be identified from the analysis of the LMADR:

1. Labour market reforms are needed to achieve higher labour force participation, by involving the under-represented categories, such as women, migrants and people at risk of exclusion from the labour market. Tools directed at reducing labour market rigidities such as flexicurity measures should be supported and encouraged.
2. In addition to the increase in retirement age, the debate on pension systems reform must go further and focus on promoting labour market participation of the older cohort of the workforce. The sole

increase in retirement age will not be enough to guarantee a sustainable system. Possible actions include financial incentives to continue working, flexible working arrangements, possibilities of second careers that do not penalize the accrual of pension benefits, value of pension rights linked to life-long contributions rather than final salary levels.

3. A change in attitude towards work is required. Being employed is one of the most important determinants of people's well-being: the concept of employment as a source of identity and self-fulfillment should be promoted, giving enhanced attention to workplaces and working conditions.

Demographic trends and labour market aspects need to be considered jointly when assessing the impact of population ageing on the EU economy. A broader participation in the labour market will not only be a key driver for economic growth, fiscal sustainability and citizens' well-being, but also the best response to the demographic challenge that Europe is facing.

	2010				2030				2050			
	old-age DR		LMA DR		old-age DR		LMA DR		old-age DR		LMA DR	
	%	rank	%	rank	%	rank	%	rank	%	rank	%	rank
Ireland	16.7	1	45.8	12	24.6	1	49.8	10	40.4	4	54.3	12
Slovakia	16.9	2	48.2	15	32.3	5	53.0	19	55.5	21	61.8	23
Cyprus	18.0	3	40.0	3	27.4	2	42.8	1	37.7	1	46.7	4
Poland	19.0	4	49.4	20	36.0	13	54.2	20	55.7	22	61.4	22
Luxembourg	21.1	5	46.2	13	30.8	4	51.4	12	37.8	2	53.6	10
Malta	21.2	6	53.8	25	39.1	22	58.7	26	49.8	13	62.7	24
Romania	21.3	7	49.2	18	30.3	3	51.9	15	54.0	18	58.0	18
Czech Republic	21.8	8	45.4	11	35.7	12	49.6	9	54.8	19	56.1	14
Netherlands	22.8	9	36.2	1	40.0	23	43.7	3	45.6	9	45.4	3
Lithuania	23.2	10	50.0	21	34.7	11	52.6	17	51.1	16	58.1	19
Slovenia	23.9	11	44.1	8	40.8	24	51.9	16	59.4	27	56.8	15
Hungary	24.2	12	55.2	26	34.1	7	58.1	25	50.8	14	63.3	26
Spain	24.4	13	51.6	24	34.3	8	57.3	24	58.7	25	63.1	25
United Kingdom	24.7	14	42.6	6	33.2	6	45.8	5	38.0	3	47.5	5
Denmark	25.0	15	38.5	2	37.8	18	43.9	4	41.3	5	44.7	1
Estonia	25.0	16	46.3	14	34.4	9	49.2	8	47.2	11	53.0	9
Latvia	25.2	17	49.4	19	34.6	10	51.8	14	51.2	15	57.0	16
Bulgaria	25.3	18	48.9	17	36.3	14	52.7	18	55.4	20	58.9	20
Finland	25.7	19	44.8	9	43.9	26	51.0	11	46.6	10	51.8	8
France	25.8	20	48.8	16	39.0	21	54.5	21	44.7	8	55.8	13
Austria	26.0	21	42.2	5	38.1	19	48.6	7	48.3	12	51.5	6
Belgium	26.1	22	50.9	22	37.6	17	55.6	22	43.9	7	57.4	17
Portugal	26.6	23	44.0	7	36.6	15	48.0	6	53.0	17	51.7	7
Sweden	27.8	24	40.8	4	37.4	16	43.5	2	41.9	6	44.9	2
Greece	28.2	25	51.3	23	38.5	20	56.5	23	57.0	24	60.6	21
Italy	31.0	26	55.4	27	42.4	25	60.7	27	59.2	26	63.8	27
Germany	31.2	27	44.9	10	46.2	27	51.4	13	56.4	23	54.3	11
EU-27	25.9		47.7		38.0		52.7		50.4		56.3	

Introduction

Demographic change is one of the biggest challenges that EU economies and societies will be facing over the next couple of decades. Europe's population is ageing: in 2050, nearly one of each three European citizens will be 65 or older.

The change in the demographic structure will considerably challenge the structure of the European economy, through its impacts on labour markets, public finances, the structure of demand, as well as potentially affecting the national rate of saving and capital accumulation. The age-related government expenditure in the EU-27, which includes spending on pensions, health-care, long-term care, unemployment benefits and education, is forecasted to grow from 23.1% in 2007 to 25.8% in 2035 and 27.8% in 2060 (2009 Ageing Report)³. Furthermore, in the context of enhanced global competition, European growth and competitiveness will suffer from a shrinking labour force and also a less dynamic society, given the higher inclination to innovation and change associated with younger people (although this aspect may be stimulated at all ages within the proper policy framework).

Looking ahead, European economies and societies will need to respond and adapt to this change. Europe is still facing the consequences of the recent economic and financial crisis, its setbacks in economic growth and employment as well as its impact on the sustainability of European public finances. Nonetheless, ensuring long-term fiscal sustainability will be crucial to facing the risks stemming from the changing demographic conditions.

The need to adjust retirement practices and the way people build up entitlements to pensions is urgent, and the debate on pension is currently high on both European institutions' and Member States' agenda. The European Commission published in July 2010 the Green Paper towards adequate, sustainable and safe European pension systems. It aims at stimulating a Europe-wide public debate on how to ensure adequate, sustainable and safe pensions and how the EU can best support the national efforts. The Annual Growth Survey, published in January 2011 in the context of the European Semester of policy coordination, lists the reform of pension systems as one of the top priorities, stating that 'fiscal consolidation should be supported by reform of pension systems, making them more sustainable. Member States that have not already done so should increase the retirement age and link it with life expectancy.' The issue was also raised in the Competitiveness Pact (February 2011) as one of the six points for achieving more competitiveness in the following 12 months and is now incorporated in the Euro Plus Pact.

A longer statutory working life can contribute to alleviating the burden on the welfare systems, but it will not be sufficient if it is not coupled with increased labour market participation. A broader participation in the labour market will have a positive impact on European public finances and social security systems; at the same time, it would enhance economic growth and societal cohesion. But this is not the whole story: employment is not merely a source of income, but also a source of identity, social relations and self-esteem. Being in employment is one of the most important determinants of subjective well-being, and the positive correlation between employment and life satisfaction is beyond dispute. Addressing the demographic challenge with the right strategy may result in a real win-win situation for Europe.

This paper analyses how increased labour market participation can be a key determinant in tackling this challenge. Some of the traditional indicators used to assess the impact of the demographic change are unable to capture the role of labour market performance. In order to integrate both the demographic and labour market dimensions, the EPC has developed a new indicator, the Labour Market Adjusted Dependency Ratio (LMADR).

Part 1 and 2 focus on the demographic trends in Europe and their policy implications. Part 3 and 4 analyse some of the performance of EU member states according to demographic and labour market indicators. Part 5 presents the results of using the LMADR and compares it with a traditional indicator, the old-age

dependency ratio. Part 6 explores the unexploited potential of the European female labour market according to the LMADR, while Part 7 focuses on the role of international migration. Parts 8 and 9 assess what can be the impact of better functioning European labour markets and explore some ways to achieve it. Part 10 provides conclusions and includes additional recommendations for action.

1. Towards an older Europe

Ongoing progress in medicine and the improvement of living conditions are increasing the life expectancy of EU citizens: today, EU citizens have an average life expectancy at birth of 75 years for men and 82 years for women, which continues to increase at a pace of 2-3 months per year. At the same time, most EU countries are experiencing declining or stagnating fertility below replacement levels: the average fertility rate of women in the EU is 1.6. On average, almost all societies in Europe have fewer than two children per family.⁴

Eventually this will lead to a declining overall population. In 2010 the European Union had 499.4 million inhabitants. Eurostat forecasts that the EU27 population will continue to increase gradually until 2035, when it will reach 520.6 million inhabitants (519.9 millions in 2030). Positive net migration will be the main population growth factor. However, in the long run, increasing migration will not be sufficient to compensate for the negative population change. By 2050, the population of the EU will shrink to 515.3 million inhabitants.

But the low fertility and higher life expectancy will also result in a continuous rise of the average age of Europe's population. From 2010 onwards, as the post-war baby-boom generation is now reaching retirement age, the working-age population (15-64 years old) has started to decline and, by 2050, it will drop by 15% from 335 million people to 294 million in the EU. This age group will constitute a substantially smaller share of the total population, shrinking from 67% to 57%. The proportion of young people (aged 0-14) in the EU is projected to decrease slightly by 2050. At the same time, the proportion of the over-65 EU population will rise from 17% in 2010 to 29% in 2050 - from 87 million people to 148 million. Population projections suggest that the fastest growing age group in the EU will be those aged over 80 years, representing around 3% of total population in 2010, 7% in 2030, and 11% in 2050, rising from 23.3 million to 56.6 million people.

The demographic outlook is far from uniform: some countries such as Ireland, Slovakia and Cyprus have a more favourable demographic outlook, with the over-65 population in 2009 at 11%, 12% and 13% of the total population, respectively, compared to 19% in Greece and over 20% in Germany and Italy. However, by 2050, the share of the over-65 population in the European Union is expected to increase significantly, ranging between 23% and 33%. It is expected to be above 30% in eleven Member States (Bulgaria, Czech Republic, Germany, Greece, Spain, Italy, Poland, Portugal, Romania, Slovenia and Slovakia). Population ageing and demographic change are particularly noticeable in the new Member States: the highest growth in the over-65 cohort, measured by the difference between the respective population share in 2010 and 2050, will be recorded in the Czech Republic, Poland, Romania, Slovenia and Slovakia.

2. Policy implications of population ageing

The policy implications of population change are profound. The proportion of people of working age in the EU will shrink at the same time as the number of those who are potentially laying claim to retirement benefits and other public support mechanisms such as public healthcare expands.

Population ageing and demographic change will have a major impact on Europe's pension systems, whether publicly or privately funded. According to the European Commission 2009 Ageing Report, public spending on pensions is expected to increase from 10.1% of GDP in 2007 to 12.5% of GDP in 2060. Pension reforms, including higher statutory retirement ages, are already ongoing in many Member States, but they are not sufficient in scope and ambition to make pension systems sustainable. In addition, ageing will also put other burdens on public finances: supporting the ageing EU population will also be reflected in increasing demand for health and care services. This is aggravated by the changes in family structure and the growing participation of women in the labour market, which will affect the availability of informal carers; this change will likely result in a widespread need for formal and professional care. The European Commission 2009 Ageing Report estimates that the number of people relying on informal care will increase by 84% between 2007 and 2060, while in the same period the number of people receiving formal care will grow by 151% (people receiving care at home) and 185% (people receiving care in an institution).

One of the key questions will be how to finance the pressure on the welfare state, as the number of payers will decrease with a parallel rise in the number of recipients. Without significant actions, the sustainability of the EU's welfare systems would be at stake, threatening the foundation of the European social model. The impact of ageing populations on Europe's labour markets will also be critical. The reducing share of the working age population will result in a significant contraction of the labour force. In addition, due to the increasing proportion of the older workforce, European labour markets will need to adapt to a different range of labour practices and working conditions.

A shrinking labour force will necessitate harnessing the potential of a number of groups that are still under-represented in the labour market: among them, older workers, women, those from ethnic minorities and/or migration backgrounds, those with disabilities or work-limiting illnesses, and those with caring responsibilities.

In order to achieve better functioning labour markets, the European Commission launched in November 2010 the Flagship Initiative "An agenda for new skills and jobs: a European contribution toward full employment", as part of the Europe 2020 Strategy. It stems from "New Skills for New Jobs", a joint policy initiative developed in cooperation between the European Commission and the EU Member States as of 2008. The focus is on reinforcing flexicurity policies and promoting the right skills for employment. Further attention is given to the improvement of working conditions and the support to job creation. The initiative aims also at engaging marginalised groups such as migrants and long-term unemployed in the labour market; however, the proposed actions are still rather vague and need to be addressed through more concrete measures.

To balance out the gaps in the labour market, it will be necessary to attract and utilise temporary, circular and permanent migration. In addition, policy-makers must consider ways of creating more flexible working arrangements that can encourage elderly persons to remain within the labour market, adapting to more flexible working patterns.

Policy-makers could make a significant difference, steering the labour market in the direction of increased participation and shaping the structure of the future European labour force. Labour market policies must be designed in a holistic way to deal with the multi-faceted nature of population ageing, aiming to increase labour force participation to reconcile demographic developments and the social expenditure burden.

The challenge varies considerably across Europe: EU Member States feature a wide range of starting points, both with regard to the demographic outlook and the labour market performance. In order to assess their relative position, the choice of which indicator to use may be highly significant.

3. Measuring the impact of population ageing

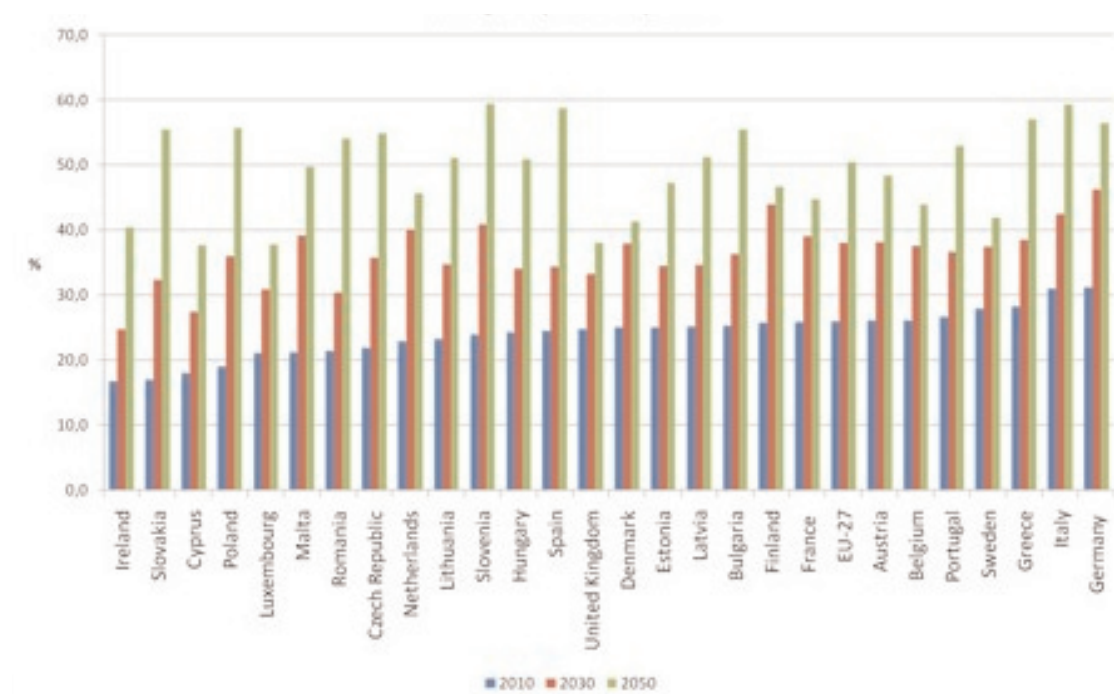
Dependency ratios are important demographic indicators that set the young and old populations (those generally economically inactive) in relation to the population of working age. There are different types of dependency ratio:

- Young-age dependency ratio: the population aged up to and including 14 years compared to the population aged between 15 and 64 years;
- Old-age dependency ratio: the population aged 65 years or older compared to the population aged between 15 and 64 years;
- Total dependency ratio: the population aged up to and including 14 years and aged 65 years or older compared to the population aged between 15 and 64 years.

Dependency ratios, and in particular the old-age dependency ratio, are often used to estimate the impact of demographic trends on welfare systems, providing a measure of what proportion of the population is able to work and how many are more likely to depend on social security benefits.

The average old-age dependency ratio in the EU is forecast to grow from 25.9% in 2010 up to 50.4% in 2050.⁵ This implies that in 2010 there were 4 people of working age supporting every one of pension age, while forty years later there will only be 2 people of working age for each person of retirement age.

Old-age dependency ratio



There are significant variations across Europe: Ireland and Slovakia had an old-age dependency ratio of respectively 16.7% and 16.9% in 2010, with the demographic outlook of Cyprus (18%) and Poland (19%) also favourable. At the other end of the scale, in Italy (31%) and Germany (31.2%) there are only just over three persons of working age for each one of pension age.

Ireland will still have the most favourable ratio in 2030, with an old-age dependency ratio of 24.6%, followed by Cyprus (27.4%) and Romania (30.3%). The demographic outlook of Italy and Germany will further deteriorate, reaching an old-age dependency ratio of 40.8% and 46.2%, respectively. Finland and Slovenia are also expected to be above the threshold of 40%. The average old-age dependency ratio across the EU is expected to be 38%, 12 percentage points more than in 2010.

The trend will persist in the following decades: as a result, the average EU old-age dependency ratio in 2050 will reach 50.4%. The figures will range from less than 38% (United Kingdom, Cyprus and Luxembourg) to more than 56% (Germany, Greece, Spain, Italy and Slovenia).

4. Labour market variations

The old age dependency ratio does, however, have an important flaw: it only measures the demographic profile of each country and doesn't capture the fact that many people of working age are actually not working. There are many possible reasons why this can be the case. The main reasons include:

- Unemployment;
- General education;
- Vocational training;
- Retirement (including standard retirement, early retirement or disability retirement);
- Occupational disability;
- Personal or family reasons, including caring for children or elderly relatives;
- Status of 'discouraged worker' (i.e. people who, while willing and able to engage in a job, are not seeking work or have ceased to seek work because they believe no suitable job is available).

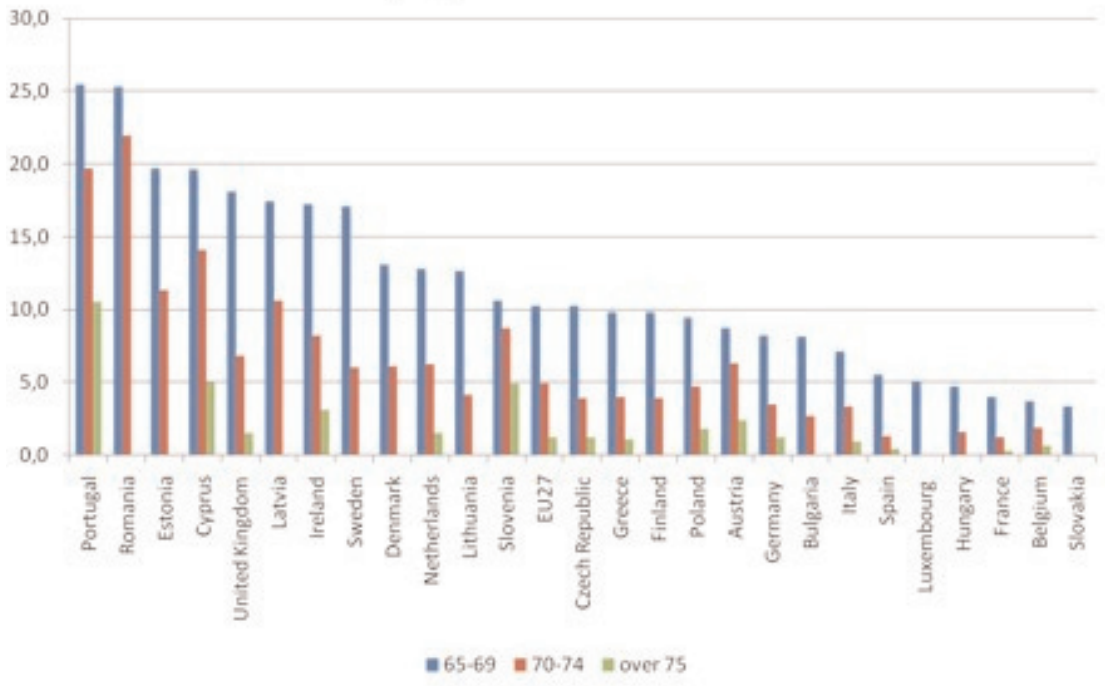
The definition of 'working age' (15-64 years old) can also be questioned: compulsory education ends after the age of 15 in most EU countries. Even considering the 20-64 age group may be inappropriate, since encouraging people to complete third level education is now part of the Europe 2020 Strategy as a means to stimulate growth. Furthermore, due to the strong impact of the financial crisis on youth unemployment, the age of labour market entry has risen for a significant number of young Europeans.

The following table shows the employment rate of workers in the 55-64 age group, i.e. below pension age.

<i>Employment rate of older workers</i>	2009
European Union (27 countries)	46,0
Belgium	35,3
Bulgaria	46,1
Czech Republic	46,8
Denmark	57,5
Germany	56,2
Estonia	60,4
Ireland	51,0
Greece	42,2
Spain	44,1
France	38,8
Italy	35,7
Cyprus	56,0
Latvia	53,2
Lithuania	51,6
Luxembourg	38,2
Hungary	32,8
Malta	28,1
Netherlands	55,1
Austria	41,1
Poland	32,3
Portugal	49,7
Romania	42,6
Slovenia	35,6
Slovakia	39,5
Finland	55,5
Sweden	70,0
United Kingdom	57,5

The old-age dependency ratio also does not take into account that many over 65s continue working. Employment rates for people aged over 65 are shown in the following table.

Employment rates over-65



Note: missing figures are not available

A considerable number of EU citizens exit the workforce before achieving the retirement age: the average employment rate of older workers (aged 55-64) in the EU was 46% in 2009. Sweden (70%) and Estonia (60%) topped the ranking, while Hungary, Poland and Malta recorded, respectively, 33%, 32% and 28%. On the other hand, the number of people above retirement age who are still in work is significant, and likely to grow in future. In 2009, more than 10% of EU citizens aged 65-69 years were still employed, with peaks of over 25% in Portugal and Romania.

More generally, overall labour market performance varies significantly across Europe. The following table illustrates the most recent annual unemployment rates across EU member states.

<i>Unemployment rate</i>	2009	2010
European Union (27 countries)	8,9	9,6
Belgium	7,9	8,4
Bulgaria	6,8	9,9
Czech Republic	6,7	7,4
Denmark	6,0	7,5
Germany	7,5	6,8
Estonia	13,8	:
Ireland	11,9	13,5
Greece	9,5	:
Spain	18,0	20,1
France	9,5	9,7
Italy	7,8	:
Cyprus	5,3	6,8
Latvia	17,1	:
Lithuania	13,7	:
Luxembourg	5,1	4,7
Hungary	10,0	11,2
Malta	7,0	6,7
Netherlands	3,7	4,5
Austria	4,8	4,6
Poland	8,2	9,7
Portugal	9,6	10,9
Romania	6,9	:
Slovenia	5,9	7,2
Slovakia	12,0	14,5
Finland	8,2	8,4
Sweden	8,3	8,4
United Kingdom	7,6	:

The economic crisis has brought the average EU unemployment rate up to 8.9% in 2009 and 9.6% in 2010, but the values range from below 5% in the best performing countries (Luxembourg, the Netherlands and Austria) to over 20% in Spain.

The variability of the economic activity in EU Member States is also notable. The EU average activity rate, e.g. the proportion of the labour force (employed + unemployed) over the population in working age, was 71% in 2009. The ranking was led by Denmark (80.7%), the Netherlands (79.7%) and Sweden (78.9%). Malta, Hungary and Italy recorded the lowest activity rates, respectively 59.1%, 61.6% and 62.4%: a difference of almost 20 percentage points between best and worst performers, e.g. 1/5 of the working population. The employment rate, which represents the number of persons in employment as a percentage of the population of working age, ranged in the same year from 54.9% in Malta to 77% in the Netherlands, while the EU average was 64.6%. The gender gap across the EU is considerable: in 2009, the female activity rate was 64.3%, i.e. 13.5 percentage points lower than the male activity rate; as for the employment rate, the difference was 12.1 percentage points (58.6% compared to 70.7%). In the case of Italy and Greece, the female-male gap for both indicators was above 20 percentage points, while in Malta it was higher than 30 percentage points.

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2009	Total		Males		Females	
	Activity rate	Employment rate	Activity rate	Employment rate	Activity rate	Employment rate
EU-27	71,0	64,6	77,8	70,7	64,3	58,6
Belgium	66,9	61,6	72,8	67,2	60,9	56,0
Bulgaria	67,2	62,6	72,0	66,9	62,5	58,3
Czech Republic	70,1	65,4	78,5	73,8	61,5	56,7
Denmark	80,7	75,7	84,0	78,3	77,3	73,1
Germany	76,9	70,9	82,3	75,6	71,4	66,2
Estonia	74,0	63,5	77,6	64,1	70,6	63,0
Ireland	70,2	61,8	78,1	66,3	62,4	57,4
Greece	67,8	61,2	79,0	73,5	56,5	48,9
Spain	73,0	59,8	81,0	66,6	64,8	52,8
France	70,6	64,1	75,1	68,4	66,2	60,0
Italy	62,4	57,5	73,7	68,6	51,1	46,4
Cyprus	74,0	69,9	82,0	77,3	66,2	62,5
Latvia	73,9	60,9	77,0	61,0	71,0	60,9
Lithuania	69,8	60,1	72,0	59,5	67,8	60,7
Luxembourg	68,7	65,2	76,6	73,2	60,7	57,0
Hungary	61,6	55,4	68,2	61,1	55,3	49,9
Malta	59,1	54,9	76,6	71,5	40,8	37,7
Netherlands	79,7	77,0	85,3	82,4	74,1	71,5
Austria	75,3	71,6	81,0	76,9	69,6	66,4
Poland	64,7	59,3	71,8	66,1	57,8	52,8
Portugal	73,7	66,3	78,5	71,1	69,0	61,6
Romania	63,1	58,6	70,9	65,2	55,4	52,0
Slovenia	71,8	67,5	75,6	71,0	67,9	63,8
Slovakia	68,4	60,2	76,3	67,6	60,6	52,8
Finland	75,0	68,7	76,4	69,5	73,5	67,9
Sweden	78,9	72,2	81,4	74,2	76,4	70,2
United Kingdom	75,7	69,9	82,0	74,8	69,5	65,0

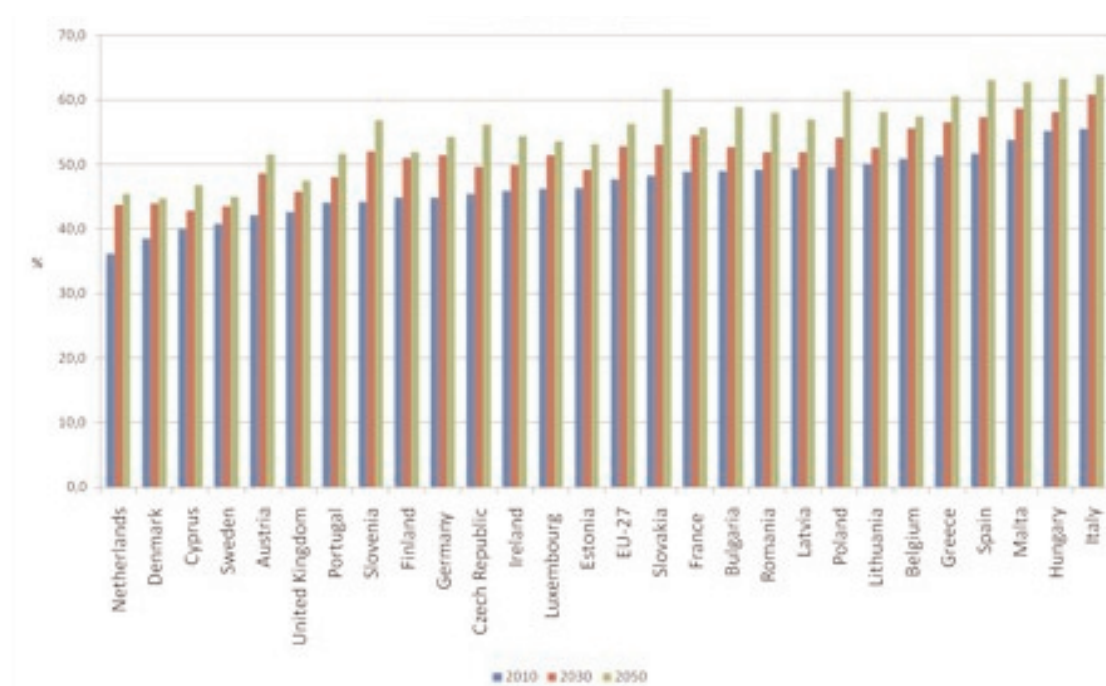
In order to assess more accurately the EU welfare systems' future sustainability, a different measure should take into account how many people actually need to be supported as a proportion of the total population.

5. The labour market adjusted dependency ratio

A useful indicator is derived by calculating the proportion of people who are not in work as a proportion of the total population.⁶ An analysis of this ratio shows that in addition to demographic trends, the structure and functioning of the labour market has a critical impact. This ratio, the Labour Market Adjusted Dependency Ratio (LMADR), has been calculated by applying the employment and unemployment rate of the year 2009⁷, by country and age group, to the estimated population of 2010, 2030 and 2050 (Eurostat projections).

Looking at the ranking of the European countries, the new measure gives a completely different picture. In 2010, the EU countries had a LMADR of 47.7% on average, meaning that, currently, in the EU, almost half of the population is unemployed, retired or inactive for other reasons. Values range from 36.2% in the Netherlands to 55.4% in Italy.

LMA dependency ratio



The Netherlands and Denmark are in the most favourable position, recording a LMADR of respectively 36.2% and 38.5%, i.e. one non-working person in every three. The main driver of this result is their labour market structure, and especially their female employment rate, which is the highest in Europe: over 70% in 2009 for both countries, while the EU average is 58.6%.

Cyprus, with a LMADR of 40%, is in third position. Cross-checking this result with its performance on the old-age dependency ratio suggests that the demographic factor is the main reason for good performance: population ageing is relatively modest, with a proportion of people aged over 65 among the lowest in Europe. However, Cyprus' high employment rate of people aged over 60 should also be noted.

Sweden is fourth in the ranking, recording a LMADR of 40.8% in 2010 while it has the fourth worst performance in the old-age dependency ratio. Reasons for this Swedish performance include high employment rates across gender and across all age groups, especially for the over-55 cohort.

At the opposite end of the scale, Italy performs very poorly according to both indicators. An analysis of its LMADR (55.4% in 2010) suggests that, besides its unfavourable demographic outlook, the low employment rate is a considerable weakness. In particular, female employment rates across age groups are far below the EU average.

In the case of Hungary, which has a LMADR also above 55%, its weak performance is mainly due to its labour market structure, with a low participation rate across all ages and especially for people aged over-55.

Looking at the following decades, the LMADR will increase up to 52.7% in 2030 (+5 percentage points compared to 2010) and 56.3% in 2050 (+8.5 percentage points compared to 2010).

In 2030, Cyprus and Sweden would strengthen their position in the ranking, holding the first and the second position before the Netherlands and Denmark. The LMADR is expected to be 42.8% in Cyprus and 43.5% in Sweden. Cyprus would benefit from a better demographic outlook, while Sweden would especially benefit from its high employment rate among the older age groups.

Italy would remain at the bottom of the ranking, with a LMADR of 60.7%. In terms of difference between 2010 and 2030, Slovenia and the Netherlands would experience the deepest deteriorations, respectively +7.8 percentage points and +7.5 percentage points.

In 2050, the ranking will be led by Denmark (44.7%) and Sweden (44.9%), followed by the Netherlands (45.4%), Cyprus (46.7%) and the United Kingdom (47.5%). The United Kingdom is forecast to be the Member State with the lowest proportion of people aged over 65 in 2050: 23% of the total population. All the remaining Member States would record a LMADR above 50%. The situation would be extremely negative in Italy (63.8%), Hungary (63.3%) and Spain (63.1%). Slovenia, Poland and Czech Republic would face the higher differences between 2030 and 2050; in terms of overall difference between 2010 and 2050, five Member States would record increases above 10 percentage points: Slovakia, Slovenia, Poland, Spain and Czech Republic.

The following table contrasts the LMADR with the old age dependency ration across countries and the reference years.

	2010				2030				2050			
	old-age DR		LMA DR		old-age DR		LMA DR		old-age DR		LMA DR	
	%	rank	%	rank	%	rank	%	rank	%	rank	%	rank
Ireland	16.7	1	45.8	12	24.6	1	49.8	10	40.4	4	54.3	12
Slovakia	16.9	2	48.2	15	32.3	5	53.0	19	55.5	21	61.8	23
Cyprus	18.0	3	40.0	3	27.4	2	42.8	1	37.7	1	46.7	4
Poland	19.0	4	49.4	20	36.0	13	54.2	20	55.7	22	61.4	22
Luxembourg	21.1	5	46.2	13	30.8	4	51.4	12	37.8	2	53.6	10
Malta	21.2	6	53.8	25	39.1	22	58.7	26	49.8	13	62.7	24
Romania	21.3	7	49.2	18	30.3	3	51.9	15	54.0	18	58.0	18
Czech Republic	21.8	8	45.4	11	35.7	12	49.6	9	54.8	19	56.1	14
Netherlands	22.8	9	36.2	1	40.0	23	43.7	3	45.6	9	45.4	3
Lithuania	23.2	10	50.0	21	34.7	11	52.6	17	51.1	16	58.1	19
Slovenia	23.9	11	44.1	8	40.8	24	51.9	16	59.4	27	56.8	15
Hungary	24.2	12	55.2	26	34.1	7	58.1	25	50.8	14	63.3	26
Spain	24.4	13	51.6	24	34.3	8	57.3	24	58.7	25	63.1	25
United Kingdom	24.7	14	42.6	6	33.2	6	45.8	5	38.0	3	47.5	5
Denmark	25.0	15	38.5	2	37.8	18	43.9	4	41.3	5	44.7	1
Estonia	25.0	16	46.3	14	34.4	9	49.2	8	47.2	11	53.0	9
Latvia	25.2	17	49.4	19	34.6	10	51.8	14	51.2	15	57.0	16
Bulgaria	25.3	18	48.9	17	36.3	14	52.7	18	55.4	20	58.9	20
Finland	25.7	19	44.8	9	43.9	26	51.0	11	46.6	10	51.8	8
France	25.8	20	48.8	16	39.0	21	54.5	21	44.7	8	55.8	13
Austria	26.0	21	42.2	5	38.1	19	48.6	7	48.3	12	51.5	6
Belgium	26.1	22	50.9	22	37.6	17	55.6	22	43.9	7	57.4	17
Portugal	26.6	23	44.0	7	36.6	15	48.0	6	53.0	17	51.7	7
Sweden	27.8	24	40.8	4	37.4	16	43.5	2	41.9	6	44.9	2
Greece	28.2	25	51.3	23	38.5	20	56.5	23	57.0	24	60.6	21
Italy	31.0	26	55.4	27	42.4	25	60.7	27	59.2	26	63.8	27
Germany	31.2	27	44.9	10	46.2	27	51.4	13	56.4	23	54.3	11
EU-27	25.9		47.7		38.0		52.7		50.4		56.3	

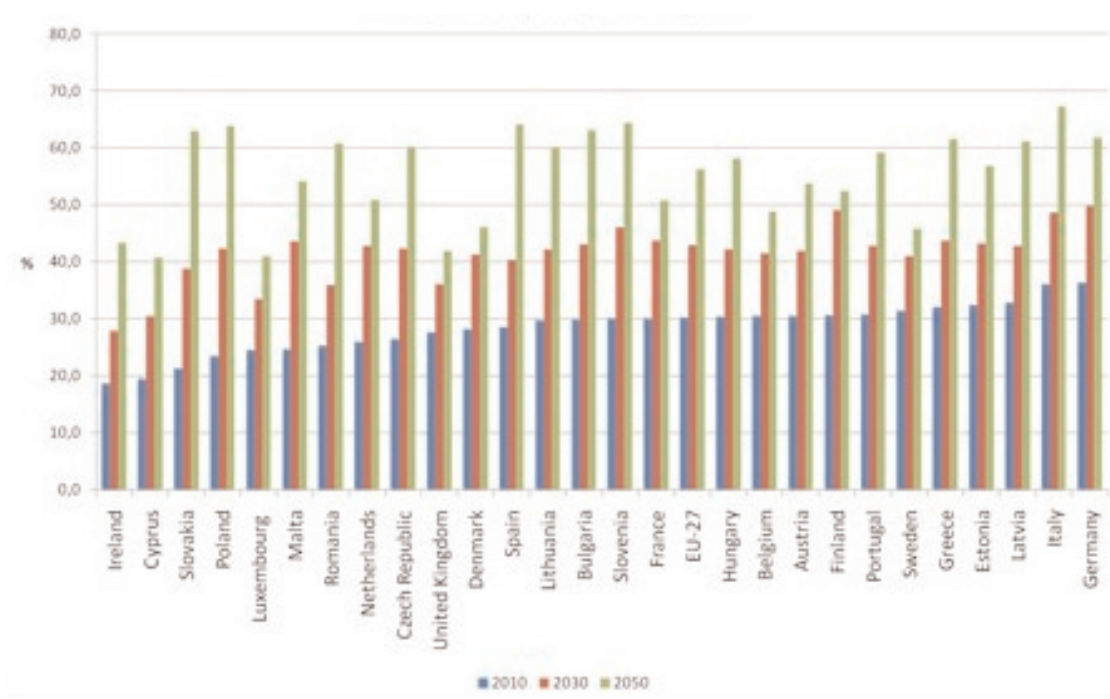
It clearly shows that countries such as Ireland and Hungary have relatively benign demographic profiles but perform much worse where labour market performance is concerned. The opposite applies to the Netherlands, Denmark, Sweden and Germany, whose labour market performance significantly mitigates their more unfavourable demographic profile.

6. Exploiting potential: a gender perspective

Low labour market participation is one of Europe's longstanding key structural weaknesses. Besides lowering economic growth, it is directly linked to poverty and social exclusion as well as mental health issues and well-being. Exploiting domestic economic potential by boosting labour market participation of under-represented groups can alleviate the burden on public finances and, at the same time, enhance the well-being of these groups.

Considering the higher female life expectancy, the result is a female dependency ratio significantly higher than the male one. If we look at the old-age female dependency ratio, the figures in 2010 range from 18.6% in Ireland to 36.3% in Germany, with an EU average of 30.2%, compared to 21.6% for men. In 2030, the same indicator ranges between 27.9% and 49.8%, while the EU average increases to 42.9%. In 2050, the EU average is 56.2%; the best position in the ranking will be held by Cyprus (40.7%) and the worst one by Italy (67.3%). Male dependency ratio, on the other hand, would increase to 33.2% in 2030 and 44.8% in 2050, well below female levels.

Female old-age dependency ratio



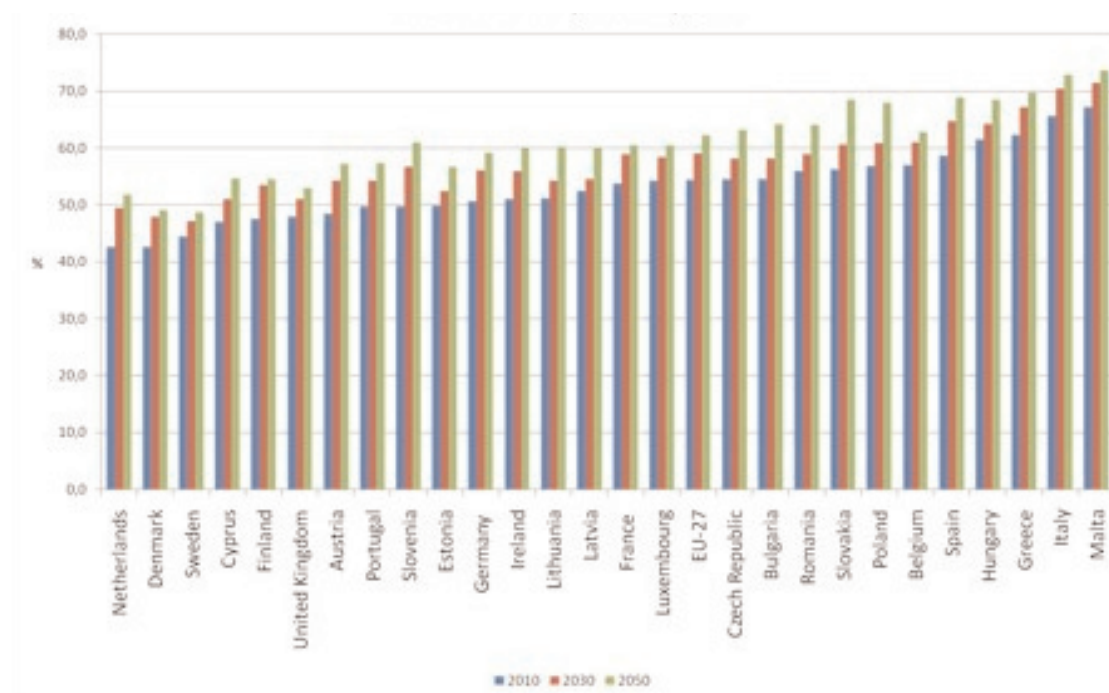
While the dependency ratio is already higher when only looking at the female demographic dimension, the situation is aggravated when we take into account the labour market dimension.

In most European societies, female overall employment rates are lower than those of men, often entering retirement earlier and having more economic inactivity due to caring responsibilities. Across the 27 Member States, the employment rate of women aged 15-64 in 2009 was 58.6%, while the same figure for men was 70.7%. The variability across European countries is extremely large, with values ranging from 37.7% (Malta) to 73.1% (Denmark). Italy, Greece and Hungary also recorded an employment rate for women below 50%, while the United Kingdom, Germany, the Netherlands and the Scandinavian countries have figures above 65%. According to a recent Eurostat analysis, the EU employment rate for

women aged 25 to 54 decreases as the number of children increases, while for men in this age group the pattern observed goes in the opposite direction.

The female LMADR across the 27 Member States is 54.3% in 2010, compared to a male rate of 35.4%. The Netherlands and Denmark, both recording a female LMADR of 42.6%, would be the best performing countries, followed by Sweden with 44.4%. Finland, which has female employment rates above the EU average across all ages, would considerably increase its position from 9th to 5th, compared to the total LMADR ranking. Lithuania and Latvia would also improve their relative position significantly, thanks to their high female employment rates for the over-55 age group. Malta would stand at the bottom of the ranking, with a female LMADR of 67.1%, mainly due to its very low levels of female employment rates. Italy would be close (65.7%), because of the combination of low female employment and sharp population ageing.

Female LMA dependency ratio



The situation would further deteriorate in 2030, when the LMADR of the female population in the EU would stand at 59%. Across the Member States, the value would range from 47.2% in Sweden to 71.5% in Malta. The same figure for men would be 40.3% in the EU.

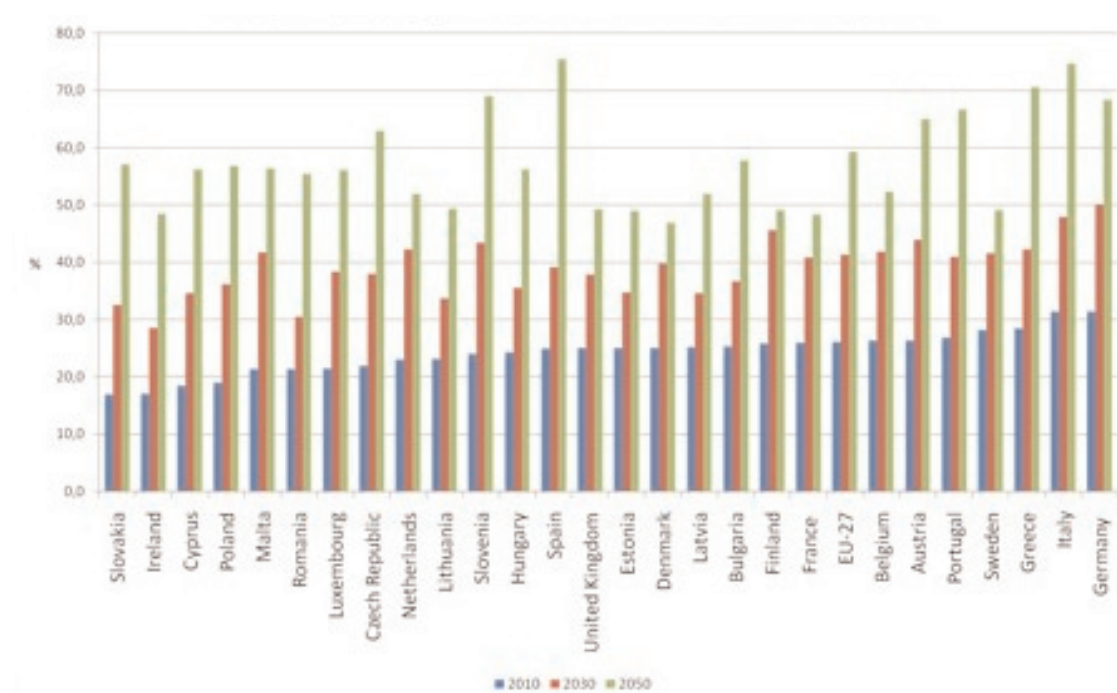
By 2050, only Sweden and Denmark would record a female LMADR below 50% (respectively, 48.6% and 49%). The EU average would correspond to 62.3% (44.7% for men), with seven Member States experiencing a female LMADR over 65%. In Malta, Italy and Greece the difference between the female LMADR and the total one would be around 10 percentage points or above, a result that stresses the need for extensive labour market reforms to facilitate female labour market participation.

7. Help from outside: the role of migration

At constant labour force participation rates, the number of economically active people would shrink from 220 to 210 million in 2030 and to 194 million in 2050. However, these projections include positive net migration. In the absence of any international migration the decline would be even sharper. According to Eurostat projections, without migration the working-age population of the EU would fall to 385 million in 2050 instead of 443 million including migrants; by the same year, the number of economically active people would drop to 159 million if labour force participation would remain constant over time. Given ageing populations, migration is thus crucial to increase dynamism in European labour markets and reduce the burden on welfare systems.

The age structure of the immigrant population is different from the native population, with a higher share of foreign-born population of working age. This can be explained by the relative importance of labour migration, by the average age of immigrants entering through family reunification programmes, and by the age selection associated with return migration after retirement. Looking at the old-age dependency ratio, the EU average in the absence of international migration⁸ would increase from 38% to 41.3% in 2030 and from 50.4% to 59.2% in 2050. Spain and Italy would record an old-age dependency ratio of 75.4% and 74.7%, respectively, in 2050. In the same year, the old-age dependency ratio of five additional Member States (Greece, Slovenia, Germany, Portugal and Austria) would be equal to or greater than 65%.

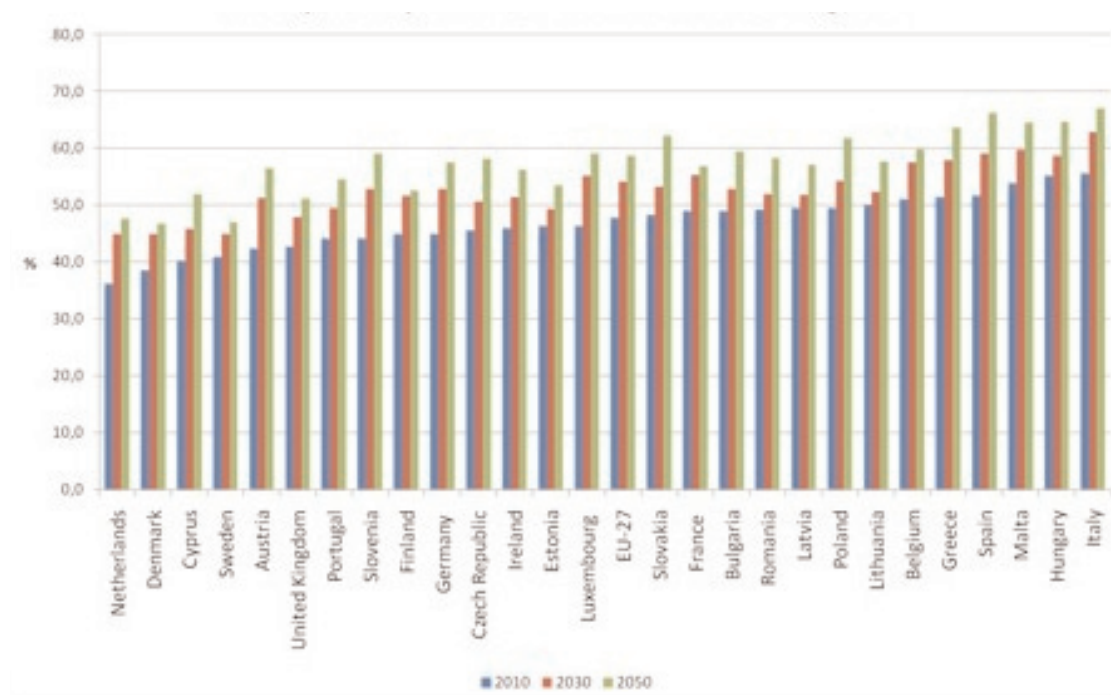
Old-age dependency ratio in absence of international migration



The difference in old-age dependency ratio without migration, compared to a scenario including international migration, would be highest in Cyprus (+18.5 percentage points), Luxembourg (+18.2 percentage points), Austria (+16.7 percentage points), Spain (+16.7 percentage points) and Italy (+15.4 percentage points). The case of Spain and Italy and the poor overall performance in the no-migration scenario, shows the crucial importance of international migration in mitigating the impact of demographic change and population-ageing.

Regarding the LMADR, in 2030 the EU average would be 54.1% without migration, compared to 52.7% of the scenario including migration. The same figure would increase up to 58.6% in 2050 (56.3% with international migration). In the same year, the only Member State increasing its performance in a no-migration scenario would be Lithuania.

LMA dependency ratio in absence of international migration



Denmark and Sweden would still stand at the top of the ranking in 2050, with an increase in their LMADR of around 2 percentage points. Cyprus, Luxembourg and Austria would again be the Member States facing the biggest increase compared to the migration-scenario, with the difference in this indicator being between 5 and 5.4 percentage points. Italy and Spain would be the worst performers in 2050: their LMADR in the absence of international migration would reach 67% and 66.3%, respectively, while migration would bring them down to 63.8% and 63.1%.

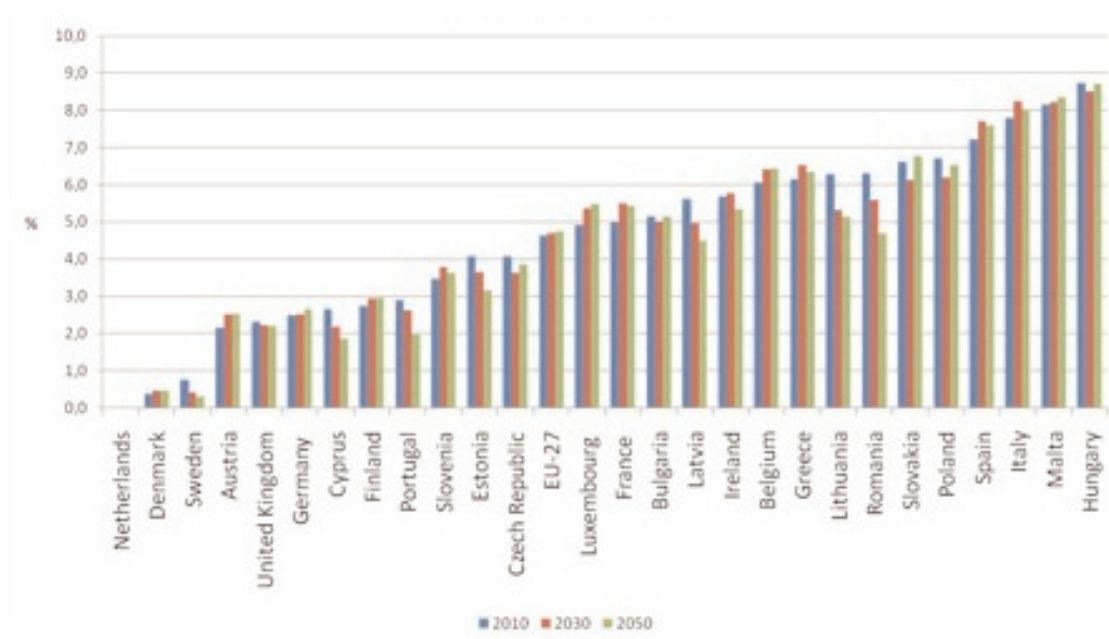
8. Time to learn from the best performers? What we could achieve...

The LMADR shows that Europe faces a significant challenge, given the combination of ageing and often poor labour market performance. But the calculations also show that significant improvements can be achieved by reforming European labour markets and increasing employment rates.

If we use average employment rates in the EU (by age groups) to assess the potential impact of a healthier labour market, most EU Member States could postpone many of the negative impacts of population ageing. While the overall ageing of the population cannot be reversed, higher labour market participation makes the situation significantly more sustainable.

Applying the current average EU employment rates in 2050 across all EU Member States, four of the six Member states expected to have a LMADR above 60%, i.e. Slovakia, Malta, Hungary and Greece, would fall below this threshold. Italy and Spain would still record a LMADR above 60%, but with progress of 3.5 and 3 percentage points, respectively. Hungary and Malta would witness the highest improvements (respectively, 4.1 and 3.8 percentage points).

Reduction in LMA dependency ratio using best performer employment rates



This becomes even clearer when we use the employment rates of the best performing labour-market, currently the Netherlands. If all Member States had employment rates as high as those in the Netherlands across all ages, only Malta and Italy would have a LMADR above 50% by 2030. Hungary, Malta and Cyprus would improve their situation by more than 8 percentage points, while 12 other Member States would record a decrease in the LMADR of at least 5 percentage points. The EU average LMADR would go down from 52.7% to 48%.

The same trends would apply to 2050. The EU average would be 51.6% instead of 56.3%. The LMADR would range from 44.3% (Denmark) to 55.8% (Italy). Again, the most significant differences would be recorded in Hungary, Malta, Italy and Spain. Slovakia, Belgium, Poland and Greece would also improve their dependency position considerably. These countries would have the opportunity to implement

extremely cost-effective measures, as they have a considerable unexploited potential. Countries with good labour market performances, on the contrary, have a higher marginal cost associated with labour market improvements, and would need higher investment. Therefore, for EU member states at the bottom of the LMADR ranking, identifying the problem and setting the right objectives could result in considerable gains, both for the labour force and for policy-makers.

9. ...and how we could achieve it⁹

Boosting labour market participation is possible: several policy instruments are available to policy-makers.

Active family policies can have an impact in addressing the negative implications of demographic change on the sustainability of European welfare systems if they can improve domestic fertility rates and eventually reverse the current demographic trends. A number of countries have tried using material incentives, as well as institutional measures that allow mothers to stay in the workforce without compromising their own income and their old age pension. However, even if effective (which is doubted by many) they will not be sufficient. In the short and medium term, the shortages in the labour market cannot be addressed by family policy. The major role must be played by a well-functioning labour market.

The EU average employment rate of people aged 55-59 is only 60% and for 60-64 years old it is a mere 30.4%. This result is partially caused by an improper functioning of labour markets for elderly people. The Draft Joint Employment Report of the European Commission, part of the Annual Growth Survey, lists low demand from employers, low levels of up-skilling, lack of assistance for job search, early retirement benefits, insufficient reintegration and re-training provision after redundancy as factors responsible for early exit from the labour market.¹⁰ **Pro-active labour policies** should be oriented at addressing the specific needs of these workers, in order to engage and retain them in the labour market. Companies will need to adapt their workplaces and practices radically to accommodate the older workforce e.g. supporting flexible working arrangements.

Moreover, the European Commission has recently launched the **European Innovation Partnership on Active and Healthy Ageing**, aiming to enable EU citizens to lead healthy, active and independent lives while ageing. It will be crucial for the Commission to be able to provide the proper framework and build on its competence to implement the right actions, committing from a range of different policy fields. Given the cross-sectoral scope of the initiative, coordination of measures may not be easy but has to be ensured. Promoting measures that foster active and healthy ageing can have a significant impact in boosting employment rate in older age groups: the EU must not miss this opportunity.

The **development of new technologies** enabling older people to stay in the labour market should be accompanied by measures designed to influence employers' decisions and lower the cost of employing an older worker. Wages need to provide rewards commensurate with the worker's contribution, therefore they must reflect productivity levels rather than seniority levels. This requires a change in attitude for employers and employees.

At the same time, the **link between contributions, duration of employment and value of pension right** should be reconsidered. Pension systems must be better linked to lifelong contributions, in order to encourage older workers to continue working for a lower wage. For people aged above pension age, clear financial incentives to continue working and building up more pension entitlement must be present, for example ensuring that additional work income does not reduce other entitlements.

Early retirement schemes represent a considerable financial burden on those in work. Pension systems should no longer favour early retirement schemes, and more favourable retirement conditions for civil servants and workers employed in particular sectors must be reduced and, eventually, eliminated.

Policies must also exploit domestic potential by **supporting higher female employment**. The focus should not only be on equal opportunities and balanced take-up of paternal responsibilities, but also on child care programs and school systems that help mothers to stay in the work force. Labour markets should not penalise parental career breaks in terms of career development and accruing of pension rights. **Well-designed taxes** can also play a significant role for those countries where family based taxation results in higher effective taxes for second earners. Moreover, the care needs of ageing populations are resulting in a significant challenge, both for societies in general and for women in particular, given their role in caring for the elderly, and must be addressed.

In many EU countries the migrant population has lower employment rates compared to the native-born population, in particular migrant women. In addition to that, an increasing number of EU countries have a sizeable second and third-generation immigrant population, who continue to suffer greater incidence of early school leaving, lower levels of qualification and smaller numbers in higher education, resulting in lower employability and worse labour market outcomes. Providing **training opportunities** for unskilled migrants or 2nd/3rd generation migrants who are falling behind would raise their level of employability, although this kind of action may require high investments, targeted at these groups. More also needs to be done to create an inclusive schooling system, with comprehensive early education and all-day schooling. Furthermore, immigrants employed below their skill levels are still extremely common in EU Member States and this aspect must be corrected, e.g. through better recognition systems for non-EU qualifications.

At the same time, strategies aimed at **achieving higher labour force participation of migrants** should be coupled with **pro-active economic migration measures**. There are serious deficits of workers in sector such as science, technology, health, engineering, but also lower skilled jobs in areas such as care, and the EU is facing increasing global competition for migrants with sought-after skills. European migration policy must make the EU a more attractive destination for qualified and highly motivated immigrants and their families if the EU wants to retain its global competitiveness and a healthy labour market.

The European workforce, especially low-skilled workers and the long-term unemployed, must be offered more **lifelong learning opportunities**, aiming to balance additional public sector investments with a long term reduction in benefit payments. Inequitable access to lifelong learning needs also to be addressed, since employees with permanent contracts often have better access to these opportunities, compared to temporary workers and unemployed. Long term unemployment must be addressed by fostering skills-development and boosting employability in order to reduce the risk of labour market exclusion, ensuring that non-traditional learners have access to tailored education and training opportunities. Well targeted active labour market policies should be directed to unemployed and disadvantaged groups, and their governance and effectiveness need to be improved.

Current labour market rigidities must be addressed. Companies need **greater flexibility** in order to adapt employment levels to the economic conditions; at the same time, workers need a safety net against market fluctuations. Practices such as the flexicurity system have proven to be effective in reducing labour market rigidities without jeopardising employees' security. While the shift of economic activity from declining to growing sectors must be encouraged, specific measures should support workers in declining sectors. As the German example of '*Kurzarbeit*' demonstrated during the economic crisis, support programmes which keep workers in their job in a temporary downturn can have long term benefits, as long as these supports are withdrawn after the crisis and support is not given to firms which are not viable in the long run.

The **participation of the younger age groups** can be boosted by creating opportunities to combine education and work. Europe also needs to ensure that young people are equipped with higher labour market focused skills and key competences, in order to facilitate their labour market entry, enhance competitiveness and address future skill gaps. Furthermore, the focus on quality of education should be enhanced, ensuring the effectiveness of time spent in secondary and post-secondary education.

The Europe 2020 Strategy may play a significant role in helping the EU to tackle the challenge of population ageing. One of the five headline targets aims at achieving an employment rate of 75% for the 20-64 age group by 2020, through greater participation of young people, older workers and low skilled workers, as well as better integration of legal migrants. Some EU Member States such as Sweden and Denmark have already set national targets above this threshold (respectively, 80% and 78.5%) in their National Reform Programmes; however, as noted before, the greatest potential is in the worst performing countries. Achieving this target would not only foster smart, sustainable and inclusive growth in Europe, but also reduce considerably the impact of demographic change on the European labour market.

The Europe 2020 Strategy recognises the need to invest in quality education, training and lifelong learning. A stronger human capital base is essential to overcome the challenges of demographic change in

Europe. The twofold education target (reducing school drop-out rates below 10% and at least 40% of 30-34 year-olds with third level education or equivalent) may not be sufficient; it should be coupled with actions providing more flexible learning pathways for people inside and outside of the labour market.

The main problem of Europe 2020 remains implementation. While the EU can, to some extent, contribute with its own policy instruments, such as the European Social Fund, most action has to be in the Member States. The new economic governance architecture, with the European Semester of policy coordination and the 'Euro Plus Pact', will reinforce the link between the National Reform Programmes and the Europe 2020 Strategy targets. This might provide an opportunity to strengthen implementation of structural labour market reforms.

10. Conclusions and recommendations

European policy-makers are facing a major challenge: in order to address the implications of the population ageing, they are required to adopt a long-term vision and a wide-ranging approach. The comparison of the different performances of European member states show that effective policy actions exist, and they could make a significant contribution to tackling the issue. But this result cannot be achieved without a joint effort of all stakeholders, which should be reflected in far-reaching reforms.

The analysis of the LMADR in the EU suggests that there are three main areas of intervention.

1. Labour market reforms are needed to achieve higher labour force participation.

Involving the under-represented categories, such as women and migrants, is essential in building a system geared to participation. Special attention should be given to those people at risk of exclusion from the labour market. Some successful tools, such as the introduction of flexicurity measures, have already been implemented in some member states; their use should be supported and encouraged.

2. The debate on pension systems reform must have a broader focus than just the increase in retirement age.

A rise in retirement age and a significant reduction of early retirements are both priorities in Europe. But the focus should go far beyond: they will not be sufficient to achieve financial sustainability, unless they are coupled with measures promoting labour market participation of the older cohort of the workforce. Financial incentives to continue working, and supporting measures to flexible working arrangements should be incorporated in the systems. The possibilities of second careers should be widened, maintaining a flexicurity approach e.g. providing mentoring and downshifting opportunities and creating a market for provisional labour; at the same time, the accrual of pension benefits must not be penalised. The value of pension rights must be linked to life-long contributions rather than end-of-worklife salary levels.

3. An attitude change towards work is required.

Being employed is one of the most important determinants of people's well-being. However, the combination of later entry into the labour market (due to longer time spent in education) and increasing life expectancy, is leading to a considerable reduction of the proportion of lifetime spent working. Enhanced attention to workplaces and working conditions (e.g. enhanced flexibility) would reduce labour-market exclusion and contribute to promote the concept of employment as a source of identity and self-fulfillment.

A broader participation in the European labour market is a key driver for economic growth. It can help ensure fiscal sustainability while enhancing social cohesion and citizens' well-being. Reforming Europe's labour markets is also the single best response to the demographic challenge. Europe cannot afford to waste this potential.

Annex

Population projections, 2010 ('000)

	0-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	over 65	Total
EU-27	77,625	28,636	31,858	33,794	34,745	36,216	37,773	36,790	34,427	31,897	28,853	86,777	499,389
Belgium	1,811	648	659	687	690	742	785	816	766	690	633	1,857	10,784
Bulgaria	1,018	418	519	540	580	557	519	522	529	531	510	1,321	7,564
Czech Republic	1,466	613	681	738	914	835	693	673	697	761	722	1,600	10,394
Denmark	998	349	323	309	350	385	412	398	364	350	373	902	5,512
Germany	11,044	4,329	4,972	5,044	4,788	5,283	6,896	7,049	6,071	5,441	4,330	16,897	82,145
Estonia	201	81	107	102	93	92	86	93	93	85	73	227	1,333
Ireland	954	292	334	414	400	355	320	298	267	241	216	523	4,614
Greece	1,621	574	635	793	864	881	878	802	770	703	656	2,132	11,307
Spain	7,008	2,292	2,713	3,458	4,101	4,002	3,757	3,461	3,045	2,619	2,428	7,788	46,673
France	11,524	3,762	3,969	4,003	3,847	4,347	4,329	4,335	4,160	4,072	3,760	10,474	62,583
Italy	8,412	2,932	3,078	3,473	4,178	4,786	4,926	4,628	4,024	3,692	3,680	12,208	60,017
Cyprus	140	58	64	73	64	59	57	58	54	48	42	104	821
Latvia	307	144	183	173	156	159	152	166	160	137	118	390	2,247
Lithuania	492	242	271	244	219	237	244	263	235	193	163	535	3,337
Luxembourg	89	30	29	33	35	38	41	39	35	30	25	71	494
Hungary	1,486	603	646	700	852	754	676	603	711	738	590	1,665	10,023
Malta	65	28	29	31	31	27	25	29	30	29	30	61	414
Netherlands	2,890	1,010	1,007	994	994	1,176	1,293	1,285	1,175	1,081	1,069	2,529	16,503
Austria	1,255	504	523	563	533	605	708	698	594	494	452	1,476	8,405
Poland	5,706	2,530	2,956	3,274	3,034	2,638	2,333	2,530	2,994	2,809	2,123	5,166	38,092
Portugal	1,642	569	624	756	845	832	785	780	713	664	607	1,907	10,723
Romania	3,222	1,260	1,718	1,608	1,756	1,661	1,668	1,231	1,501	1,419	1,106	3,186	21,334
Slovenia	282	107	131	149	156	147	154	155	156	149	109	338	2,034
Slovakia	821	368	418	452	472	412	362	381	396	379	283	665	5,407
Finland	885	334	323	342	336	310	358	378	377	388	397	911	5,337
Sweden	1,537	633	605	569	577	632	660	619	584	575	624	1,690	9,306
United Kingdom	10,752	3,923	4,338	4,276	3,877	4,265	4,657	4,500	3,926	3,583	3,732	10,155	61,984

Population projections, 2030 ('000)

	0-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	over 65	Total
EU-27	75,533	27,122	28,460	29,000	30,007	32,702	34,652	34,921	34,628	35,034	35,418	122,465	519,942
Belgium	1,912	649	676	683	710	761	750	738	708	730	743	2,686	11,745
Bulgaria	849	350	366	341	323	416	508	519	546	508	453	1,772	6,753
Czech Republic	1,334	531	574	521	530	679	733	767	913	810	647	2,391	10,420
Denmark	980	313	345	362	378	380	337	304	337	364	381	1,325	5,808
Germany	10,149	3,492	3,777	4,258	4,629	4,961	5,332	5,141	4,742	5,094	6,457	22,129	80,152
Estonia	191	76	75	66	61	80	103	96	86	83	74	276	1,267
Ireland	1,113	402	390	373	360	366	397	451	417	358	311	942	5,881
Greece	1,502	588	629	618	629	674	712	835	878	869	841	2,798	11,573
Spain	7,041	2,880	3,037	2,944	2,813	3,004	3,295	3,837	4,316	4,096	3,742	11,655	52,661
France	11,796	4,057	4,117	4,090	3,951	3,990	4,120	4,048	3,800	4,184	4,059	15,770	67,982
Italy	7,571	2,857	3,151	3,320	3,423	3,664	3,728	3,913	4,411	4,839	4,813	16,180	61,868
Cyprus	178	63	63	64	73	81	83	84	71	63	57	192	1,072
Latvia	277	112	111	100	94	140	175	162	142	140	127	451	2,033
Lithuania	434	159	152	148	176	231	255	227	201	211	208	683	3,083
Luxembourg	102	34	35	40	43	42	39	39	37	37	39	119	607
Hungary	1,312	504	523	517	547	645	673	703	820	697	593	2,119	9,651
Malta	60	21	22	22	27	30	31	32	31	27	24	104	432
Netherlands	2,695	868	942	1,082	1,082	1,109	1,058	986	950	1,102	1,187	4,147	17,208
Austria	1,268	448	480	517	558	604	590	593	539	592	670	2,129	8,988
Poland	4,852	1,918	1,882	1,797	2,045	2,516	2,905	3,173	2,882	2,436	2,080	8,500	36,975
Portugal	1,501	571	611	662	665	691	723	814	867	826	755	2,632	11,317
Romania	2,597	1,035	1,066	1,055	1,100	1,250	1,685	1,553	1,660	1,522	1,468	4,060	20,049
Slovenia	259	102	105	110	104	116	137	151	154	141	143	512	2,023
Slovakia	686	271	273	265	296	372	419	446	456	387	326	1,134	5,332
Finland	909	310	307	300	316	350	336	348	335	301	336	1,421	5,569
Sweden	1,777	585	594	572	575	722	680	611	590	622	630	2,313	10,270
United Kingdom	12,188	3,925	4,157	4,185	4,511	4,838	4,848	4,351	3,739	3,995	4,262	14,225	69,224

Population projections, 2050 ('000)

	0-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	over 65	Total
EU-27	72,414	24,699	26,200	28,173	29,600	30,454	30,671	29,865	29,951	31,856	32,973	148,448	515,303
Belgium	1,916	646	675	715	734	737	742	716	717	746	717	3,134	12,194
Bulgaria	731	256	264	288	323	354	362	332	308	390	464	1,852	5,923
Czech Republic	1,247	416	440	499	554	597	624	552	533	670	700	3,060	9,892
Denmark	960	339	356	358	342	340	356	356	366	364	317	1,443	5,895
Germany	9,015	3,244	3,603	3,931	4,050	4,055	4,122	4,361	4,596	4,815	5,081	23,319	74,491
Estonia	171	55	58	65	72	75	73	63	58	74	93	324	1,181
Ireland	1,142	366	375	399	423	424	400	371	352	352	376	1,550	6,531
Greece	1,501	513	537	581	633	684	704	663	650	675	695	3,610	11,445
Spain	7,019	2,374	2,494	2,701	2,961	3,213	3,247	3,050	2,860	2,998	3,222	17,090	53,229
France	12,106	4,027	4,039	4,118	4,203	4,254	4,244	4,127	3,913	3,881	3,932	18,201	71,044
Italy	7,535	2,612	2,740	2,974	3,237	3,546	3,758	3,731	2,659	3,761	3,709	19,978	61,240
Cyprus	189	63	70	78	83	83	78	74	78	83	83	291	1,251
Latvia	228	76	81	93	106	111	108	95	88	129	156	534	1,804
Lithuania	335	113	127	145	156	154	144	140	166	214	230	813	2,737
Luxembourg	113	40	41	43	44	45	44	44	44	41	38	160	697
Hungary	1,170	404	432	474	513	547	553	530	542	617	621	2,659	9,061
Malta	52	19	20	22	24	24	23	23	27	30	30	121	415
Netherlands	2,525	903	946	973	863	957	988	1,074	1,042	1,049	984	4,506	16,909
Austria	1,235	442	482	519	535	539	540	543	563	593	566	2,571	9,127
Poland	3,849	1,323	1,447	1,656	1,853	1,935	1,875	1,766	1,977	2,384	2,683	10,526	33,275
Portugal	1,488	525	549	591	639	685	704	720	694	697	709	3,449	11,449
Romania	2,142	758	799	882	983	1,056	1,072	1,043	1,067	1,184	1,550	5,613	18,149
Slovenia	240	80	86	95	104	109	109	101	103	112	129	610	1,878
Slovakia	551	192	209	236	264	279	279	267	293	359	392	1,537	4,859
Finland	855	288	302	315	321	319	313	301	313	340	321	1,460	5,448
Sweden	1,739	570	611	658	660	643	636	589	574	703	650	2,638	10,672
United Kingdom	12,360	40,56	4,418	4,763	4,823	4,690	4,572	4,234	4,370	4,595	4,526	17,099	74,506

Employment rates across EU Member States, 2009

	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	over 65
EU-27	64,6	51,8	73,4	78,4	80,4	81,2	80,0	75,0	60,0	30,4	4,7
Belgium	61,6	43,8	79,0	81,6	82,7	82,1	80,4	72,8	50,2	18,8	1,7
Bulgaria	62,6	46,0	71,0	78,6	82,0	83,3	80,9	76,3	64,5	28,6	3,3
Czech Republic	65,4	45,5	73,4	76,6	84,6	89,7	88,9	85,2	66,3	26,1	4,9
Denmark	75,7	71,8	79,1	86,0	86,6	87,5	85,7	84,1	78,5	36,6	6,0
Germany	70,9	63,2	75,9	81,3	83,5	84,5	83,4	79,6	70,2	38,7	4,1
Estonia	63,5	48,8	70,7	75,2	79,7	79,9	78,4	75,1	69,9	48,5	8,8
Ireland	61,8	55,4	71,7	74,4	72,4	71,4	71,7	69,2	59,2	41,8	8,8
Greece	61,2	39,0	72,0	77,7	78,5	79,2	76,2	68,0	53,6	30,9	4,2
Spain	59,8	44,3	67,4	72,8	72,5	72,5	71,3	65,9	54,9	32,6	2,0
France	64,2	50,6	77,5	81,2	83,8	84,5	84,2	80,5	58,5	17,0	1,4
Italy	57,5	37,1	61,2	72,5	75,4	75,0	74,1	59,9	50,7	20,3	3,1
Cyprus	69,9	61,4	80,0	86,4	85,8	85,0	81,2	77,3	66,5	43,5	12,3
Latvia	60,9	46,2	69,4	75,3	78,3	76,8	75,7	73,1	67,2	36,1	8,2
Lithuania	60,1	39,3	75,2	77,2	76,8	79,0	77,0	72,4	63,2	37,3	5,3
Luxembourg	65,2	43,4	80,2	58,0	83,7	82,6	78,9	74,9	53,4	19,4	3,6
Hungary	55,4	33,3	67,7	72,1	76,1	77,9	74,8	69,5	48,5	13,2	1,9
Malta	54,9	67,7	79,7	75,4	66,4	68,1	60,9	57,2	45,7	13,0	2,8
Netherlands	77,0	77,6	87,2	88,6	87,6	87,1	85,8	82,2	72,4	37,3	6,5
Austria	71,6	69,2	80,8	84,8	86,3	87,5	85,4	78,1	59,4	21,0	5,4
Poland	59,3	46,1	75,0	80,9	82,8	82,7	78,3	68,1	42,6	18,2	4,7
Portugal	66,3	51,1	77,6	82,1	82,6	81,5	79,7	73,8	58,6	39,6	16,9
Romania	58,6	36,6	67,4	77,0	78,3	78,5	74,9	65,9	51,2	31,2	13,7
Slovenia	67,5	51,1	77,6	88,6	88,9	88,6	88,2	77,1	47,6	18,6	7,6
Slovakia	60,2	40,4	70,1	76,3	81,2	82,4	82,6	76,1	56,3	16,5	1,5
Finland	68,7	58,6	75,4	81,6	84,7	85,8	84,8	81,9	71,4	39,3	3,8
Sweden	72,2	57,6	77,3	84,8	86,3	87,8	85,3	84,3	80,3	60,5	12,4
United Kingdom	69,9	64,0	77,7	78,9	80,5	81,8	82,2	79,2	70,6	44,9	7,7

Note: Estonian employment rate for the 15-19 age group not available. The EU-27 average has been used as estimation.

Old-age dependency ratio, 2010-2030-2050 ('000)

	2010			2030			2050		
	15-64	over 65	Old-age DR	15-64	over 65	Old-age DR	15-64	over 65	Old-age DR
EU-27	334,987	86,777	25,9	321,944	122,465	38,0	294,442	148,448	50,4
Belgium	7,116	1,857	26,1	7,147	2,686	37,6	7,144	3,134	43,9
Bulgaria	5,225	1,321	25,3	4,332	1,572	36,3	3,341	1,852	55,4
Czech Republic	7,328	1,600	21,8	6,695	2,391	35,7	5,584	3,060	54,8
Denmark	3,612	902	25,0	3,502	1,325	37,8	3,493	1,443	41,3
Germany	54,204	16,897	31,2	47,873	22,129	46,2	41,857	23,319	56,4
Estonia	906	227	25,0	801	276	34,4	686	324	47,2
Ireland	3,137	523	16,7	3,826	942	24,6	3,838	1,550	40,4
Greece	7,554	2,132	28,2	7,273	2,798	38,5	6,335	3,610	57,0
Spain	31,877	7,788	24,4	33,964	11,655	34,3	29,120	17,090	58,7
France	40,584	10,474	25,8	40,415	15,770	39,0	40,737	18,201	44,7
Italy	39,397	12,208	31,0	38,118	16,180	42,4	33,727	19,978	59,2
Cyprus	577	104	18,0	701	192	27,4	772	291	37,7
Latvia	1,550	390	25,2	1,304	451	34,6	1,042	534	51,2
Lithuania	2,310	535	23,2	1,966	683	34,7	1,589	813	51,1
Luxembourg	335	71	21,1	386	119	30,8	424	160	37,8
Hungary	6,873	1,665	24,2	6,221	2,119	34,1	5,232	2,659	50,8
Malta	288	61	21,2	267	104	39,1	242	121	49,8
Netherlands	11,085	2,529	22,8	10,366	4,147	40,0	9,879	4,506	45,6
Austria	5,674	1,476	26,0	5,591	2,129	38,1	5,322	2,571	48,3
Poland	27,220	5,166	19,0	23,624	8,500	36,0	18,900	10,526	55,7
Portugal	7,714	1,907	26,6	7,185	2,632	36,3	6,512	3,449	53,0
Romania	14,927	3,186	21,3	13,392	4,060	30,3	10,394	5,613	54,0
Slovenia	1,414	338	23,9	1,253	512	40,8	1,028	610	59,4
Slovakia	3,922	665	16,9	3,512	1,134	32,3	2,771	1,537	55,5
Finland	3,542	911	25,7	3,239	1,421	43,9	3,133	1,460	46,6
Sweden	6,078	1,690	27,8	6,180	2,313	37,4	6,294	2,638	41,9
United Kingdom	41,076	10,155	24,7	42,811	14,225	33,2	45,047	17,099	38,0

Labour Market Adjusted Dependency Ratio (LMADR), 2010-2030-2050 ('000)

	2010			2030			2050			LMADR		
	employed	unempl. + inact.	total (15+)	LMADR	employed	unempl. + inact.	total (15+)	LMADR	employed		unempl. + inact.	total (15+)
EU-27	220,501	201,264	421,765	47,7	210,099	234,309	444,409	52,7	193,565	249,325	442,890	56,3
Belgium	4,407	4,566	8,973	50,9	4,364	5,469	9,832	55,6	4,391	5,896	10,278	57,4
Bulgaria	3,346	3,222	6,546	48,9	2,794	3,110	5,904	52,7	2,134	30,59	5,192	58,9
Czech Republic	4,870	40,57	8,928	45,4	4,581	4,505	9,086	49,6	3,795	4,850	8,645	56,1
Denmark	2,778	1,736	4,515	38,5	2,707	2,120	4,827	43,9	2,728	2,207	4,935	44,7
Germany	39,201	31,900	71,10	44,9	34,034	35,969	70,002	51,4	29,931	35,545	65,476	54,3
Estonia	608	524	1,132	46,3	547	529	1,076	49,2	474	536	1,010	53,0
Ireland	1,983	1,678	3,660	45,8	2,393	2,376	4,769	49,8	2,463	2,925	5,388	54,3
Greece	4,714	4,972	9,686	51,3	4,384	5,687	10,071	56,5	3,921	60,24	9,944	60,6
Spain	19,208	20,458	39,666	51,6	19,483	26,137	45,620	57,3	17,073	29,137	46,210	63,1
France	26,135	24,924	51,058	48,8	25,578	30,608	56,186	54,5	26,080	32,858	58,938	55,8
Italy	23,003	28,602	51,606	55,4	21,315	32,982	54,298	60,7	19,423	34,282	53,705	63,8
Cyprus	408	272	681	40,0	511	383	894	42,8	566	497	1,063	46,7
Latvia	982	958	1,940	49,4	846	909	1,755	51,8	678	897	1,576	57,0
Lithuania	1,423	1,423	2,845	50,0	1,256	1,393	2,649	52,6	1,006	1,395	2,402	58,1
Luxembourg	218	187	405	46,2	245	259	504	51,4	271	313	584	53,6
Hungary	3,828	4,709	8,538	55,2	3,495	4,845	8,339	58,1	2,894	4,997	7,891	63,3
Malta	161	188	349	53,8	153	218	371	58,7	135	227	363	62,7
Netherlands	8,691	4,923	13,614	36,2	8,171	6,342	14,513	43,7	7,860	6,525	14,385	45,4
Austria	4,136	3,014	7,150	42,2	3,971	3,750	7,720	48,6	3,830	4,062	7,892	51,5
Poland	16,373	16,013	32,387	49,4	14,724	17,400	32,123	54,2	11,363	18,063	29,426	61,4
Portugal	5,083	3,998	9,081	44,0	5,106	4,710	9,816	48,0	4,814	5,146	9,960	51,7
Romania	9,208	8,904	18,112	49,2	8,393	9,059	17,452	51,9	6,724	9,282	16,007	58,0
Slovenia	979	774	1,753	44,1	848	917	1,764	51,9	707	931	1,638	56,8
Slovakia	2,375	2,212	4,586	48,2	2,182	2,464	4,646	53,0	1,648	2,661	4,308	61,8
Finland	2,458	1,995	4,453	44,8	2,285	2,376	4,660	51,0	2,212	2,382	4,594	51,8
Sweden	4,601	3,168	7,768	40,8	4,797	3,696	8,493	43,5	4,921	4,011	8,932	44,9
United Kingdom	29,419	21,812	51,232	42,6	30,924	26,113	57,036	45,8	32,649	29,497	62,146	47,5

Endnotes

1. The concept of the labour market adjusted dependency ratio was first explored in an EPC Policy Brief by Fabian Zuleeg 'How to grow old without going bust: the need for efficient EU labour markets', published in November 2007.
2. If not otherwise stated, all data (both demographic data and labour market data) are taken from Eurostat. The data used is the latest available as of beginning of 2011. Demographic forecast are based on Eurostat EUROPOP2008 - Convergence scenario, Population projections 2008-2060.
3. European Commission, '2009 Ageing Report: Economic and budgetary projections for the EU-27 Member States (2008-2060)', *European Economy* 2/2009.
4. Replacement level fertility refers to the level of fertility (whereas fertility is the number of all children born alive during the reproductive period of the woman) at which a population exactly replaces itself from one generation to the next. In countries with very low infant and child mortality rates, it is slightly superior to 2 children per woman.
5. There is no specific value that could be considered as a threshold for sustainability. However, if seen as a proxy of the ratio of the number of people producing (and thus being taxed) and those receiving support, falling below a ratio of three people of working age for every person of pension age (the current ratio in Italy or Germany) could be seen as a signal that the system will not be sustainable in the long run.
6. People aged 0-14, therefore under the working age, are excluded from the analysis.
7. The reference date used for labour market date is the latest available, i.e. 2009. Arguably, one could also use the 'natural' rate of unemployment (i.e. the rate at which the economy is at its long run equilibrium) or an average rate, compiled from a number of years of labour market data, to attempt to correct for cyclical effects. However, this has various drawbacks: the natural rate of unemployment is a theoretical concept, with the actual values not necessarily ever observed in the actual data. In addition, there is no 'natural' employment rate concept. Averages are also problematic, since it is difficult to determine the timespan across which values should be averaged. In addition, in the case of a structural break in the data, which arguably occurred with the economic crisis, there is little predictive value in such averages. While the data used could be seen as a pessimistic choice, given the economic crisis, it is also important to recognise that labour market outcomes are sticky especially where economic inactivity is concerned (for example, people exiting the labour market through early retirement do not tend to come back into work at a later date). Furthermore, forecasting the evolution of the labour market, especially for such a long timespan, is not a feasible exercise, due to the high uncertainty associated with the variables involved and their correlation. It is worth stressing that the purpose here is illustrative, not predictive. The LMADR is designed to demonstrate that labour market participation is crucial in dealing with old age dependency, making the exact reference year chosen less important.
8. This is based on the Eurostat EUROPOP2008 - Convergence scenario, No migration.
9. Some of the policy recommendations presented in this section have been also discussed in Fabian Zuleeg 'How to grow old without going bust: the need for efficient EU labour markets', November 2007.
10. European Commission (2011), Annual Growth Survey, Annex 3 - Draft Joint Employment Report, COM (2011) 11 final.