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The Impact of Labour Markets on Economic Dependency Ratios and on Pension Adequacy and Sustainability



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The Impact of Labour Markets on Economic Dependency Ratios and on Pension Adequacy and Sustainability

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TABLE OF CONTENTS

<u>Executive Summary</u>	4
<u>1. Introduction</u>	6
<u>2. Existing shortcomings regarding employment integration of people of working age</u>	8
<u>2.1. Employment rates</u>	8
<u>2.2. (Extended) unemployment</u>	11
<u>2.3. Labour market slack</u>	14
<u>2.4. European labour markets in the covid crisis</u>	15
<u>3. Policy action needed in order to improve employment integration</u>	20
<u>3.1. Labour market policies</u>	21
<u>4. Dependency Ratios - the labour market as a key determinant</u>	24
<u>4.1. Population ageing</u>	24
<u>4.2. Re-interpretation of demographic data</u>	26
<u>4.3. Economic dependency - Standard versus High Employment Scenario</u>	27
<u>4.4. Economic dependency ratio calculations - EU 27</u>	29
<u>4.5. Economic dependency ratio calculations – Country cases</u>	31
<u>5. Impact of labour markets on pension adequacy and fiscal sustainability</u>	33
<u>5.1. Pension benefit level – key role of preceding employment career</u>	34
<u>5.2. Financing of pensions – key role of contribution from labour income</u>	37
<u>5.3. Financial sustainability of pension systems – key role of good employment integration</u>	38
<u>References</u>	41
<u>Annex 1:</u>	43
<u>‘Economic dependency ratio’ calculation ’ – Country cases</u>	43
<u>Annex 2</u>	50
<u>‘Economic dependency ratio’ calculation – EU 2030+ Scenario</u>	50
<u>Annex 3</u>	52
<u>Additional figures on labour market shortcomings</u>	52

- Quantity and quality (level of earnings) of employment in almost all pension systems largely determine both the level of individual pension entitlements and the financing of pensions. Thus, improving employment integration throughout all ages would have positive impacts both on pension adequacy and the sustainability of pension systems.
- For many years, against the background of population ageing, the public debate on pensions has almost exclusively focused on financial sustainability issues.
- In this context, future shifts of the 'old-age to working age ratio' are frequently falsely equated with shifts of the relation between pensioners and contributors and referred to as (presumed) evidence of unsustainability.
- Consequently, most strategies on how to tackle the ageing challenge focus on substantially raising the age limit between working and retirement age as the "key answer" (see for instance EU Commission 2021, Green Paper on Ageing).
- However, only to look at age for assessing the current state and the future development of the relation between benefit-recipients and contributors falls short of basic economic realities. For this purpose, the 'economic dependency ratio' has to be considered, defined as 'unemployed plus pensioners relative to people in employment' as suggested in the analytical part of EU Commission's White Paper on Pensions.
- Empirical data on the economic status of the current working age population indicate a huge potential for better employment integration throughout working age, with many millions of jobless or underemployed persons not recorded in official unemployment statistics.
- In 2019, according to Eurostat's 'labour market slack' indicator, unmet labour supply within the age group 20-64 amounted to 27 m people in EU 27. Meanwhile, as a consequence of the pandemic, despite massive policy intervention unemployment has risen and a large number of workers have been forced into some form of (partial) inactivity.
- Against this background, achieving substantially higher employment rates in quality jobs, as aspired by the EU Commission's ambitious 2030 employment rate target of 78%, requires comprehensive policy action both at EU and national level, ranging from economic governance reform to well-tailored reforms aimed at specific shortcomings such as employment barriers for women.
- Contrasting a 'Standard Scenario' with a 'High Employment Scenario' demonstrates the enormous potential of a labour market strategy of 'upwards convergence':
 - EU Commission's Ageing Report's 'no-policy-change' based projections on the future development of employment and unemployment ('Standard Scenario') would result in an increase of 29% of the 'economic dependency ratio' over the period 2019 to 2070
 - Realizing a 'High Employment Scenario' based on the assumption that 2019's national best practice levels of employment (Sweden) and unemployment rates (Czech Republic) within the age group 20 to 64 would be achieved in EU 27 by 2070, would lead to only an 8% increase, despite of an expected 72% increase of the 'old-age to working-age' ratio over the same period of time.

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- Thus, achieving in EU 27 a level of employment integration that already exists in the best performing EU Member States would reduce the expected future increase of the 'economic dependency ratio' over the period 2019 to 2070 to less than one third.
- Country case calculations based on the same 'High Employment Scenario' assumptions also show staggering outcomes. Despite remarkable differences, related to large variations both in the current state and in future 'Standard Scenario' projections on demography and labour market developments, in all countries under scrutiny realizing the 'upwards convergence' scenario would substantially contain – and in some cases even reverse – the expected increase of the 'economic dependency ratio'.
- In addition, an alternative more short-term oriented 'high employment' scenario has been calculated, mainly based on the assumption that EU Commission's 2030 employment rate target will be achieved and some further progress will be made to reach 80% employment rate by 2040 ('EU 2030+ Scenario'): Realizing this scenario would neutralize any increase of the 'economic dependency ratio' over that period of time.
- As pension systems across Europe already underwent comprehensive reforms (some of these reforms even went too far and should be reconsidered), it is time now to focus on inclusive labour markets, on a strategy of 'upwards convergence'.
- „The best way of securing adequate and sustainable pensions is to improve labour market integration of people of working age, in quality jobs“ (ETUC, Action Programme 2019-2023)

1. INTRODUCTION

“Workers and the self-employed in retirement have the right to a pension commensurate to their contributions and ensuring an adequate income. Women and men shall have equal opportunities to acquire pension rights. Everyone in old age has the right to resources that ensure living in dignity.”
(European Pillar of Social Rights, Principle 15)

For many years, instead of choosing a needs-based approach, against the background of population ageing public debate on pensions has focused on fiscal sustainability issues, both at EU and at national level. In this context, future shifts of the ‘old-age to working-age’ ratio, communicated as ‘old-age-dependency ratio’, are frequently referred to as (presumed) evidence of unsustainability - based on false equation of the numerical relationship between age groups with the ‘benefit recipients to contributors’ ratio. As a consequence, many strategies on how to tackle the ageing challenge almost exclusively focus on increasing the age limit between working age and retirement age, translated into an alleged need to substantially raise the legal retirement age.

In this spirit, the EU Commission’s recently published Green Paper on Ageing states: “... the EU old-age dependency ratio in 2040 would only remain at the same level as in 2020 if working life were extended to the age of 70.”¹

However, the ‘old-age to working-age’ ratio alone does not say much about the relation between contributors and benefit recipients, as clearly shown, for instance, in the EU Commission’s 2018 Ageing Report: While, in 2016 in EU 27 there were 3.3 persons aged 20-64 for one person aged 65+, there were only 1.6 contributors for one pensioner.² The enormous difference mainly results from labour market shortcomings for those of working age, reflected in low employment rates and high numbers of unemployed and early retirees.

Thus, for assessing the current state and future developments of the ‘benefit recipients to contributors’ ratio, the economic status of people across all ages has to be considered, as suggested in the EU Commissions White Paper on Pensions which defines the ‘economic dependency ratio’ as ‘unemployed plus pensioners relative to people in employment’.³

With regard to future developments, the crucial question is the extent to which the expected increase of the ‘old-age to working-age’ ratio will translate into an increase of the ‘economic dependency ratio’. As shown in this study, this will largely depend on future labour market developments. By implementing a strategy of ‘upwards convergence’ throughout working age, as aspired to in the EU Commission’s recently published European Pillar of Social Rights Action Plan⁴ with its ambitious 78% employment rate target for 2030 (EU 27 / age group 20-64), the expected increase of the ‘economic dependency ratio’ could be substantially reduced, thus positively impacting fiscal sustainability. In some EU Member States, implementing a ‘high employment strategy’ could even lead to a decrease of this ratio, despite considerable population ageing.

Furthermore, improving employment integration throughout working life would lead to substantial progress with regard to the old-age protection objective set-out in the European Pillar of Social Rights especially among groups currently most affected by pension adequacy gaps. ‘More and better jobs’ for women, people with low education level, immigrants etc. would substantially benefit their old-age protection.

Thus, as stated in ETUC’s Action Programme 2019-2023, “the best way of securing adequate and sustainable pensions is to improve labour market integration of people of working age, in quality jobs.”⁵

In our study, we start with reflections on the age group 20 to 64, conventionally defined as working age. Based on Eurostat data we point to substantial labour market shortcomings reflected in low employment

¹ EU Commission (2021a)

² EU Commission (2018). The 2018 Ageing Report, tables III.1.61, III.1.86

³ EU Commission (2012) Chapter 2.3.

⁴ EU Commission (2021d)

⁵ ETUC (2019), item 375

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and high unemployment rates. The situation of women and low qualified workers receives specific attention. Furthermore, we address the risk of underestimating existing needs for better labour market participation because of very wide definition of employment and very narrow definition of unemployment. Referring to Eurostat's 'labour market slack'⁶ we focus on unmet needs for employment. While 2019 is our main year of reference, we also provide an overview of 2020's corona impact on labour markets.

In section 2 we give a rough overview of policy actions needed to reduce labour market slack and to increase employment rates in quality jobs. For mobilizing full employment and productivity potential, a comprehensive strategy is needed, including both economic governance reform and policy intervention targeted at more specific shortcomings, such as existing employment barriers for women or poor job opportunities for young people.

In section 3, after presenting a few examples of the widespread inappropriate interpretation of demographic data (and related policy recommendations), we present scenario calculations of the development of the 'economic dependency ratio' over the period 2019 - 2070, both for EU 27 and some selected Member States. 'Standard-Scenario' calculations, based on the EU Commission's Ageing Report's 'no-policy-change' assumptions are contrasted with a 'High Employment Scenario', based on the assumption that by 2070 current best practice levels among EU Member States with regard to employment and unemployment rates will be achieved. In addition, for EU 27 we calculated a more short-term and more ambitious scenario, based on assumed achievement of the Commission's 2030 employment target and some further employment progress between 2030 and 2040.

Finally, in section 4, based on country cases, we provide information on how length and quality (earnings level) of employment impact both pension benefit levels and the financing of pensions. We conclude with some reflections on key aspects of financial sustainability.

⁶ Eurostat (2020), Labour market slack – annual statistics on unmet needs for employment. Statistics explained.

2. EXISTING SHORTCOMINGS REGARDING EMPLOYMENT INTEGRATION OF PEOPLE OF WORKING AGE

In our analysis, we primarily focus on the working age population, conventionally defined as the age group 20-64. We show that there is an enormous potential for better employment integration throughout working age, only partly reflected in the unemployment rate, the best-known indicator for poor labour market integration.

First, we give an overview of the labour market situation across EU 27, highlighting some groups with particularly poor employment integration. Specific attention is paid to the impact of ILO's/Eurostat's very wide definition of employment and very narrow definition of unemployment.

Then, we refer to Eurostat's 'labour market slack' indicator. This indicator, beyond those officially recorded as being unemployed, also includes other groups of jobless people meeting specific criteria and employed part-timers who want to work more hours.

In our overall labour market analysis we primarily refer to 2019 data and, thus, to the situation before the outbreak of the corona crisis. The pandemic's impact on the labour markets is analysed in more detail at the end of this section.

Some further information on people in precarious jobs and, thus, also in need for 'better employment integration' and likely to acquire insufficient pension entitlements and to be contributing little or even nothing to pension finance, is given in annex 3 (involuntary part-time, low wage earners, people working in temporary contracts, precarious self-employment)

EMPLOYMENT RATES

- In EU 27, even before the outbreak of the corona-crisis, only 73% of those of working age were in employment - with wide variations between countries, males/females, age groups and other categories.
- Among those recorded as 'employed' there is a huge share in marginal part-time employment, short-term contracts and many other precarious forms of employment. Eurostat data on the overall employment rate do not shed light on such shortcomings.

In 2019, overall employment rates in EU Member States in the age group 20-64 varied between 82% in Sweden and only 61% in Greece. In EU 27, the rate was 73%.

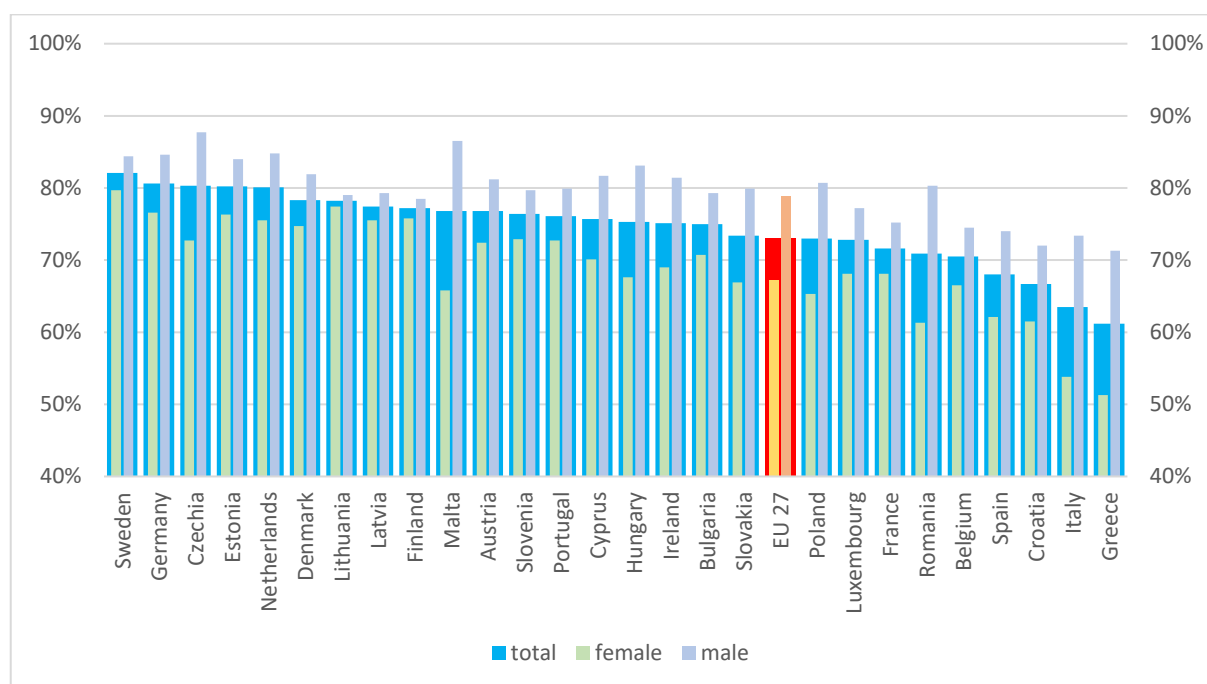
Male employment rates varied between 88 % in Czech Republic and 71 % in Greece, while female employment rates had a wider span, ranging from 80 % in Sweden and 78% in Lithuania to only 51 % in Greece and 54% in Italy.

The gender employment gap⁷ was lowest in Lithuania (1.6 p.p.) and Finland (2.8 p.p.) and highest in Malta (20 p.p.) and Italy (19.5 p.p.). In EU 27, across all age groups, women have lower employment rates than men.

⁷ Employment rate difference between women and men

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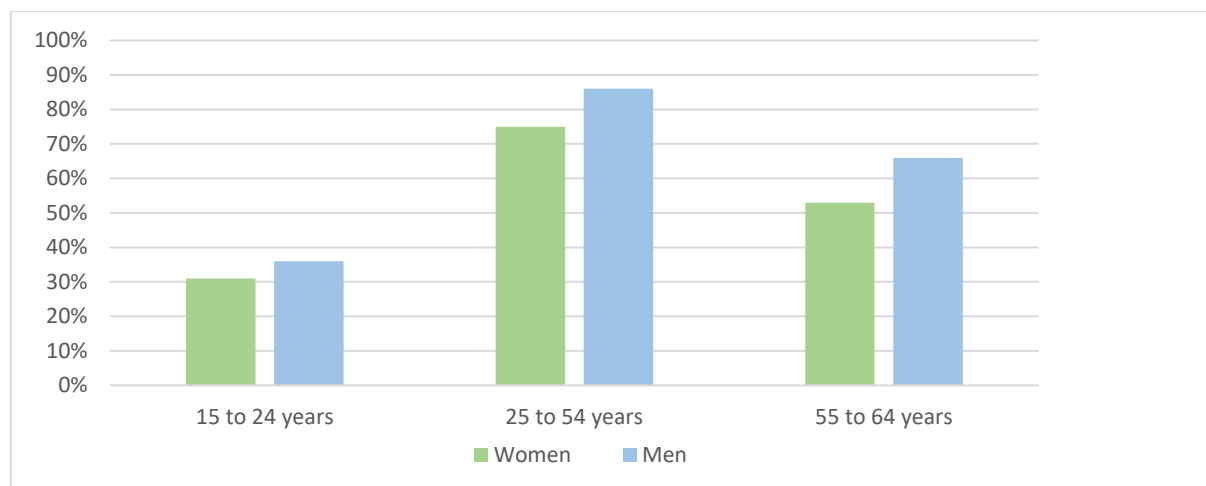
Figure 1: Employment rates – total, female, male / age group 20-64 (2019)



Source: Eurostat, Employment rates by sex, age and citizenship (%) [LFSA_ERGAN]

While in 2019 86% of males of prime working age (25 to 54) were in employment, among women of the same age group this rate was only 75 percent, yielding a gender employment-rate gap of 11 p.p. Among older workers (age group 55-64), employment integration is significantly lower overall and the employment gap somewhat higher, with 66% male and 53% female employment rate. Among those entering the labour market (age group 15-24) the employment rates, naturally, are lower, the employment gap in this age group is less pronounced (5 p.p.).

Figure 2: EU 27 - Employment rates by sex and age groups (2019)

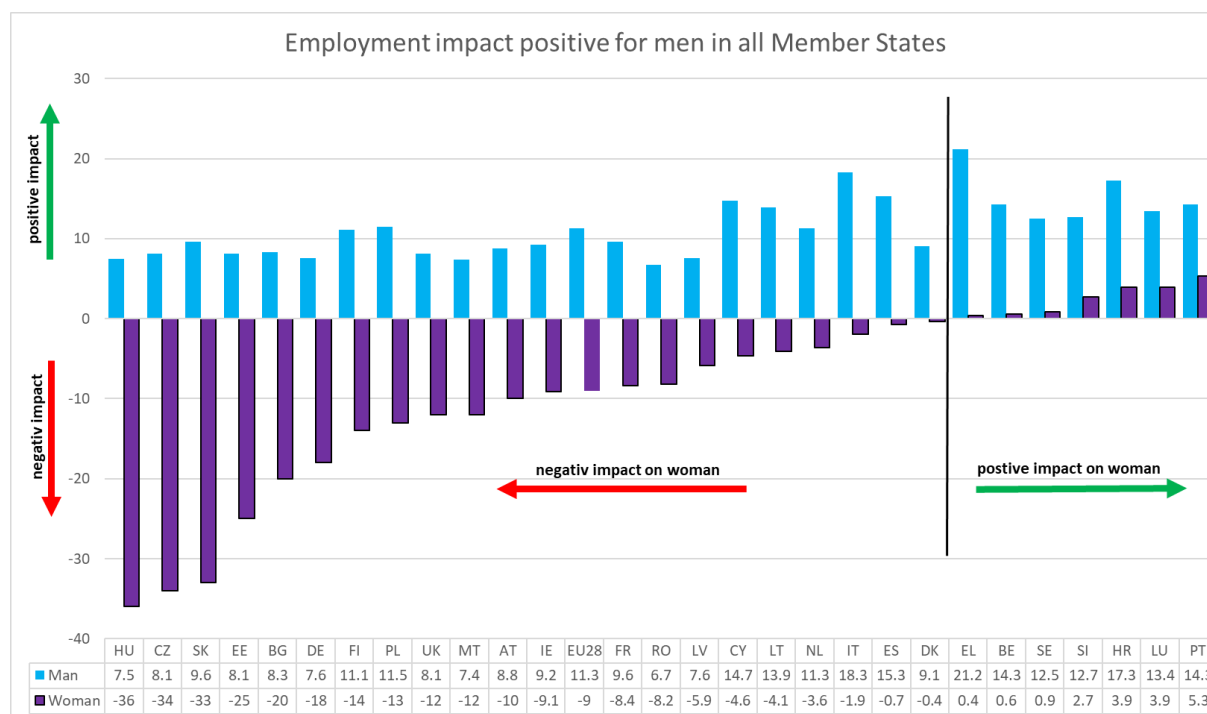


Source: Eurostat, Employment rates by sex, age and citizenship (%) [LFSA_ERGAN]

A main reason for different employment participation of men and women are the diverging patterns of child-care. In all countries, having a child below age 6 coincides with higher employment rates for males while, in most countries, female employment rates are negatively affected by caring responsibilities. In some EU Member States, there is a huge negative impact on mothers. In Hungary, having a child below age 6 decreases the employment rate by 36 p.p., in Czechia by 34 p.p. and in Slovakia by 33 p.p. On the other side, there are a few countries, where having a child is associated with higher employment participation among women, too.

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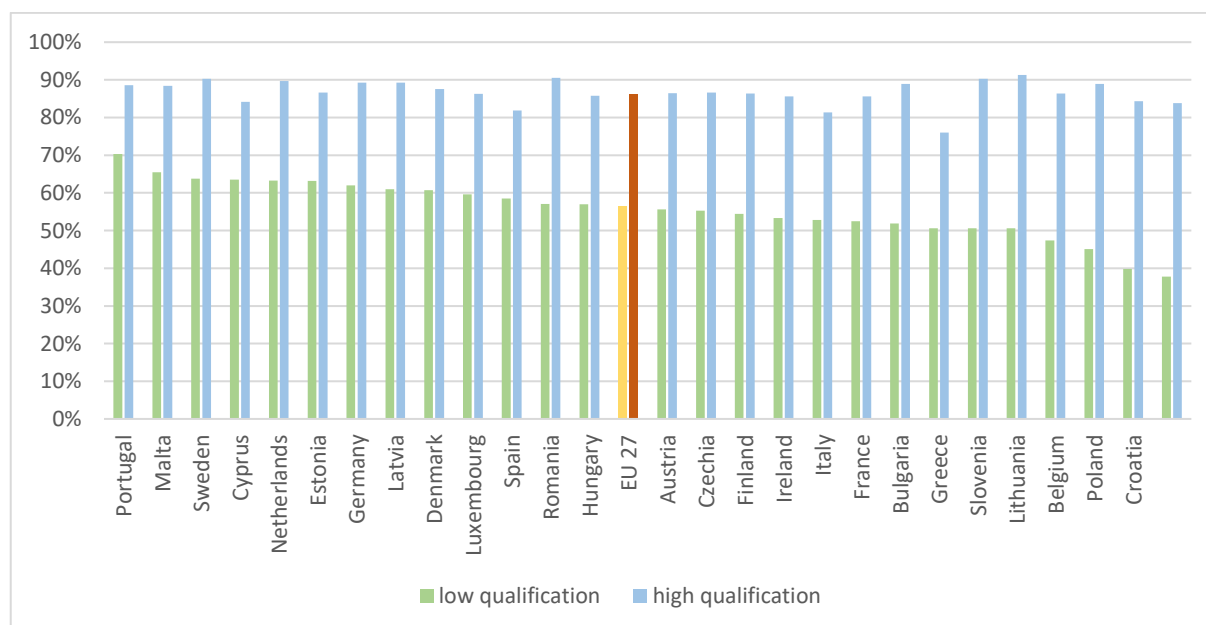
Figure 3: Employment impacts of having a child below age 6 (2019)



Source: European Commission (2020a), p 59

Wide discrepancies regarding employment rates also exist along educational lines, as shown in figure 4 for those aged 25 to 64, an age group that mostly has completed education. The group of people with finished tertiary education records an employment rate of 86% while among those with no more than lower secondary education the rate is only 56%.

Figure 4: Employment rates by level of educational attainment / age group 25-64 (2019)



Source: Eurostat, Employment rates by sex, age and educational attainment level (%) [LFSA_ERGAED].

Precarious employment / definition of employment

Eurostat's overall employment rate comprises a wide range of very different types of employment, including a huge share of marginal and precarious forms. To get a full picture of existing employment integration shortcomings among those recorded as employed would require in-depth analysis of

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employment data (job quality, wage level, working time, voluntary/involuntary part-time, type of employment contract, etc.), which is beyond the scope of the study.⁸

However, it is necessary to highlight one specific aspect of ‘job quality’, related to the definition of employment. According to ILO’s/Eurostat’s definition, it is sufficient that a person has worked for pay or profit for at least one hour during a given week to be recorded as employed.⁹

Equating all part-timers, including those in only marginal-part time, with those working full-time creates significant problems when it comes to analyze ‘economic dependency ratios’ and the impact of employment integration on pension adequacy and sustainability. In order to be assigned as ‘contributor’, the level of earnings should be sufficient to enable decent living through own income, to substantially contribute to the financing of pensions and to acquire significant pension entitlements. Mini-jobbers, obviously, do not fulfill these criteria.

Unfortunately, available Eurostat data showing that 2.7% of the EU 27 workforce work less than 10 hours a week (2019)¹⁰, do not allow separation in an appropriate manner because the working time limit is at a too low level.

Germany can serve as an example how relevant this might be in some countries: As many as half a million people aged between 60 and the statutory retirement age are working in uninsured marginal part-time employment¹¹ with a maximum wage of 450 Euro a month.¹² This is about 16% of the employed in this age group. In total, about 4.2 million people in Germany have only a marginal paid job - with 2.6 million being female and 1.6 male (March 2021). In 2019, 15% of all employed women and 9% of all employed men belonged to this category¹³ while Eurostat’s overall rate for Germany on ‘employed persons working less than 10 hours’ only notices a 4.4% rate.¹⁴ Thus, at least for Germany, to set the working time limit that low substantially underestimates the phenomenon of marginal part-time employment.

(EXTENDED) UNEMPLOYMENT

- In 2019, 6% of the EU workforce were recorded as being unemployed.
- Official data tend to underestimate unemployment. Getting a more appropriate picture of unemployment requires to take ‘extended unemployment’ into consideration.

Definition of unemployment

The unemployment rate is the number of unemployed as a percentage of the active population of an age group (Eurostat, 2021a). ILO’s/Eurostat’s definition, based on survey data, considers a person as being unemployed if he/she meets the following criteria:

- no paid work (of at least one hour) during the reference week
- active search of employment during the last four weeks
- available to start work within the next two weeks (or has already found a job to start within the next three months)

In 2019, according to Eurostat’s unemployment statistics 6% of the EU workforce fulfilled these conditions and, thus, were recorded as unemployed, with large variations between countries. Greece

⁸ Some information is provided in annex 3

⁹ Furthermore, persons having a job but absent because of holidays, sick leave, maternity leave, etc. are also classified as being in employment (see Eurostat, 2021a)

¹⁰ EU Commission (2020b), Access to social protection for workers and the self-employed. Monitoring framework. Version 0, table 5.16

¹¹ Named „ausschließlich geringfügig entlohnte Beschäftigung“ (only marginally paid employment) meaning persons having no second job besides the marginal paid.

¹² On the basis of the German statutory minimum wage, this corresponds to a maximum of 11 working hours per week.

¹³ Bundesagentur für Arbeit – Statistikportal statistik.arbeitsagentur.de

¹⁴ See FN 5

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(17%) and Spain (14%) had the highest rates, the Czech Republic (2 %) the lowest. In total, the number of people recorded as unemployed was 13.4 m.

Highly varying unemployment incidence

Unemployment affects all groups of people, though to very different degrees. To give a few examples of highly affected groups:

Young people: Youth unemployment is best reflected in the NEET-rate, showing those neither in employment, education nor in training. In 2019, 16.4 % of EU 27's 20 to 34 year-olds were in this group. The NEET-rates ranged hugely, from 7.3% in Sweden to 27.8% in Italy.¹⁵

People with lower education levels: EU wide, 2019's unemployment rate of persons having lower secondary education or less was 12.5% compared to 4.0% of people with a tertiary degree. Hence, a person with low educational attainment is more than 3 times as likely to be unemployed compared to a highly educated person (Eurostat, 2021c).

Migrants: In 2019, the unemployment rate of those born outside the EU-27 was 12.3% compared to 6.0% for native born.¹⁶

Unemployment (extended)

In the ILO's/Eurostat's definition, neither unemployed people allowed by national legislation to work a few hours and doing so nor jobless people who do not fulfil the strict searching and availability criteria are recorded as unemployed in statistics.

Jobless persons 'available for work but not actively seeking' and those 'seeking a job but not immediately available for work' are sub-groups among people classified as being inactive. The first one of the two groups is referred to by Eurostat as the 'discouraged' because, generally, persons 'available for work but not actively seeking' (any more) do not see any possibility to find a job. Most of the 'discouraged' are long-term unemployed. On the other hand, the group 'seeking but not immediately available for work' includes for instance persons in training or qualification measures or with other obligations, such as domestic tasks or childcare duties, they cannot free themselves from in the very short run.

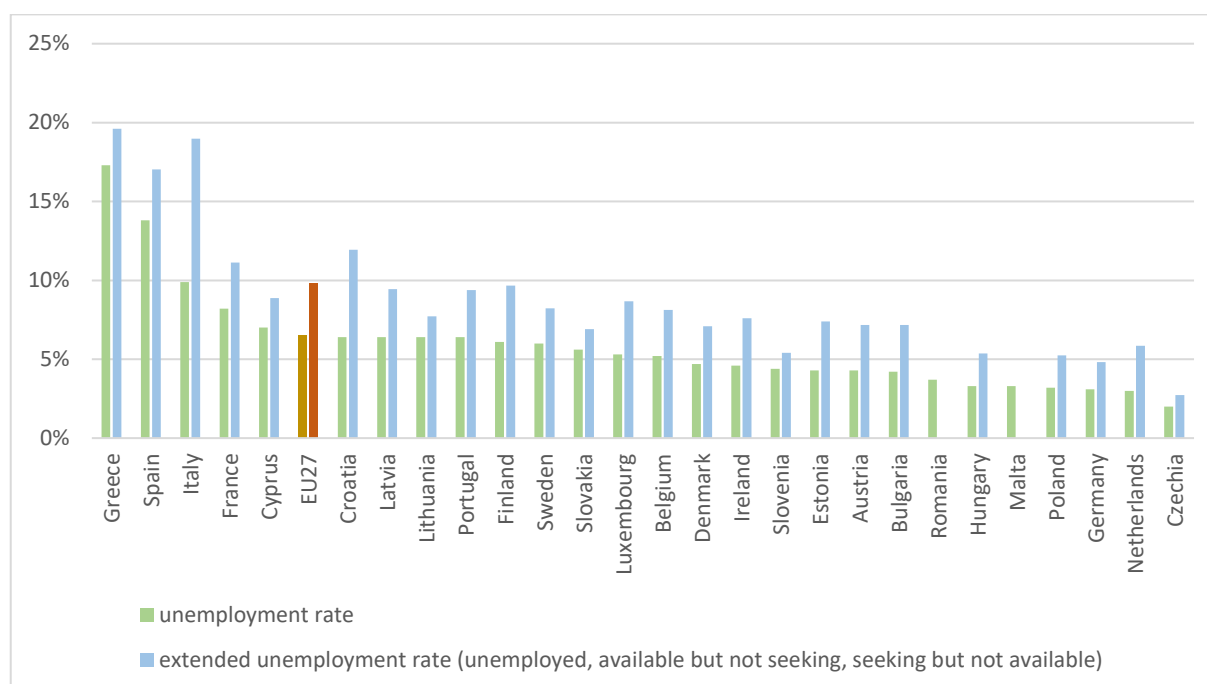
Thus, only to look at official unemployment rates does not give a full picture of existing joblessness. In order to get a more complete picture there is need to consider 'extended unemployment', including both the 'discouraged' and those 'not immediately available'.

¹⁵

https://ec.europa.eu/eurostat/statistics-explained/index.php/Statistics_on_young_people_neither_in_employment_nor_in_education_or_training

¹⁶ Eurostat. (2021). *Unemployment rates by sex, age and country of birth (%) [lfsa_urgacob]*. [_____](#)

Figure 5: Unemployment rate and extended unemployment rate / age group 20-64 (2019)



Source: Eurostat, Supplementary indicators to unemployment - annual data [LFSI_SUP_A], Employment and activity by sex and age [LFSI_EMP_A] & Unemployment by sex and age [UNE_RT_A]; Romania and Malta are not depicted due to unreliable data for those seeking work but not available. The denominator for the calculations of the extended unemployment rate includes next to the active population those who are available but not seeking and those who are seeking but are not available (extended labour force, see labour market slack).

Figure 5 shows that in almost all EU Member States ‘extended unemployment’ substantially exceeds official unemployment rates. In terms of percentage points, the most pronounced difference exists in Italy and Croatia.

Labour supply

We can conclude from the above that only considering official employment and unemployment statistics massively underestimates labour supply that could potentially contribute to financing social insurance including pensions.

Underestimation of unused potential labour supply reaches from persons already integrated but wanting to work more over those ready for employment but not recorded as unemployed because of very narrow definition of this term, up to those hindered to enter employment for structural reasons (lack of adequate child-care facilities, lack of long-term care assistance, etc.).

Examples from Germany illustrate underestimation of labour supply in official labour market statistics related to definitions:

- Unemployed persons aged over 58 who have not been offered a job subject to social security contributions by the employment office for 12 months are no longer counted as unemployed. For that reason, out of 457.000 unemployed persons aged between 60 and statutory pension age (65 years and 9 month) almost 155.000 persons are not recorded as unemployed.¹⁷ De facto, as a consequence of a lack of support by the employment office, the overwhelming majority of these people may declare themselves as discouraged and not seeking.
- Many people receiving ALG II (social minimum income for persons capable of working) are not counted as unemployed because they work in marginally paid employment for few hours a week and, therefore, do not fulfil ILO’s/Eurostat’s unemployment criteria. The rules in ALG II make micro-employment particularly attractive.

¹⁷ Data from February 2021, Agentur für Arbeit: statistik.arbeitsagentur.de

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LABOUR MARKET SLACK

- In 2019, beyond 13.4 m. recorded as unemployed, there were 13.6 m. with under- or unemployment characteristics
- Total 'labour market slack' amounted to 12.7% of the extended labour force; this is about the double of the official unemployment rate

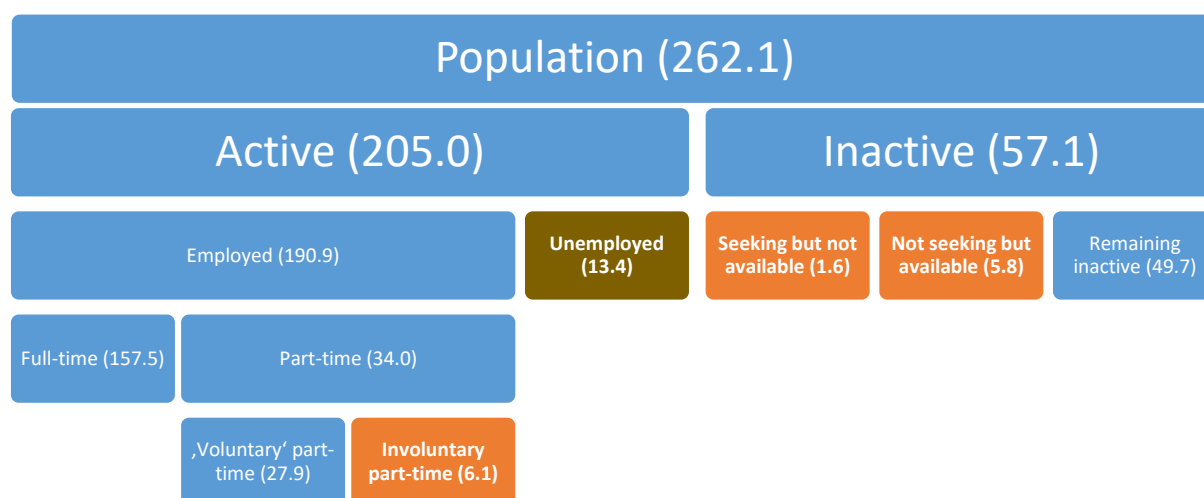
We have already shown that unmet labour supply substantially exceeds estimations based on unemployment data. Eurostat's 'labour market slack' is the most prominent indicator, it aims at showing the shortfall between workers' desired amount of paid work and labour market reality. Labour market slack comprises three indicators "supplementing the unemployment rate":

- Underemployed part-time workers i.e. part-time workers who wish to work more
- Jobless persons available for work but not actively seeking ('discouraged' jobless)
- Jobless persons seeking but not immediately available

The latter two groups are referred to by Eurostat as "potential additional labour force".

The orange boxes in figure 6 give an overview both of the components of the labour market slack and their respective size within the age group 20-64.

Figure 6: EU 27 - Composition of the labour market slack (age group 20 to 64 / 2019) Persons in million in brackets ¹⁸



Source: (Eurostat, 2021e).

In the EU-27, out of 262.1 m. in the age group 20-64, 205 m. were recorded as economically active (employed or unemployed) and 57.1 as inactive. Out of those inactive, 5.8 m. were available to work, but not actively seeking and 1.6 m. seeking, but not immediately available for work, this is 10.2% respectively 2.8% of all those categorized as 'inactive'.

Out of the active population, 190.9 m. were recorded as employed, 13.4 m. as unemployed. 157.5 m. were in full-time employment, 34 m. in part-time. Out of the part-time workers, 6.1 m. declared the wish to work more hours and were available to do so.¹⁹

Adding up involuntary part-time-workers, 'discouraged' job seekers and those seeking work but 'not immediately available' yields the total labour market slack beyond unemployment, i.e. 13.6 m. with under- or unemployment characteristics in addition to 13.4 m. recorded as unemployed.

¹⁸ Note: Both population and employment figures referred to in this section (based on Eurostat's labour force survey data) differ somewhat from the corresponding 2019 figures published in the 'Underlying Assumptions' of EU Commission's Ageing Report 2021 we refer to in chapter 3.

¹⁹ It has to be noted that those who wish to work (or to work more) but hindered by other obligations such as care, are not included in Eurostat's labour slack figures. If this would be the case the labour market slack would even be larger.

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Note: There is good reason to believe that Eurostat data on involuntary part-time work tend to underestimate existing potential for working more hours. A recent study based on other survey data (SOEP - socio-economic panel) disclosed that in Germany about 3 m. part-time workers would like to extend their working hours by on average 11 hours a week, which corresponds to about 930.000 full-time equivalents.²⁰

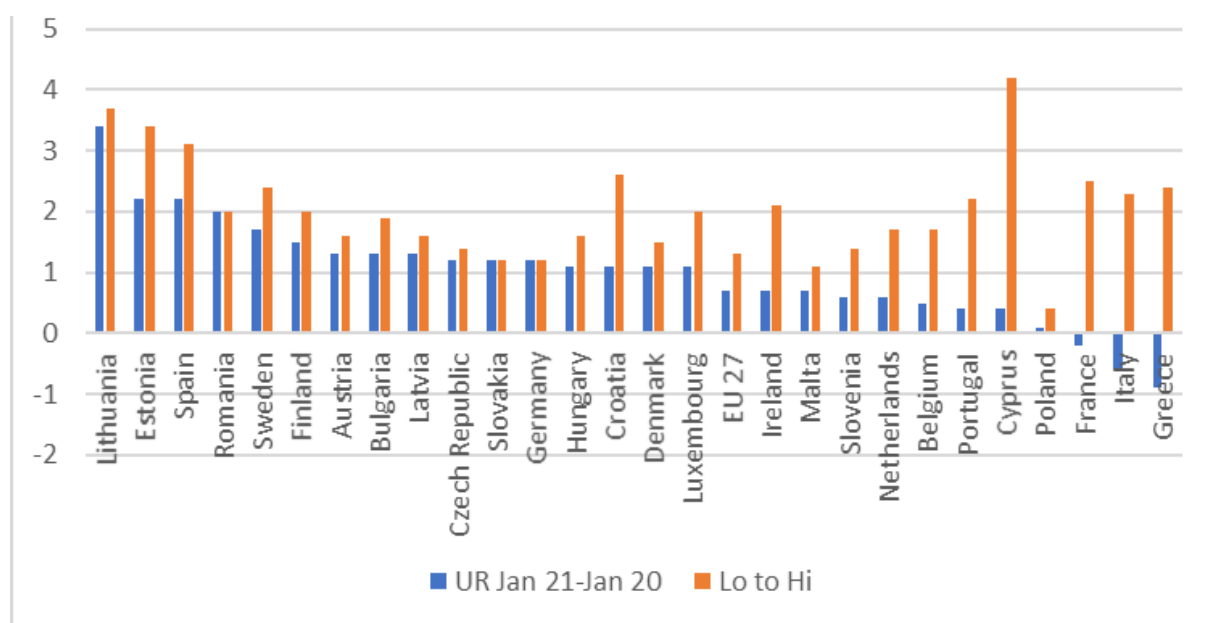
EUROPEAN LABOUR MARKETS IN THE COVID CRISIS

The discussion in the section so far has focused on important structural characteristics of European labour markets, whose parameters tend to move rather slowly from one year to the next. Most of the figures cited are from 2019 or earlier years, as the aim is to sketch the labour market in more or less normal conditions. This is the best basis to discuss the longer-run trends and forecasts that will be the subject of Section 3 of this report.

In 2020 the economy and labour market of all EU countries was hit to an unprecedented degree by the crisis induced by the covid-pandemic. Its effects continue in 2021. In this section we look briefly at how some of the variables already discussed have changed in the crisis. This is important for our purposes because the way that European economies have adjusted to the crisis offers insights that are relevant for thinking about appropriate economic and labour market policy responses. And, more fundamentally, the current situation represents the point of departure; the damage wreaked by the crisis will need to be cleared away before the necessary long-term changes can be achieved.

The output shock as economies were locked down was unprecedented in post-war Europe, easily exceeding that of the great recession. Against that background, the rise in unemployment was very limited (Watt 2020a). Over the course of the year the monthly unemployment rate increased by just 0.7pp. Changes over the calendar year seem, at first sight to suggest a very different experience across countries, with increases over 2pp in two Baltic states and Spain, while France, Italy and Greece actually posted lower rates at year's end than at the start. However, this largely reflects a different dynamic going into the crisis: in some countries unemployment was initially falling fast from high levels. If we look at the difference between the best and worst month during the year ("lo to hi"), EU countries are more tightly grouped around the EU average of 1.3pp.

Figure 7: Changes in unemployment rates during 2020



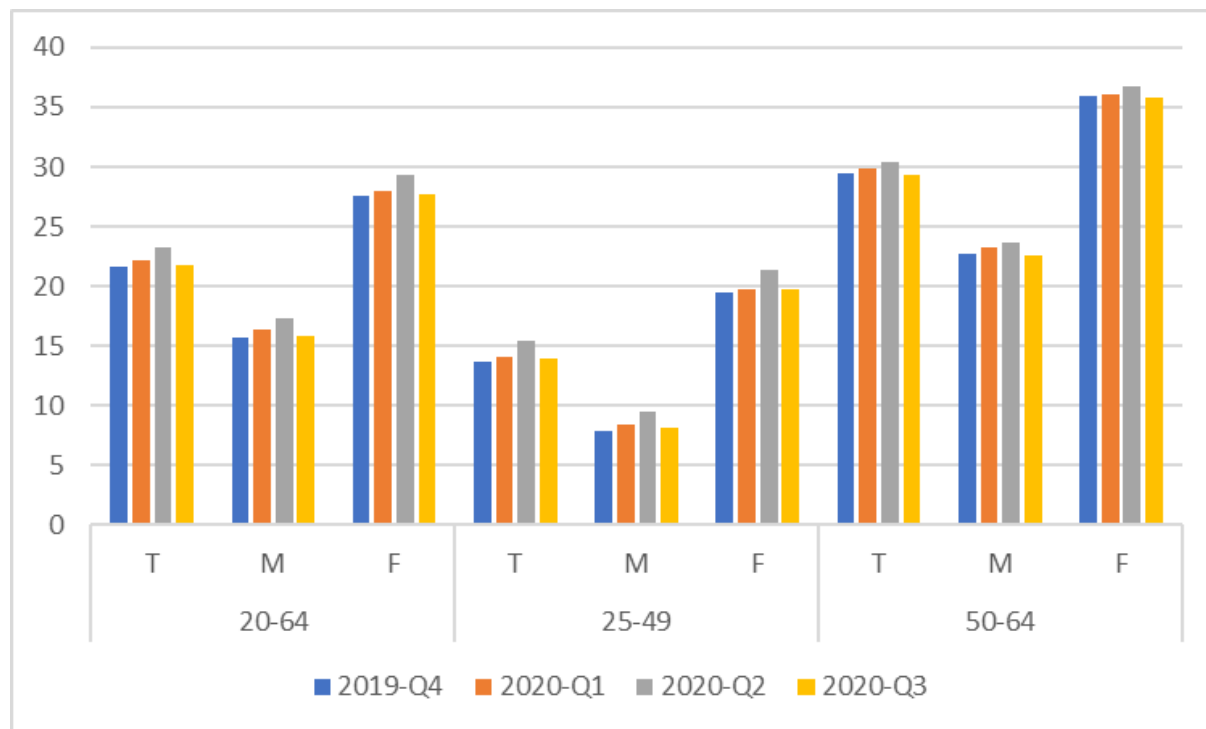
²⁰ Tobsch V/Holst E (2019), Potenziale unfreiwilliger Teilzeit in Deutschland", SOEPpapers 1032/2019

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There are a number of reasons why such a huge economic crisis did not show up to a much greater extent in open unemployment. Some represent policy successes²¹; others are rather a form of hidden unemployment.

Of particular concern is withdrawal from the labour market into inactivity. This was substantial in the second quarter. It appears to have been largely reversed in Q3, but the data are not seasonally adjusted, so more data will be needed to confirm this. Figure 8 shows an overall increase of 1.7pp compared with the last quarter of 2019; noteworthy is the fact that core-age workers, especially women are most affected.

Figure 8: Inactivity rates, 20-64 (not seasonally adjusted)

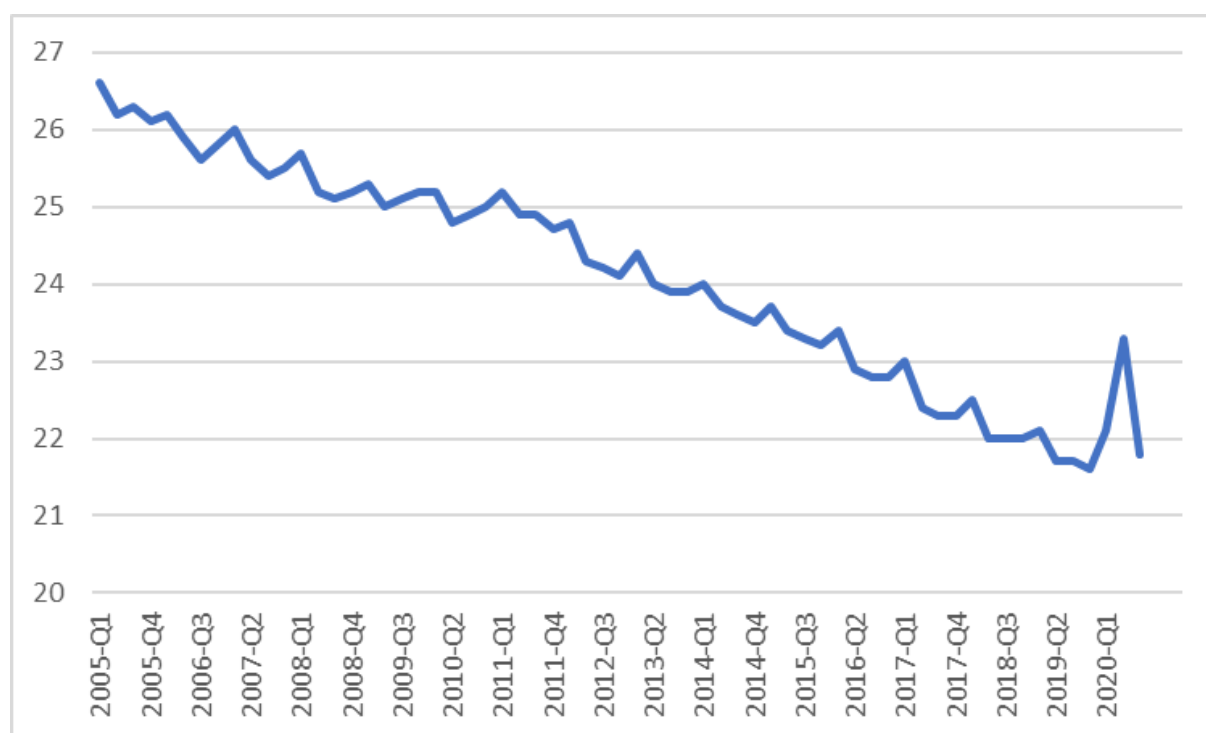


To put this hike in context: Figure 9 shows the clear, but temporary, break in a longer-run trend towards lower inactivity rates.

²¹ In many countries the social partners had a key role – see: Eurofound (2021b), Involvement of social partners in policy making during Covid-19 outbreak

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Figure 9: Inactivity rates since 2005



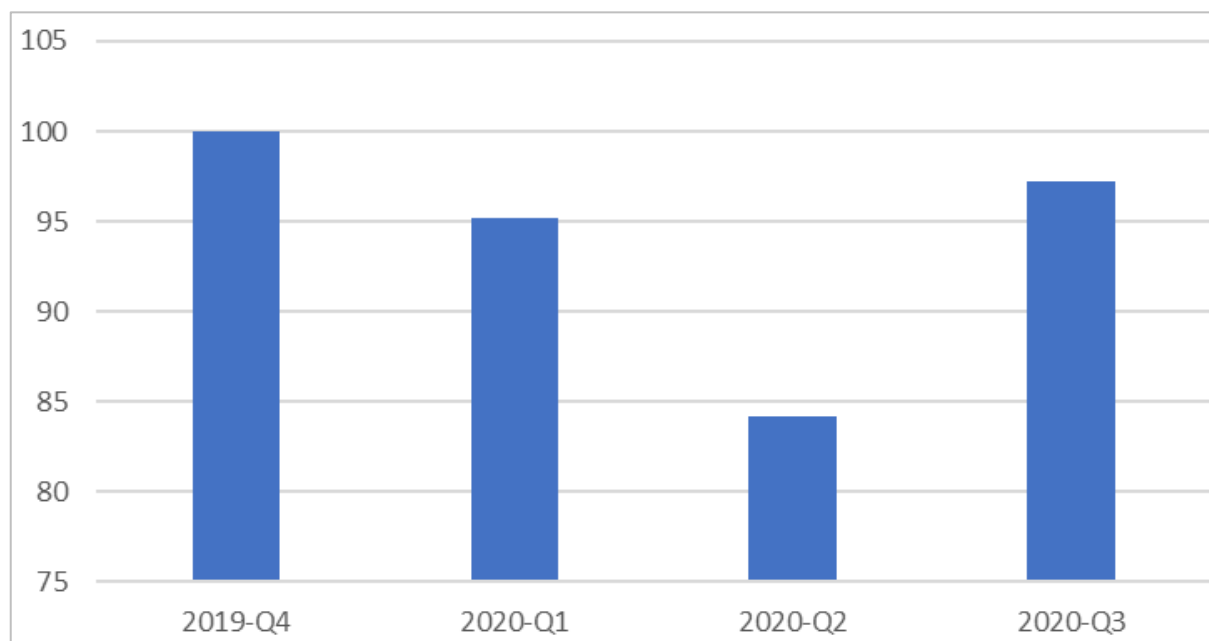
An additional adjustment mechanism was to maintain employment through working time reduction. This could take different forms, from voluntary taking of accumulated overtime hours to state-financed working time reduction schemes, including to zero hours. The overall impact of such measures can be seen in figure 10. Already in the first quarter of 2021 total hours fell by 5%, only to plunge to a level representing just 84% of that in the last quarter of 2020.

Cuts in working time have the major advantage of maintaining employment relations; the substantial and swift recovery in Q3 bears testimony to this. Nonetheless, reduced hours also reduce (more or less) proportionally contributions to social (including pension) insurance systems²², while state-supported WTR-schemes also draw on public revenues and are thus implicitly in competition with other benefits.

²² In some countries WTR schemes include contributions to social security schemes such as the pension system. For example, in Germany, contributions are paid for 80% of the earnings reduced by the working time reduction in addition to the contribution for the remaining working time. As a result the contribution to the pension system still rose in 2020 by about 0.9 percent. In the current corona-crisis this is financed by the employment agency, which exceptionally reimburses the employers for these contributions.

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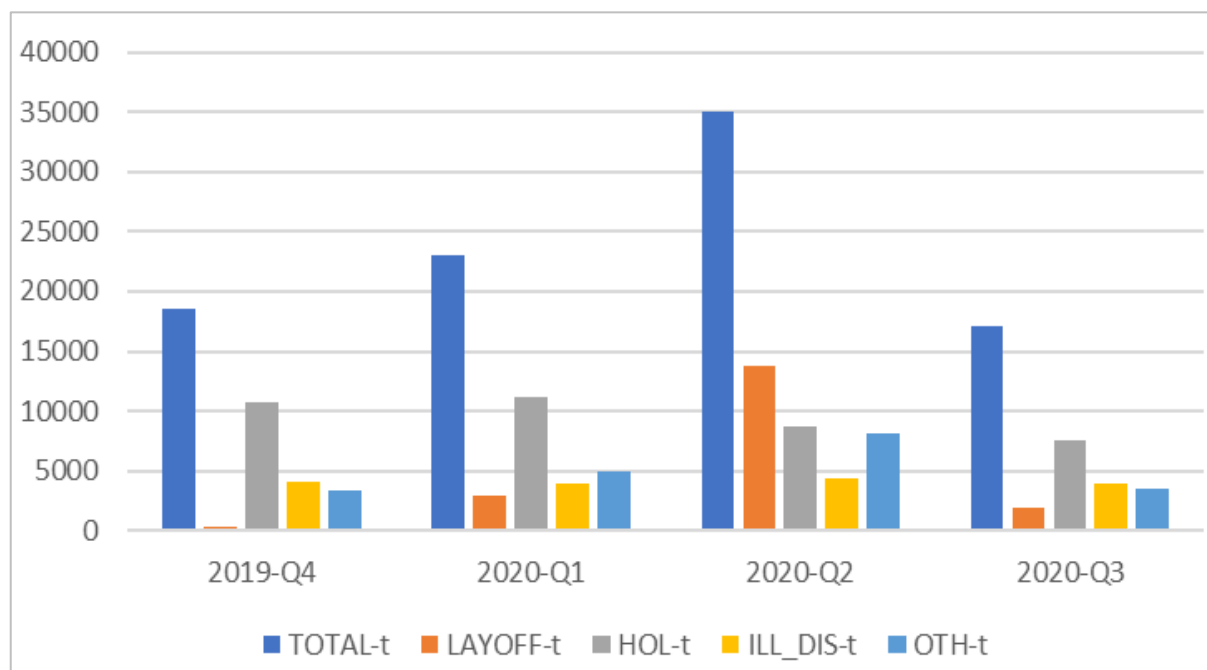
Figure 10: Total working hours, q4 2019= 100 (seasonally but not calendar-adjusted), EU27



Some additional data on the use of layoff schemes is presented in figure 11. Total absences almost doubled in the second quarter, increasing by almost 17 million. By far the most important reason was because workers were laid off temporarily (around 14 million). In Q3 layoffs represented around 7.4% of total employment and were around 40% higher than the absence due to workers taking holiday in a typical quarter. Perhaps surprisingly, absence due to sickness, although somewhat elevated, did not make a significant contribution to the increase in absences from work. These figures confirm the vital role played by government furlough schemes, for which refinancing from the EU level has become available through the SURE scheme. But there was also a substantial increase in the “other reasons category”, which more than doubled to around 8.1 million workers. This category includes absences due to personal or family responsibilities and reflects the fact that many workers were forced to take unpaid leave because of the closure of child-care facilities, but likely also to care for sick relatives. Accordingly there are some significant gender differences in the figures (not shown). Women are underrepresented compared with male workers in lay-off schemes, but significantly overrepresented in the “other reasons” category.

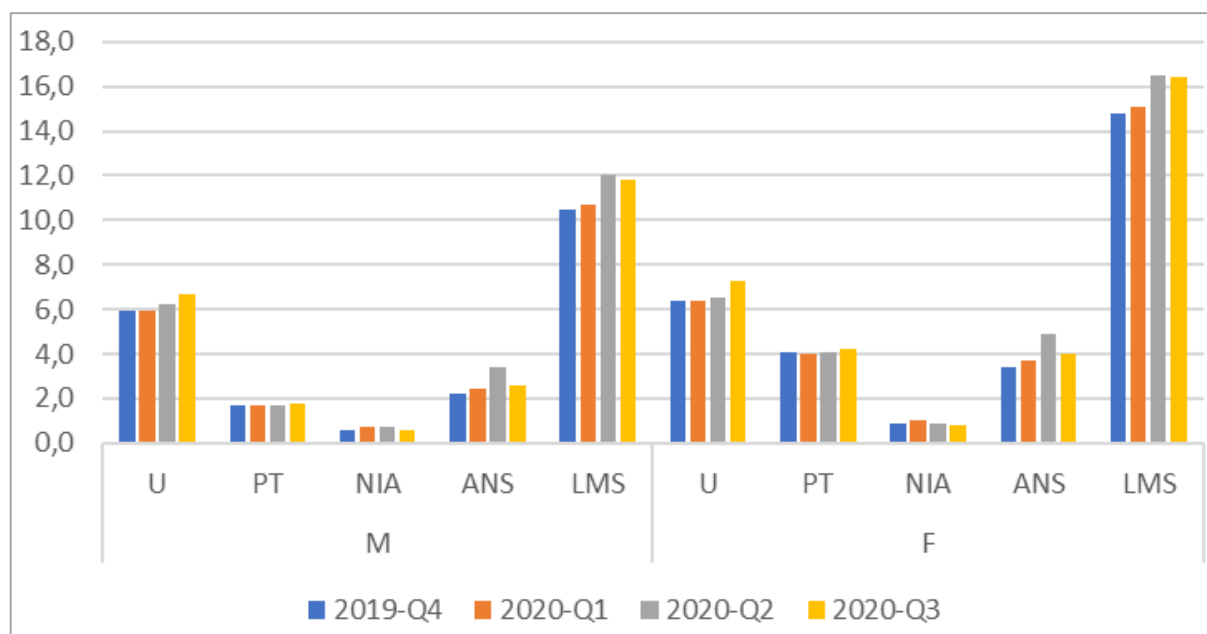
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Figure 11: Absences from work by reason, seasonally adjusted



Finally, we revisit the Eurostat measure of labour market slack discussed above. Overall, the LMS measure rose from 12.5 to 14.1% between Q4 of 2020 and the second quarter of this year; it fell back only marginally in Q3 (13.9%). This reflected a shift initially into inactivity (here specifically: being available but not actively seeking) and then into unemployment. The increase in LMS was slightly higher for women (1.7pp) than men (1.5pp).

Figure 12: Labour market slack components by gender in per cent, EU27



All in all European labour markets have been exposed to major shocks during 2020 as a consequence of the pandemic. Policymakers at national but also EU level have shown substantial creativity in avoiding the output shock translating into open unemployment. To the extent that employment relations could be maintained through various furlough and working time reduction schemes, policy measures make an important contribution to permitting the recovery to proceed with a minimum of delay. Incomes too have maintained, at least in part, avoiding knock-on effects on demand. In the longer-run more important still is that job-specific skills are maintained.

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However, the crisis nonetheless raises many concerning issues of relevance to the financing of pension and other social insurance systems. Not only has unemployment risen, large numbers of workers have been forced into some form of (partial) inactivity; this has particularly affected women. They are therefore not contributing (fully) to financing pension insurance systems. The data currently available show that a considerable proportion of the labour market dislocation, which peaked in the second quarter, was reversed during the third quarter. However, many European countries, having enjoyed a comparatively speaking easier summer entered a second wave in the autumn which led sooner or later to renewed lockdowns and other restrictive measures. The longer labour market dislocation continues, the greater the concern about longer-term negative (hysteresis) effects, which could lower employment rates also in the longer term. Moreover, the various support measures provided by governments have put substantial pressures on public finances. The associated rise in public debt which will need to be serviced implies a looming competition on the spending side of the government balance sheet. This underlies how vital it is that both national governments and the EU level take all measures necessary to relaunch the European economy and heal the labour market damage caused by the crisis as quickly and effectively as possible. This is addressed in the next section.

3. POLICY ACTION NEEDED IN ORDER TO IMPROVE EMPLOYMENT INTEGRATION

“A strong Social Europe is the foundation not only of our citizens’ prosperity and well-being but also of a competitive economy. A skilled innovative workforce, capable of shaping and adapting to the green and digital transitions will be key to this. However, as Europe enters a new decade, progress still needs to be made to reach high levels of employment, skills and employability, and robust social protection systems. ... With unemployment and inequalities expected to increase as a fallout of the pandemic, focusing our policy efforts on quality job creation, up- and reskilling and reducing poverty and exclusion is therefore essential to channel our resources where they are most needed” (EU Commission 2021, The European Pillar of Social Rights Action Plan)

Achieving the higher employment rates and creating the good jobs needed for a strong Social Europe including pension adequacy and sustainability, requires EU countries to overcome the structural shortcomings of their labour markets and the damage caused by the current and recent economic crises. This will require policy measures at both the European and national level.

We provide here a brief overview of some of the key reforms and policy measures needed to raising employment rates in good quality jobs.²³

THE EUROPEAN RECOVERY PROGRAMME AND ECONOMIC GOVERNANCE REFORM

Labour market policies, discussed in the next sub-section, are vital tools to promote high-quality productive employment. But they will be in vain if the macroeconomic environment and, particularly, the policy framework is such that the economy is powerless to cope with negative shocks that drive down output and employment below potential levels. The global financial and subsequent euro crises did huge damage to European labour markets, particularly in the south. They were still recovering when the very different but also pernicious covid-shock hit.

So far the serious mistakes made in the euro crisis have been largely avoided. European economic policy reacted swiftly.²⁴ The fiscal rules were suspended. The ECB stepped up with supportive measures, notably the PEPP scheme that enables the central bank to purchase bonds of selected countries to limit interest-rate spreads. As a result EU member states have not, so far, been forced to tighten their belts

²³ Of course, not all topics that are of vital importance for good employment integration and continuous employment until retirement can be addressed in this study such as the very important issue occupational health and safety, prevention and rehabilitation. A more complete overview of policy action needed is, for instance, laid down in ETUC (2019a), Action Programme 2019-2023

²⁴ An overview can be found in Watt (2020b)

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and have been able to support businesses and incomes in the face of the pandemic-induced restrictions. However, pressures on national budgets are increasing. Fiscal rules will be reapplied in the near future.

It is key, therefore that, in addition to continued support from monetary policy, the process of revising the economic governance framework is successfully completed before rules are reimposed. Without entering into details here (see for instance Dullien et al 2020) there is now a considerable degree of agreement amongst academic economists and policymaking institutions on the needed direction of reforms, if not the specifics.

- The debt rules need to be revised to take account of countries' debt carrying capacity in a low interest environment; sustainability is the key issue not arbitrary debt ceilings.
- The deficit rules need to be revised (e.g. via an expenditure rule) to ensure that they encourage counter-cyclical behaviour and prevent damaging pro-cyclical austerity.
- Public investment that expands productive capacity and strengthens social resilience needs to be protected and indeed encouraged through some form of "golden rule" enabling them to be deficit-financed.
- The rules need to pay greater attention to macroeconomic (especially current account) imbalances and do so in a symmetric way (i.e. focus equally on surpluses and deficits) to ensure balanced and sustainable economic developments. The Macroeconomic Imbalance Procedure should be revised and its institutional underpinning strengthened accordingly (Koll/Watt 2018).

In addition to reforming the rules for national economic policies, Europe needs more collective action, pooling economic resources to emerge stronger from the crisis, in the short term, and to make the whole European economy more productive, more cohesive and resilient to shocks – and ecologically sustainable – in the longer run. Here some considerable progress has been made. The SURE programme was launched to refinance Member States' short-time working schemes, easing the pressure on national budgets at a time of need. The Next Generation EU programme, and within it the Recovery and Resilience Facility (RRF), marks an historic step. For the first time the EU will be able to borrow collectively on capital markets – to the tune of three-quarters of a trillion euro – to fund projects decided at national level. Studies (e.g. Watzka/Watt 2020) show that the RRF will boost economic activity by supporting public investment and has a strong redistributive component: Member States hard hit by the crisis and those with low per capita incomes benefit disproportionately.

The RRF is both an historic step forward and inadequate to the task of ensuring a speedy and strong recovery. The boost to growth will on average amount to several decimal points of GDP a year only. Meanwhile the US has just announced a stimulus package of around 10% of GDP. Even if the two are not strictly comparable, the dimensions are clearly far apart. Europe needs to raise its game. The European Green Deal marks an impressive commitment, on paper, to the challenge of addressing climate change and specifically of decarbonising the European economy by 2050. Huge amounts of investment are needed. These would also create good, well-paying jobs that, incidentally, would help sustain pension and other social insurance systems. But the ambitious plans and commitments need to be matched by concrete activities for which financial resources are needed. In the prevailing low-interest environment – solvent national governments and the EU as a whole can raise long-term capital at negative real interest rates – it is economically irresponsible not to be investing massively in our productive capacity in the skills of the workforce, in our public health and in the vital task of greening the economy so that it is sustainable. An ambitious programme of investment in genuinely European public goods (such as high-speed rail, electricity transmission networks and public health systems – see Creel et al 2020) should be considered as a complement to the national projects financed through the RRF and other EU programmes.

LABOUR MARKET POLICIES

Specific groups such as women, young people entering the labour market, older workers, workers with a migrant background or workers with reduced work capacity are particularly affected by poor employment integration and, as a consequence, have higher risks of insufficient old-age protection.

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Within the scope of this study, we only can focus on a few groups for which policy action is much needed for better labour market participation - women, low qualified workers and immigrants. We touch upon some key issues that should be considered in future policies. Furthermore, we point to the importance of social dialogue as core instrument for successfully addressing existing labour market shortcomings and new needs.

Women

Women, because of discrimination in several areas such as unequal gender-specific distribution of unpaid work, often stabilised or even reinforced by legal regulation, are far less well integrated in paid employment than men - reflected in lower employment rates, lower hourly earnings, higher part-time rates and financial dependency on partners.

Against this background, in order to achieve a pension benefit level allowing ageing in dignity, many women have no option but to extend their working lives, frequently in low paid marginal part-time jobs, in order to at least partly compensate for the financial losses associated with fragmented careers and very low earnings.

Polices needed to improve employment integration of women:

- Implementing EU's Gender Equality Strategy "A Union of Equality: Gender Equality Strategy 2020-2025"²⁵
- Combating the gender pay gap, for example through supporting the EU Commission's Action Plan on 'Tackling the Gender Pay Gap'²⁶ and implementing a game changing EU Directive on Gender Pay Transparency.²⁷ Reducing the gender pay gap, in addition to generally foster fairness, will help to increase labour market participation of women because as long as women's earnings are lower, economic constraints for households create incentives for unfair gender-specific distribution of paid and unpaid work.
- Provision of a dense net of affordable, high quality child-care facilities and infrastructure for long-time care. In addition to raise labour supply, extending and improving the care-infrastructure will also raise demand for paid work.
- Fostering of a balanced distribution of parental leave between man and women, for example through financial incentives for an equal split of parental leave between parents. As long as employers assume women are more likely to go on parental leave and to work part-time, structural discrimination will prevail.
- Implementing specific programmes for improving employment integration of women of higher working age, for example through improving working conditions in female dominated sectors of the economy, supporting women to re-enter the labour market after career interruptions or supporting specific re-skilling and up-skilling programs of older female workers. In a more mid- and long-term perspective, a life-cycle approach is desperately needed, considering employment barriers females face throughout working age.
- Avoiding tax and social contribution disincentives regarding labour market entries of 'second earners'. The way tax-benefit systems are set up can act as a deterrent for second earners, who are most often women. In countries where a progressive income tax refers to household income, a labour market entry of the person with the lower income is less attractive. Similarly, social contribution free employment options for employment at only marginal pay may have a login effect for second earners.
- More equal distribution of unpaid care and household work between men and women
- Restricting the admissibility of very long or unpredictable working hours - women are the most negatively affected.

²⁵ EU Commission (2020c)

²⁶ Council of the European Union (2020)

²⁷ See EU Commission (2021b), Proposal for a Directive and ETUC (2021a), Response to the EU Commission's proposal for a Directive

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Low qualified workers

In section 1, we have seen that unemployment much more affects workers with a low level of education compared to those with high qualification. Furthermore, very likely most of EU's 5.8 m. jobless available for work but not actively seeking²⁸ and recorded as 'discouraged' within the category of 'inactives' also are low qualified persons. Evidence shows that a low level of education/qualification, very frequently, translates into a high risk of joblessness and, later on, into insufficient pension benefits.

The European Pillar of Social Rights in its first principle clearly addresses the issue: "Everyone has the right to quality and inclusive education, training and lifelong learning in order to maintain and acquire skills that enable them to participate fully in society and successfully manage transitions in the labour market."

Policy action needed to achieve the EPSR objectives (see also EU Commission's programmes, such as 'Youth Employment Support: a Bridge to Jobs for the Next Generation'²⁹ and 'Upskilling Pathways: New Opportunities for Adults'³⁰)

- Guaranteeing high-quality employee training and life-long learning for all workers, in particular specially developed and tailored low-threshold programs for low-skilled and low-qualified ones. Fast technological change requires adapting qualifications to changing needs.
- Implementing a real 'skills guarantee' allowing low-skilled workers to obtain at least certified basic skills and key competences recognised in the workplace.
- Implementing paid annual educational leave.
- Extending public job search and job assistance. Public employment offices are still an important interface between demand and supply for labour. Strategies that aim at those outside the labour force, such as the 'discouraged', can help to substantially improve the chance to (re)enter employment, for example through informing about job possibilities and available trainings. Job assistance and job coaches can help candidates to cope with challenges of entering employment. Furthermore, well-tailored employment subsidy programmes can be the first step to employment.
- Setting minimum wages at an appropriate level. People with low education level, by far, are the most affected by very low hourly wages which discourage job take-up.
- Substantially reducing NEET-Rates by offering young people job or training possibilities. This is of highest priority, because being neither in employment nor in education or training during youth, in many cases, massively reduces employment opportunities over the entire working age.
- Reduce inequalities in the educational system and early school leaving.

Migrant workers

Immigration workers, overall, have less favourable conditions on the labour markets and are less integrated into employment compared to those native-born. The following strategies might help to increase labour market participation:

- Tackle discrimination of immigrant workers and foster policies of diversity.
- Validate skills from third country migrants.
- Provision of language courses, especially for newly arrived migrants.
- Allow refugees an early labour market entry to avoid de-skilling and negative psychological effects caused by long-term unemployment.
- Early provision for housing and social services for refugees as a basis for successful labour market entries.
- Avoid segregation in geographical areas and schools in order to foster equal opportunities for everybody

²⁸ Age group 20-64

²⁹ EU Commission (2020e)

³⁰ EU Commission (2016), see also: Council of the European Union (2019)

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- Addressing educational deficits of the second and subsequent generations through special support

Boosting social dialogue and workers' participation rights

Social dialogue and workers' participation rights are cornerstones of the European Social Model and the European Pillar of Social Rights.³¹ Countries with the most developed social partnerships and effective social systems are among the most successful, resilient and competitive in the world. Yet, policy action is needed to realise the full potential of social dialogue³² and workers' participation rights³³.

For overcoming existing labour market shortcomings and meeting new challenges, such as coping with and actively shaping digital and green transition it is of crucial importance to have a well-functioning social partnership. The social partners have precise knowledge on labour market realities and can provide needed expertise for casting adequate policy measures both at EU and at national level. Furthermore, the social partners have instruments at their disposal (collective bargaining) that allow to directly target specific challenges, such as technological change³⁴, discrimination at work³⁵ or work-life balance shortcomings³⁶.

To give two further examples of policy areas where social partner involvement and action is key:

- For good and productive labour market integration of people of advanced working age good working conditions throughout the life-course - and, thereby, maintaining physical and mental health - are of tremendous importance.
- In order to develop tailored upskilling and life-long learning strategies, social partner knowledge and workers' participation are fundamental.

4. DEPENDENCY RATIOS - THE LABOUR MARKET AS A KEY DETERMINANT

POPULATION AGEING

According to Eurostat's demographic projections, from 2019 to 2070 the EU 27 population is expected to decline from 447 to 424 m.³⁷

Population ageing becomes visible by looking at the major age groups 0-19, 20-64 and 65+, the two latter conventionally referred to as working age and retirement age. While the number of those aged 65+ is expected to rise by 37 m., the age group 20-64 is expected to go the opposite direction, with a decline of 48 m.

³¹ See EPSR Art 8

³² EU Commission (2021c), Report on strengthening EU social dialogue; see also Eurofound (2020b), Capacity building for effective social dialogue in the European Union

³³ See ETUC (2020), Democracy at work matters and ETUC (2021b), Resolution 2021 – Year for More Democracy at Work

³⁴ To give an example: European Social Partners (2020), Framework agreement on digitalisation

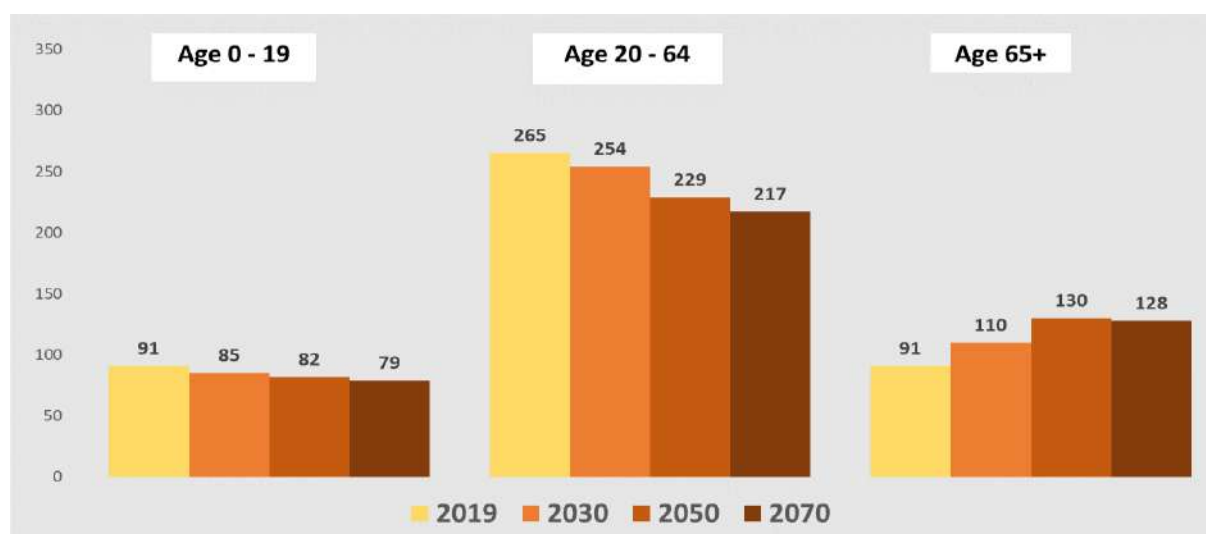
³⁵ See Eurofound (2020a), Role of social partners in tackling discrimination at work

³⁶ See ETUC (2019b), Rebalance – Trade Unions' strategies and good practices to promote work-life balance

³⁷ EU Commission (2020d), The 2021 Ageing Report. Underlying Assumptions & Projection Methodologies. It has to be noted that, over a long period of time, there is much uncertainty in all projections, including those on demographic developments. However, despite uncertainty about its extent, derived from the current age structure there is evidence that massive population ageing will take place. For the sake of simplicity, in this study we restrict the use of the demographic background to Eurostat's baseline demographic projection.

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Figure 13: EU 27 – Population 2019-2070 (main age groups)



Source: EU Commission, *The Ageing Report 2021, Underlying Assumptions*

Population ageing over the period 2019 – 2070, in relative terms:

- The share of the age group 65+ in the total population is expected to rise from 20% to 30%.
- The demographic 'old-age to working-age ratio', i.e. the number of those aged 65+ relative to the number of those aged 20 to 64, is expected to increase from 34.4% to 59.2%.

Note: What OECD since its 2019 'Pensions at a Glance' edition correctly labels 'old-age to working-age ratio' is widely known under the unfortunate designation 'old-age dependency ratio'. Labelling the 'old-age to working-age ratio' as 'dependency ratio' in the context of pensions suggests that the future development of this quotient is a key determinant of financial sustainability, while, as shown in this study, only to look at the age structure of a society falls short of basic economic realities. Unfortunately, the EU Commission still sticks to the old terminology and to highly problematic deductions, such as "The old-age dependency ratio provides a gauge of how demographic ageing alters the beneficiary-contributor balance"³⁸ or "... the old-age dependency ratio in 2040 would only remain at the same level as in 2020 if working life were extended to the age of 70."³⁹ Thus, the 'old-age dependency' terminology seems to lead to the false and misleading equation of the pure demographic 'old-age to working-age' ratio and the 'benefit recipients to contributors' ratio. As a consequence, the substantial increase of the age limit between working and retirement age is frequently presented as the only lasting solution for the coming imbalances, at least if drastic pension cuts are to be avoided.

It goes without saying, that the expected sharp increases of the share of older people among total population and the 'old-age to working-age ratio' means a great challenge for all European societies and, in particular, for old age related issues, such as pensions (and long-term care).

The European Commission has sought in some publications to put the focus on raising employment rates, but, so far, these have not received the necessary attention. Examples include:

- EU Commission (2012), White Paper on Pensions: "Many countries have considerable scope for improving the future adequacy and sustainability of pension systems by raising employment rates, and this not just in the higher age groups, but also for groups with lower employment rates such as women, migrants and youth. Reaching the EU employment target or catching up with the best-performing countries could almost neutralise the effects of population ageing on the weight of pensions in GDP."⁴⁰

³⁸ EU Commission (2020d), *The 2021 Ageing Report. Underlying Assumptions*. p 24

³⁹ EU Commission (2021a), *Green Paper on Ageing*. p 13

⁴⁰ EU Commission (2012), *An Agenda for Adequate, Safe and Sustainable Pensions. White Paper*. Chapter 2.3.

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- EU Commission (2008), Demography Report 2008: “Raising employment levels [in quality jobs] is arguably the most effective strategy with which countries can prepare for population ageing.”⁴¹

There are many indications that confusion between pure demographic and economic relations has played a key role for not putting these employment-focused strategies to the centre of policymakers’ concerns.

RE-INTERPRETATION OF DEMOGRAPHIC DATA

Since the 1990’s, public debate on the long-term perspective of public pension systems has been focussed on demographic change, the increase of ‘old-age dependency ratios’ and the resulting pressure on public budgets.

Most of the myriad of statements disputing the long-term financial sustainability of pay-as-you-go financed public pension systems are, be it directly or indirectly, based on demographic data – and its misleading and misdirected interpretation!

Thus, EU Commissioner Andor, with the aim to support the Commission’s claim for raising statutory retirement age, in an attention-grabbing statement at the presentation of 2010’s Green Paper on Pensions claimed: „The number of retired people in Europe compared to those financing their pensions is forecast to double by 2060 – the current situation is simply not sustainable.”⁴²

However, none of the European Commission’s many studies on future developments has ever predicted that the ratio between pensioners and contributors will double over the next decades. Then, to what Commissioner Andor was referring to? The answer is quite simple: He did not refer to the alleged relation of those financing pensions and those retired, but, instead, to the ‘old-age to working-age ratio’, defined at that time as age group 65+ relative to age group 15-64. The number of people aged 15-64 was reinterpreted and equated with the number of people in employment (“those financing”) and the number of people 65+ with the number of pensioners (“retired people”).

Similar misleading pattern of argumentation can be found, as already mentioned in the EU Commission’s Green Paper on Ageing and in the preceding Report on the impact of demographic change: “Europe will face a major challenge in funding its age-related spending, in a way that is also fair across generations. This is because the ratio between people paying taxes and social security contributions and those receiving pensions and other benefits is decreasing rapidly. In 2019, there were on average 2.9 persons of working-age for every person above 65. In 2070, this ratio is projected to fall to 1.7.”⁴³

A simple comparison of the number of those aged 20 to 64 and the number of people in employment shows how far from economic reality it is to equate the working-age population with contributors (2019 values)

- Number of those aged 20-64	265 m.
- Number of employed aged 20-64	194 m.

Why these enormous differences? Mainly, because among those of working age, even before the outbreak of the corona crisis, about more than a quarter has not been in employment. And, among the huge number of those not in employment, a substantial share is in need of income replacement benefits, such as the unemployed or those in (frequently labour market-related) early-retirement.

A glance at the current ‘old-age to working-age’ ratios in some OECD countries demonstrates how little informative value this ratio has with regard to quality and solidity of social systems: Compare for instance Mexico 13.2% and Turkey 15.2% with Germany 36.5%, Finland 40.1%, Japan 52%. Mexico and Turkey have apparently very low ‘old-age to working-age’ ratios, but are far from being best-performers,

⁴¹ EU Commission(2008), Demography report 2008, p 144

⁴² EU Commission (2010), [EU launches public debate on the future of pensions - Employment, Social Affairs & Inclusion - European Commission \(europa.eu\)](#)

⁴³ EU Commission (2020d)

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because in these countries, in addition to low labour productivity, a significantly lower share of those of working age is in (formal) employment.

ECONOMIC DEPENDENCY - STANDARD VERSUS HIGH EMPLOYMENT SCENARIO

'The ageing challenge is often illustrated by the doubling of the old age dependency ratio (population 65+ to population 15-64) from 26% in 2010 to 50% in 2050. Yet the real issue is the economic dependency ratio, defined as the unemployed and pensioners as a percentage of the employed' (EU Commission 2012, White Paper on Pensions, section 2.3.)

Incomprehensibly, until now, in EU's two flagship reports on pensions and old-age related challenges (Pension Adequacy Report and Ageing Report) the 'economic dependency ratio' suggested in the White Paper has never been used.

Instead, the Ageing Report displays the so-called 'economic old-age dependency ratio', which contrasts the number of inactive people aged 65+ to the number of people in employment. Incomprehensibly, this indicator does not take into account the current 28% share of pensioners aged below 65 (Ageing Report 2018), thereby ignoring the potential of future reduction of transfer needs for pensioners within the age group below 65. Furthermore, income replacement needs for the unemployed are not considered. Thus, the Ageing Report's 'economic old-age dependency' indicator massively underestimates positive impacts of improving the employment integration of those of working age.⁴⁴

In this section, based on the White Paper's definition, we calculate two scenarios of the future development of the 'economic dependency ratio'.

- **Standard Scenario (St.S.)**
- **High Employment Scenario (H.E.S.)**

The Standard Scenario is essentially based on the 'no-policy-change' projections in the EU Commission's Ageing Reports 2021 (demography, employment, unemployment) and 2018 (pensioners⁴⁵). In order to record unemployment as complete as possible we include not only people classified as unemployed according to LFS-definition but also jobless people Eurostat classifies as 'job seeking but not immediately available' or 'available but not actively searching' (see section 1). Generally, both groups of jobless people are in need of income-replacement benefits.

In the High Employment Scenario we assume 'upwards convergence' of labour markets: The current 'best practice' levels regarding employment rates in the age group 20-64 (82% in Sweden) and regarding extended unemployment⁴⁶ (only 3% of labour force in Czech Republic) are assumed to be achieved by 2070. We exclusively focus on the age group 20-64.⁴⁷ Consequently, with regard to employment among those aged 65 and over, the assumptions are equal in both scenarios. Thus, expected employment

⁴⁴ Looking beyond the pension issue, the aspect of economic dependency would have to be thought of even more broadly. For in the end, the economically active persons must provide for all inactive persons, including children, the sick, the unemployed, pensioners, etc. Considering economic dependency in such a broader perspective, as in the EU Commission's 'total economic dependency ratio', also shows that looking only on the 'old-age to working-age' ratio massively overestimates future increase in economic dependency. Until 2070, the 2021 Ageing Report projects 13% increase of the 'total economic dependency ratio', i.e. far below the 'old-age to working-age' ratio's more than 70% increase.

⁴⁵ Unfortunately, at the time of the preparing the study, the 2021 Ageing Report's estimates on the future development of the number of pensioners are not yet published. If essential modifications of related assumptions (average exit age or participation rate in higher age groups) indicates the necessity of adaption, we try to take it into account (at least approximately).

⁴⁶ See Section 2.2.

⁴⁷ Due to the focus on the age group 20-64 – in accordance with the tender specifications – we do not include people aged below 20 in our calculations. Of course, in a more in-depth analysis both employed and unemployed people in this age group would also have to be taken into consideration (albeit the impact on the results should be rather marginal).

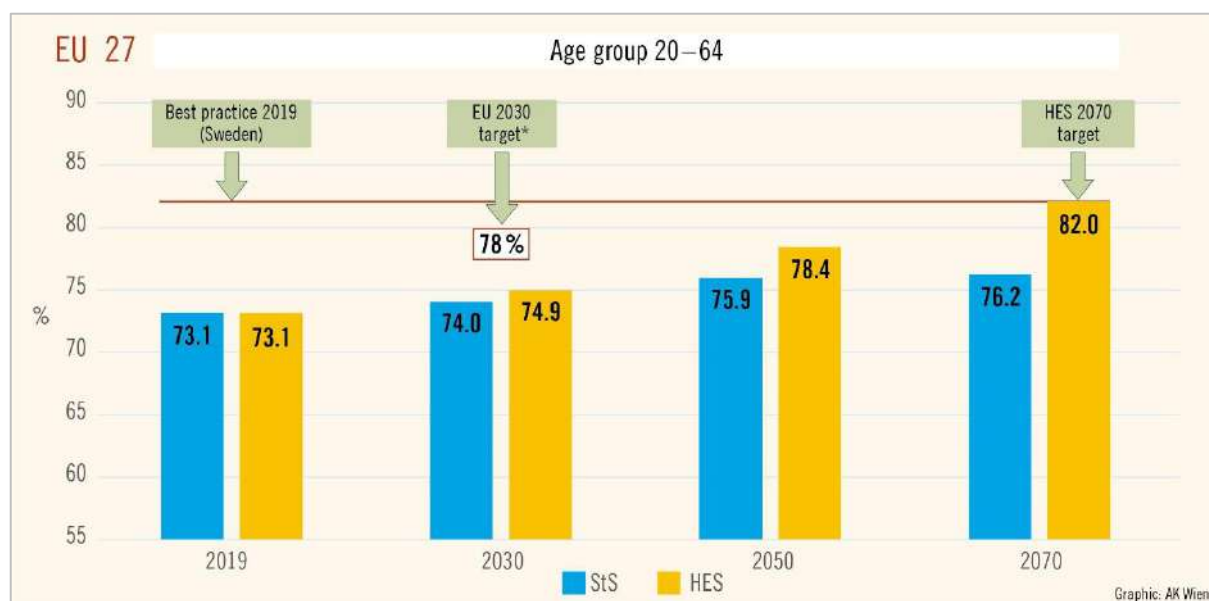
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effects of legal retirement age reforms already adopted are included but, even in the High Employment Scenario, there is no assumption of a further raising of legal retirement ages.⁴⁸

Figure 14: Data base / Key assumptions for the calculation of the two scenarios

	STANDARD SCENARIO - StS (,no-policy-change' assumption)	HIGH EMPLOYMENT SCENARIO - HES (,upwards convergence' assumption)
DEMOGRAPHY	Ageing Report (AR) 2021 ⁴⁹	AR 2021
EMPLOYED	AR 2021	Age group 20-64: Gradual increase of the employment rate to achieve 2019's best performance (82% Sweden) level by 2070 Age group 65+: Ageing Report 2021
UNEMPLOYED (EXTENDED)	Unemployed (LFS concept) → AR 2021 Jobless 'discouraged' & Jobless 'not immediately available' → Eurostat rates 2019 (forward projection in line with LFS unemployment rate / constant relation)	Gradual decrease of 2019's extended unemployment rate to achieve the 2019's best performance level (3% Czech Republic) by 2070
PENSIONERS	Age group 65+: → AR 2018 (numbers adapted to AR 2021's population 65+) Age group below 65: → AR 2018 (numbers adapted to AR 2021's population -65)	Age group 65+: equal to Standard Scenario (except increase resulting from higher employment in countries with low pension coverage ratios) Age group below 65: decrease in line with assumed increase of employment rates in the age group 55-64

Figure 15: Employment rate assumptions in Standard Scenario (StS) and High Employment Scenario (HES)



⁴⁸ Actual retirement age is an important parameter of the 'benefit recipients to contributors' ratio. However, what usually receives little attention there are other very important parameters too as shown in this study.

⁴⁹ Ageing Report 2021, Underlying Assumptions & Projection Methodologies

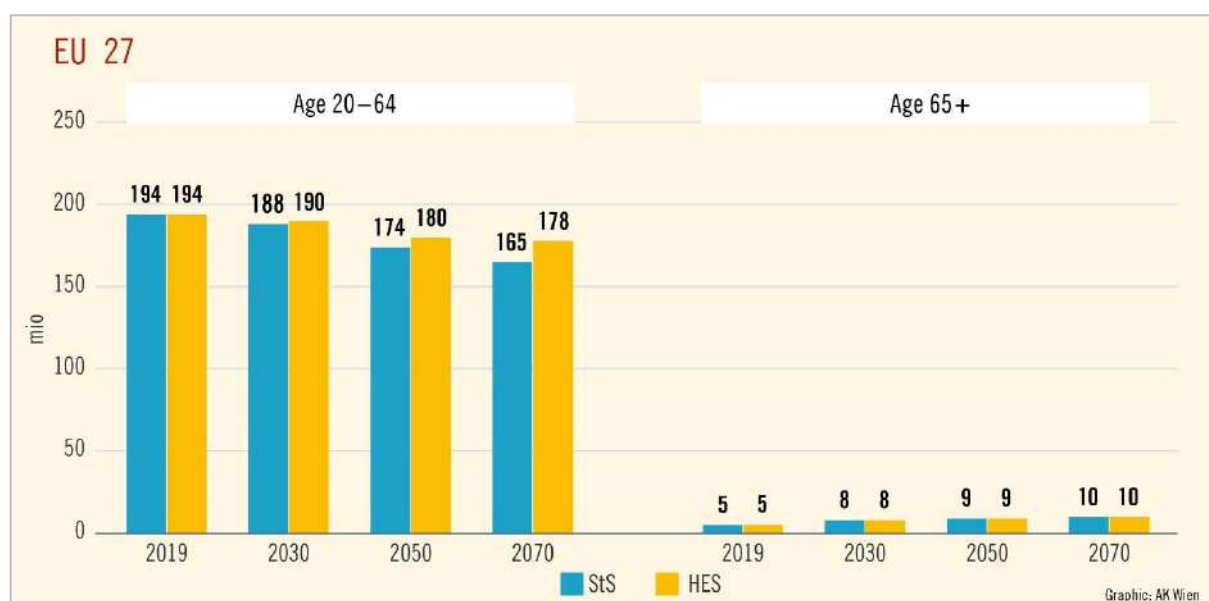
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**The calculation of an alternative scenario, based on EU's 2030 employment target and the assumption of some further increase over the next decade to reach 80% in 2040 is annexed to the study (EU 2030+ Scenario)*

The fact that an employment rate of 82% among those aged 20-64 has already been achieved in an EU Member State provides evidence that both EU's 2030 employment target and our High Employment Scenario are obviously within what is achievable. However, comprehensive policy measures both at EU and at national level will be required (see section 3).

It has to be noted in this context, that the EU over the next decades, in contrast to the past, will most likely have to cope with a substantial decline of the working age population (see 3.1.). Even in the High Employment Scenario the number of employed is declining, from 199 mio in 2019 down to 188 mio in 2070 (age groups 20-64 and 65+). In the Standard Scenario the decline is even much more pronounced, with a decline down to only 175 mio in 2070 (- 12% compared to 2019).

Figure 16: Employment assumptions in Standard Scenario (StS) and High Employment Scenario (HES)



By contrasting the future development of the key 'dependency ratio' used so far in the pension context ('old-age dependency ratio') and the two scenarios of the future development of the White Paper's 'economic dependency ratio' the tremendous impact of good/bad labour market integration of those of working age becomes evident. Thus, with regard to the ageing challenge the key importance of a strategy of 'upward convergence' and 'more and better jobs' is demonstrated, whereas the 'old age dependency ratio' only has very limited explanatory power.⁵⁰

ECONOMIC DEPENDENCY RATIO CALCULATIONS - EU 27

In EU 27, in 2019 the economic dependency ratio was 69.7%, i.e. for every 100 people in employment there were almost 70 people either unemployed or in retirement.

- People in employment	198 m.
- Pensioners	116 m.
- Unemployed (including jobless 'discouraged' or 'not immediately available')	22 m.

In sharp contrast, the 'old-age to working-age' ratio was only 34.4%.

⁵⁰ As the study had to be prepared within a short period of time we had to forgo more in-depth analysis of the quality of jobs of those classified as 'employed' in the LFS data and used in all key documents of the European Union. For many countries, such analyses (for example, limiting the considered number of employed to only those in more than marginal part-time employment – see Section 2) would disclose an even substantially higher potential for better labour market integration and, thus, for mitigating the demography-driven increase of the economic dependency ratio (see note on German case calculation in chapter 4.5.)

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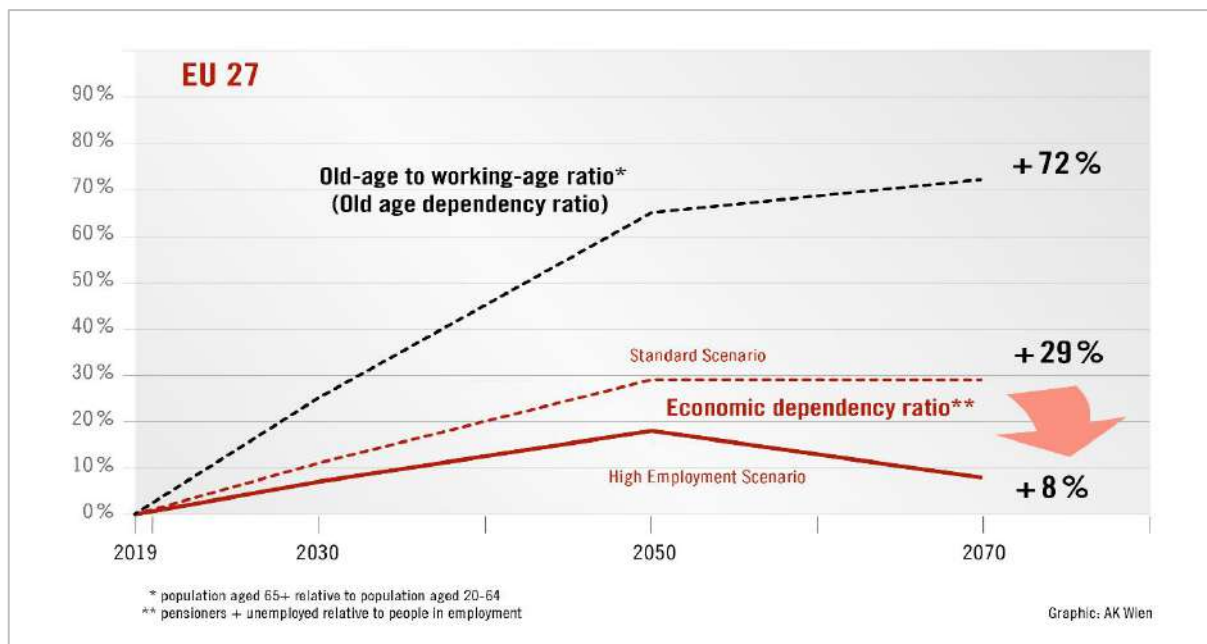
- People aged 20-64	265 m.
- People aged 65 and over	91 m.

As already mentioned (3.1.), the 'old-age to working-age' ratio is expected to reach 59.2% by 2070. Compared to 2019's 34.4% level, this means an increase by 72%. Both the Standard Scenario and the High Employment Scenario are calculated against this background of a massive shift between the age groups 65+ and 20 to 64.

The Standard Scenario, with its rather pessimistic employment and unemployment rate projections (based on 'no policy change' assumption), shows a 29% increase of the economic dependency ratio, from 69.7% up to 89.7% in 2070. The key 20-64 labour market assumption, taken from the EU Commission's Ageing Report 2021, is 76.2% employment rate in 2070, a rate which is significantly lower than the Commission's 78% employment rate target for 2030!

On the other hand, the High Employment Scenario, with its assumed gradual increase to 82% employment rate in 2070 and, in parallel, gradual decrease of labour market related early retirement pensions and 'extended unemployment' (down to 3%), reveals an only 8% increase, despite a presumed 2.5 m. increase of the number of pensioners aged 65+ (see Figure 17)

Figure 17: EU 27 – 'Old-age to working age ratio' versus 'Economic dependency ratio' (Standard Scenario / High Employment Scenario)



By comparing the Standard and the High Employment Scenario, the huge impact of different labour market developments becomes visible: The implementation of a labour market strategy of 'upwards convergence' could reduce the expected increase of the economic dependency ratio to less than one third of what is assumed in the EU Commission's basic assumptions on future developments, represented in the Standard Scenario.

Despite 72% expected increase of the 'old-age to working-age' ratio over the period 2019-2070, implementing the High Employment would lead to only 8% increase of the 'economic dependency ratio'.

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Table 1: EU 27 - Standard Scenario and High Employment Scenario – Key data

people in millions			Age 20-64				Age 65+			
			2019	2030	2050	2070	2019	2030	2050	2070
Population			265.02	253.52	229.06	217.16	91.28	109.37	130.31	128.52
People in employment	empl. rate	St.S.	73.1%	74.0%	75.9%	76.2%				
		H.E.S.	73.1%	74.9%	78.4%	82.0%				
	employed	St.S.	193.73	187.61	173.86	165.48	4.56	8.00	9.40	9.68
		H.E.S.	193.73	189.84	179.68	178.07	4.56	8.00	9.40	9.68
Unemployed (extended)	unempl. Rate (% of LF)	St.S.	10.6%	11.2%	9.0%	8.8%				
		H.E.S.	10.6%	9.1%	6.0%	3.0%				
	unemployed	St.S.	21.71	22.39	16.56	15.69				
		H.E.S.	21.71	18.27	11.28	5.44				
Pensioners			Age -64				Age 65+			
	St.S.		29.06	26.81	24.61	23.06	87.36	102.07	120.86	118.20
	H.E.S.		29.06	26.81	20.48	15.60	87.36	102.07	120.86	118.20

Unemployed 65+ not shown because of marginal values

Old-age to working-age ratio / Economic Dependency Ratio (St.S. versus H.E.S.)

Old-age to working-age ratio / Economic Dependency Ratio (St.S. Versus H.E.S.)						
Ratios per 100 people of the reference group		2019	2030	2050	2070	2070/2019
Old-age to working-age ratio*		34.4	43.1	56.9	59.2	+71.8%
Economic dependency** ratio	St.S.	69.7	77.4	88.5	89.7	+28.6%
	H.E.S.	69.7	74.5	81.3	75.6	+8.4%

* people aged 65+ per 100 people aged 20-64

** pensioners and unemployed per 100 people in employment

Excursus – EU 2030+ Scenario

Compared to EU's recently fixed 78% employment rate target for 2030⁵¹, our High Employment Scenario with its assumed linear increase of the employment rate to 82% over the period 2019-2070 can be read as an extension in time, implying more moderate increase over the next two decades. Assuming a linear increase of the employment rate up to 82% in 2070 means that in the High Employment Scenario EU's 78% target for 2030 will be reached around 2050.

In order to also show the economic dependency ratio's development under the assumption of achieving EU's ambitious 2030 employment target, in Annex 2 to this study we add the calculation of an 'EU 2030+ Scenario'. Remarkable outcome: Realizing this scenario would neutralize any increase of the 'economic dependency ratio' over the period 2019 to 2040.

Main assumption: EU's 78% employment rate target will be achieved by 2030 and further, more moderate, progress is made between 2030 and 2040 to reach 80% employment rate by 2040.

ECONOMIC DEPENDENCY RATIO CALCULATIONS – COUNTRY CASES

Based on the same 2070 target assumptions and methodology as for EU 27, economic dependency ratio calculations have been also prepared for several Member States involved in the ETUC SociAll project.

As a consequence of large country differences both regarding the current state and projections on future demographic and labour market developments, the outcome of the calculations differs widely. However, there is one key common finding: Implementing a labour market strategy of 'upwards convergence' among those of working age would substantially contain the expected future increase of the economic dependency ratio, in some cases even reversing it.

Table 2: Economic dependency ratio calculations – EU 27 / Belgium / France / Italy / Germany / Austria / Bulgaria / Croatia (Standard Scenario versus High Employment Scenario)*

	2019	2030	2050	2070	Change 2070/2019
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⁵¹ EU Commission 2021, The European Pillar of Social Rights Action Plan

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EU27

Economic dependency ratio	St.S.	69.7	77.4	88.5	89.7	+ 28.6%
	H.E.S.	69.7	74.5	81.3	75.6	+ 8.4%
Old-age to working-age ratio		34.4	43.1	56.9	71.8	+ 71.8%

BELGIUM

Economic dependency ratio	St.S.	69.8	78.3	88.5	95.4	+ 36.8%
	H.E.S.	69.8	73.9	76.8	75.5	+ 8.3%
Old-age to working-age ratio		32.5	40.5	49.2	53.3	+ 64.0%

FRANCE

Economic dependency ratio	St.S.	86.0	94.6	100.1	101.6	+ 18.1%
	H.E.S.	86.0	91.0	88.9	79.6	- 7.4%
Old-age to working-age ratio		36.5	44.9	54.8	56.9	+ 56.0%

ITALY

Economic dependency ratio	St.S.	86.0	85.1	94.0	85.7	- 0.4%
	H.E.S.	86.0	82.2	85.0	66.8	- 22.3%
Old-age to working-age ratio		38.9	48.0	66.5	65.6	+ 68.8%

GERMANY

Economic dependency ratio	St.S.	61.3	73.9	80.5	82.3	+ 34.2%
	H.E.S.	61.3	71.1	76.4	77.1	+ 25.8%
Old-age to working-age ratio		36.1	46.4	52.8	54.6	+ 51.1%

AUSTRIA

Economic dependency ratio	St.S.	66.2	74.6	85.1	89.0	+ 34.5%
	H.E.S.	66.2	73.8	80.8	79.2	+ 19.7%
Old-age to working-age ratio		30.7	40.3	51.5	55.9	+ 82.3%

BULGARIA

Economic dependency ratio	St.S.	71.5	80.7	93.1	94.5	+ 32.2%
	H.E.S.	71.5	74.3	80.3	76.7	+ 7.3%
Old-age to working-age ratio		36.0	42.7	60.5	60.8	+ 68.8%

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CROATIA						
Economic dependency ratio	St.S.	88.3	97.9	103.7	113.9	+ 29.0%
	H.E.S.	88.3	90.8	89.8	88.4	+ 0.1%
Old-age to working-age ratio		34.8	44.5	57.2	64.6	85.6%

**) Underlying data and graphs – see Annex 1*

Comparing the evolution of the economic dependency ratios in Standard and High Employment Scenario reveals staggering results for almost all countries under scrutiny, such as reduction of the expected future 29% to almost 0% increase (2070/2019) in Croatia or reversal of the future evolution of this ratio from expected 18% increase to a 7% decrease in France. In Italy, the 2070 to 2019 comparison even in the Standard Scenario shows no ‚economic dependency ratio‘ increase, while the High Employment Scenario reveals 22% decrease!

Even in Germany, where LFS employment rates are already close to the 82% High Employment Scenario assumption, implementing this scenario would lead to a significant ‚economic dependency ratio‘ reduction, from 34% down to 26%. Furthermore, it has to be considered that in Germany among those recorded as employed in LFS data, there is a big share of so-called ‚mini-jobbers‘ (see Section 2), who neither contribute nor gain pension entitlements to a significant degree. An earlier similar study⁵², based on a more in-depth labour market analysis which allowed to exclude ‚mini-jobbers‘, for Germany too showed that the current level of the economic dependency ratio is significantly underestimated and that implementing a High Employment Strategy would have a huge potential to contain future increase of the ‚economic dependency ratio‘.

5. IMPACT OF LABOUR MARKETS ON PENSION ADEQUACY AND FISCAL SUSTAINABILITY

All pension systems in EU Member States – except pure residency-based schemes - are closely connected to the labour markets regarding

- pension entitlements of individuals
- the financing of pensions and
- long-term financial sustainability of the systems.⁵³

In this section, we provide an overview of quantitative links between labour markets and pension systems, mainly based on country examples. Supplementary means- or income-tested minimum pension schemes, such as the Swedish ‘guarantee pension’ or the Austrian ‘compensation supplement’, as well as occupational pensions⁵⁴ are only addressed in the context of financing or with regard to long-term sustainability issues.

First, by briefly presenting pension benefit calculation in four selected countries, we show that the acquisition of individual pension rights is, first and foremost, based on employment-related determinants such as number of years in employment, level of earnings or contribution paid as a percentage of wages. In order to keep it simple, we almost exclusively refer to public schemes for private sector employees.

Then, it is shown that contribution paid from wages or earned income is the key instrument for the financing of pensions both in defined-contribution (DC) and in defined-benefit (DB) schemes.

⁵² Türk E/Blank F/Logey C/Wöss J/Zwiener R (2018) See also: Wöss J/Türk E (2019)

⁵³ This is true both for pay-as-you-go financed and pre-funded systems. Nonetheless, because of much greater importance in European pension systems and a much greater role in the sustainability debate we primarily focus on pay-as-you-go. Yet, critically assessing the long-term sustainability of pre-funded systems against the background of highly volatile financial markets and persisting low interest rates would be an important task for further work.

⁵⁴ Among all variants of pension systems, occupational pensions are most closely connected to employment.

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Finally, against the background of population ageing and related concern about financial sustainability, we switch to long-term and intergenerational issues. Based on the outcome of the economic dependency ratio calculations in section 3 we show that improving the labour market integration of those of working age, indeed, is “the most effective strategy with which countries can prepare for population ageing”, even though the concrete scale of impacts in national systems can vary depending on legislation.⁵⁵

PENSION BENEFIT LEVEL – KEY ROLE OF PRECEDING EMPLOYMENT CAREER

Apart from very few residency-based systems, such as the basic pension in the Netherlands⁵⁶, both the eligibility to a pension and the amount of an individual's pension benefit are largely determined by preceding employment career. To show this we look at old-age pension calculation and indexing mechanisms in Belgium, Germany, Austria and Sweden.⁵⁷

In each of these countries, despite largely diverging rules on pension benefit calculation, the employment career is the most important determinant of the income replacement individuals receive during retirement. Social balancing mechanisms providing minimum pension top-ups for those in need and pension credits for assimilated periods such as unemployment or child-raising, only have a supplementary role.

Belgium

Public pensions for employees are calculated based on average lifetime salary, with revaluation of earlier years' earnings in line with prices. For the calculation, a ceiling to yearly earnings is applied (€ 55.657 / 2018).

A full pension is paid provided someone has 45 career years - it is 60% (75% in case the pensioner has a dependent spouse with no, or a low, pension income of their own) of gross average lifetime salary indexed in line with prices. Thus, the nominal annual accrual rate⁵⁸ is 1.33% (60%/45) or 1.67% (75%/45). As earlier years' earnings are revaluated only in line with prices, the effective accrual rate⁵⁹ is, depending on the average real wage growth, significantly lower (1.04% or 1.31%)⁶⁰.

Pension benefits are indexed in line with consumer prices too. Partial adaptations to wage developments are possible through the system of adjustment to living standards negotiated with the social partners.

Germany

Pension benefit calculation in Germany is based on average lifetime salary, implemented by an 'earning point'⁶¹ system. For each contribution year, the insured income is converted into 'earning points'.

⁵⁵ For instance, mechanisms of self-regulation as implemented in the German public pension insurance with the aim to limit contribution rates at a politically fixed level foresee that the development of the 'contributors to pensioners' ratio directly impacts on the valuation and indexation of pensions. Thus, the negative effect of the expected demography-driven deterioration of this ratio on the public pension budget is mainly absorbed by an 'automatic' reduction of the pension level, thereby implementing operating principles of defined contribution schemes. On the other hand, this mechanism leads to the situation that the gain of increasing employment rates will be partially passed on to pensioners in form of an additional raise of overall pension benefits.

⁵⁶ As the basic pension system is complemented by a strong occupational pension 'pillar', in the Netherlands too the preceding employment career is the key determinant of the overall pension income of most retirees.

⁵⁷ Information mainly extracted from: OECD (2019), *Pensions at a Glance (Country Profiles)*; EU Commission (2018), *The Pension Adequacy Report, Volume II – Country Profiles*

⁵⁸ Defined Benefit schemes normally specify a nominal accrual rate, expressed as a percentage of individual pensionable earnings, at which benefit entitlements build up for each year of coverage.

⁵⁹ The effective accrual rate measures the rate at which benefit entitlements are effectively built up for each year of coverage. It is closely connected to the (gross) replacement rates and can be calculated for all types of pension schemes. For DB schemes, it equals the nominal accrual rate corrected for the effects applying to pensionable earnings (e.g. valorisation of past earnings, sustainability factors).

⁶⁰ Based on the assumption, that real earnings grow by 1.25% per year on average, as assumed by the OECD for the calculation of pension entitlements of workers entering the labour market in 2018. See: OECD (2019), *Pensions at a Glance 2019*.

⁶¹ In German: 'Entgeltpunkte'

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Regardless of the contribution rate and therefore the contribution in Euro, a person receives one 'earning point' if his/her salary is equal to the official 'average wage'⁶² in the same year. Lower or higher salary lead to proportionally lower or higher 'earning points'. Insurable salary and the maximum achievable 'earning points' are limited to an annual ceiling (€ 78.000 / 2018).

At retirement, all 'earning points' collected during lifetime are summed up and multiplied by the 'current pension value', which applies to both newly retired and already retired persons. The 'current pension value' is adjusted annually on first of July by an indexation formula, which is based on gross salary growth adjusted by the 'contribution factor' and the 'sustainability factor'.⁶³

In 2018, one pension point was valued at € 31.53 (Germany West, annual average), leading to an annual effective accrual rate of 0.99%.⁶⁴

Austria

Since 2005, Austria has a defined-benefit pension account system. The pension benefit annually accrues at 1.78% (nominal annual accrual rate) of insured income. Pensions credits acquired are accounted in individual pension accounts with the Statutory Pension Insurance and indexed in line with wage growth. As there is no indexation of acquired pension credits in the year of retirement, the effective annual accrual rate is about 1.74%⁶⁵. Pensionable earning are limited to an annual ceiling (€ 71.820 / 2018).

During retirement, pension benefits are indexed in line with consumer prices. However, in most recent years, pension indexation was fixed in special acts, foreseeing higher indexation for low and lower indexation for higher pensions.

Sweden

In the late 1990's, Sweden introduced a strict defined-contribution pension account system. It consists of two components, the pay-as-you-go financed 'income pension' and the pre-funded 'premium pension'. The 'income pension' is referred to as a notional defined-contribution (NDC) scheme. Lifetime contributions are the key basis for calculating pension benefits in both systems. Contributions are paid as a percentage of wages not exceeding the ceiling of pensionable earnings (skr 468.750 resp. € 46.180 / 2018).⁶⁶

Until retirement, annual contribution paid to the 'income pension' is credited in the individuals' pension accounts with the Swedish Pensions Agency and indexed annually to an 'income index' based on average wage growth adjusted by a 'balance mechanism'. At retirement, notional assets in the individual account are converted to an annuity. The 'annuity divisor' depends on individual retirement age and the expected remaining unisex life expectancy for each cohort. Pensions are uprated with the increase in nominal average earnings less the imputed interest rate of 1.6%. The indexation of pensions is also adjusted by the 'balance mechanism'.

In the pre-funded 'premium pension' contributors can choose between different investment options. Apart from the volume of lifetime contributions (and further life expectancy), the amount of pension benefits largely depends on return on (and costs of) investment.

⁶² The used average wage is not statistically determined but a yearly updated historical given value.

⁶³ These factors aim to restrict pension spending in order to limit the increase of the contribution rate, so that the contribution rate should not exceed a politically determined upper limit. Therefore, the German 'point system' has similarity to DC schemes.

⁶⁴ Blank F/Türk E (2017). As a result of pension reform already adopted, for today's entrants to the labour market the accrual rate is expected to decrease to 0.83%.

⁶⁵ Blank F, Türk E (2017)

⁶⁶ Employers have to pay an additional tax on earnings above the ceiling at the same percentage as their pension contribution.

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Income replacement rates

OECD's theoretical replacement rate calculations⁶⁷ for today's labour market entrants show remarkable differences with regard to the generosity of pension systems. The figures below refer to 'base case' (full career) calculations, assuming labour market entry in 2018 at age 22, constant earnings at average earnings level⁶⁸ and retirement at national legal retirement age. For several EU Member States, the 'base case' theoretical replacement rates clearly indicate substantial pension adequacy gaps even for workers with full employment careers.

In Table 3, in order to allow some comparison, only EU Member States with legal retirement ages ranging from 65 to 67 are included.⁶⁹ Expected replacement rates provided by pre-funded supplementary pension schemes⁷⁰ are included as far as the schemes are mandatory.⁷¹

Table 3: (Theoretical) Pension replacement rates for workers with uninterrupted employment career from age 22 until legal retirement age; constant average earnings; labour market entry in 2018

	Retirement age	Gross replacement rate	Net replacement rate*
		Mandatory schemes	
Austria	65	76.5%	89.9%
Hungary	65 (m)	56.1%	84.3%
Spain	65	72.3%	83.4%
France	66	60.1%	73.6%
Belgium	67	46.8%	66.2%
Latvia	65	44.6%	54.3%
Sweden	65	54.1%	53.4%
Germany	67	38.7%	51.9%
Czech Republic	65	45.9%	37.3%
Poland	65 (m)	29.4%	35.1%
Lithuania	65	23.6%	31.0%

*Source: OECD (2019), Pensions at a Glance. Tables 5.3., 5.5. *) Ratio of pensions to individual earnings, taking account of taxes and contributions.*

OECD's alternative calculations for individuals with interrupted careers, later labour market entry, etc. clearly show the major importance of employment in all these pension systems.⁷² For example, average wage earners with late labour market entry (at 27) and a 10-year unemployment break experience

⁶⁷ OECD (2019), Pensions at a Glance, Chapter 5

⁶⁸ As employment careers are modelled as constant relative income position, gross replacement of average lifetime pay equals the replacement of last wage.

⁶⁹ In OECD's Pensions at a Glance calculations, underlying legal retirement ages vary among EU Member States between 62 in Luxembourg, Greece and Slovenia and 74 (!) in Denmark

⁷⁰ The OECD calculations of future replacement rates provided by pre-funded schemes are based on optimistic 3% average real rate of investment return assumption over the next few decades. Against the background of lasting low interest rates, the EU Commission in its Ageing Report 2021 (Underlying Assumptions & Projection Methodologies) has reduced its former 3% assumption to 2%.

⁷¹ OECD also calculates expected replacement rates including supplementary schemes with "broad coverage". Among the countries listed in Table 3 supplementary schemes fulfilling this condition exist in Belgium and in Germany. The total net replacement rates, also taking into account such schemes, are 72.4% in Belgium and 68.0% in Germany. As a substantial share of the people in employment are not covered, these values have to be considered with caution.

⁷² Pension reforms that shift the calculation base to life-time earnings (as implemented in many countries) further reinforce the importance of the employment career on pension benefit entitlements.

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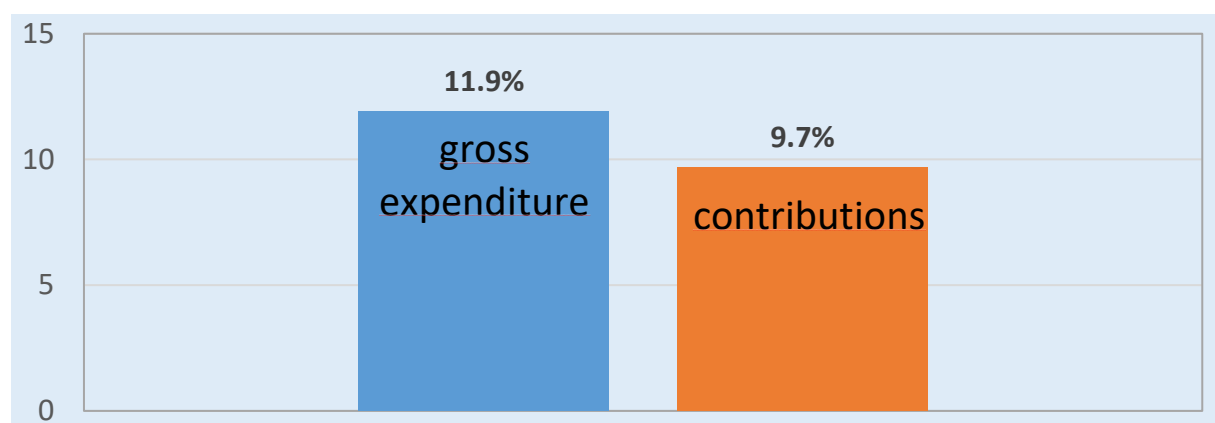
replacement rate reductions ranging, among the countries listed in Table 3, from minus 15% in Czech Republic and Spain to more than minus 30% in Poland and in Lithuania.⁷³

These figures clearly indicate the crucial importance of combating labour market shortcomings and improving employment integration throughout working age in order to achieve the European Pillar of Social Rights' pension adequacy goals. Furthermore, in EU Member States where today's young people even under the assumption of full employment careers only can expect extremely low net income replacement rates (very likely in many cases below the at-risk-of-poverty line) reconsideration of pension reforms implemented will be necessary.

FINANCING OF PENSIONS – KEY ROLE OF CONTRIBUTION FROM LABOUR INCOME

According to the EU Commission's Ageing Report 2018, in 2016 11.9% of GDP was spent on public pensions in EU 27. On the other hand, revenue collected through contributions amounted to 9.7% of GDP.

Figure 18: EU 27 - Public pension expenditure / Contribution revenue (% of GDP, 2016)



Source: EU Commission, *The 2018 Ageing Report, Economic and Budgetary Projections*, p 367

The overwhelming majority of contribution revenue is collected as a percentage of labour income⁷⁴. Contribution coming from other sources, such as contribution paid out of state pockets for periods of child-care, only play a minor role.

Figure 19 shows significant differences among EU Member States with regard to contribution rates to pension schemes. Main reasons for that diversity:

- widely differing generosity (see above – replacement rates)
- widely differing range of benefits provided (e.g. both old age, disability and survivors' pensions in some countries, but only old age pensions in other countries)
- widely differing shares of additional tax financing (while in some countries financing is nearly exclusively based on contribution, others have substantial additional tax financing; only in Denmark financing via contributions has no relevant role in the financing of public pensions⁷⁵)

⁷³ OECD (2019), *Pensions at a Glance*, Figure 5.13.

⁷⁴ The term 'labour income' comprises both income from work of employees and self-employed.

⁷⁵ In Denmark only occupational pensions are financed through contribution from labour income.

Figure 19: Mandatory pension contribution rates - effective rates on average earnings (2018)



OECD (2019), *Pensions at a Glance*, table 8.1. (employees + employers)

Ultimately, almost all financing of pensions is based on earnings through employment, be it directly via the paying of contributions or, as far as systems are (co)financed by taxes, more indirectly via contributing to state revenue by paying income tax.

Even the functioning of pre-funded systems, with about 50 trillion US-\$ pension assets in retirement savings plans in the OECD area⁷⁶, apart its close linkage to the development of international financial markets, largely depends on continuing payment of (enormous amounts of) contribution, mainly collected from labour income.

Overall, it is obvious that employment, both in quantitative and in qualitative terms (number of those in employment / level of pay), to a huge extent determines the financing of pensions.

FINANCIAL SUSTAINABILITY OF PENSION SYSTEMS — KEY ROLE OF GOOD EMPLOYMENT INTEGRATION

For decades, disputes on how to ensure long-term financing and adequacy of public pension benefits in the context of massive population ageing are in the center of discussion of social policies.

Statements, such as praising projected decline of the GDP share for public spending on pensions⁷⁷ against the background of expected massive increase of older people in total population, raise fundamental questions of intergenerational fairness at the expense of today's youth.

As shown in section 3 the re-interpretation of demographic data plays a substantial role in this context. What, besides productivity, income growth and fair distribution of acquired wealth, ultimately counts much more than the numerical relationship between age groups is the ratio between benefit recipients and contributors.

The 'economic dependency ratio' and the level of benefits (in relation to earned income) determines the share of (national) income needed for financing pensions and unemployment benefits. Or, the other way round, given a certain share of national income put aside for the financing of these transfers, the lower the economic dependency ratio the higher the affordable level of transfers. Labour markets and both adequacy and sustainability of pension systems are closely connected.

⁷⁶ OECD (2020), *Pension Markets in Focus*. In most countries, more than 50% of pension assets are now held in defined-contribution plans. Yet, in some large pension markets defined-benefit plans still have large prominence such as in Switzerland (89% of all pension assets).

⁷⁷ EU Commission (2020), *Report on the impact of demographic change*: „Thanks [!] to the impact of substantial reforms of pension systems in most Member States, [expenditure for public pensions] is projected to grow more slowly than GDP“ – COM(2020) 241, p 21

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Better labour market integration and therefore enhanced participation in primary distribution of income directly promote fiscal sustainability by expanding the financing base and reducing transfer needs. People getting fair earned income are no longer in need of unemployment benefits, labour market related early retirement pensions etc.

On the other hand more continuous careers in good jobs, instead of being unemployed or out of labour force or earning only marginal income, will increase future individual pension entitlements particularly among the most vulnerable groups with, at present, frequent career interruptions and/or low earnings (people with low education level, women, migrants etc.). Thus, better labour market integration improves pension adequacy and reduces old-age poverty without jeopardizing fiscal sustainability.⁷⁸

In other words, on the one hand it's about baking a bigger cake and getting more people directly involved in baking this bigger cake and receiving their fair share of it. On the other hand, an inclusive strategy of better labour market integration also reduces the number of people in need of transfers, allowing individual bigger pieces.

Unfortunately, many policy recommendations on how to cope with population ageing do not consider this to the necessary extent. Instead, without taking much notice of the huge potential for increasing the number of contributors and decreasing the number of those in need of income replacement benefits via better employment integration throughout working age, raising the age limit between working age and retirement age is presented as the key option, at least if massive further reduction of pension benefits or massive increase of contribution rates for those in employment should be avoided.⁷⁹ In this sense, the EU Commission's recently published Green Paper on Ageing states: "Longer working lives are a key answer. ... The old-age dependency ratio would only remain at the same level as in 2020 if working life were extended to the age of 70."⁸⁰

As shown with the 'EU 2030+ Scenario' (see Annex 2) "the real issue", i.e. the ratio 'unemployed plus pensioners relative to people in employment' could be stabilised until 2040 by implementing a very different strategy, by achieving EU's 2030 employment target and some further, more moderate, increase of the employment rate between 2030 and 2040.

The study clearly shows that there is an urgent need to rethink the understanding of sustainability and the use of related indicators:

- Against the background of massive population ageing, intergenerational fairness requires political acceptance of some future increase (within reasonable limits) of the GDP share for older people's needs, including pensions, health care and long-term care.
- Indicators referring to the economic status of people (across all ages) instead of only age have to be put to the fore both in analysing societal developments and in policy advice.
- In order to ensure pension adequacy and financial sustainability also for today's youth an integrated strategy of labour market and pension policy is needed. As pension system across Europe already experienced comprehensive reforms (some of these reforms even went far to far and should be reconsidered), it is time now to focus on inclusive labour markets, i.e. on a labour market strategy of 'more and better jobs'.

Realizing a labour market strategy of 'upwards convergence' could substantially contain further increase of the economic dependency ratio, thereby substantially alleviating the financial burden of ageing and, furthermore, aiding the basic purpose of pension systems: to deliver adequate retirement incomes.

⁷⁸ Furthermore, as these positive impacts on pensions will occur with a significant time lag smoothing the increase and reducing peaks of pension expenses would also ease financial feasibility.

⁷⁹ Also this is driven by assuming in typical macroeconomic models that employment rate and pensioner rate is a given share of each single vintage below and beyond retirement age. Thus, higher retirement age leads simultaneously to more employed and fewer drawing benefits with no regard to labour market realities and fundamental economics.

⁸⁰ EU Commission (2021a), p 12/13

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Broader and better participation in the labour market is not just the best response to the demographic challenge and pensions issues: it is also a major factor driving economic growth, fiscal sustainability⁸¹ and citizen's well-being.

⁸¹ See Türk E/Wöss J/Zuleeg F (2012)

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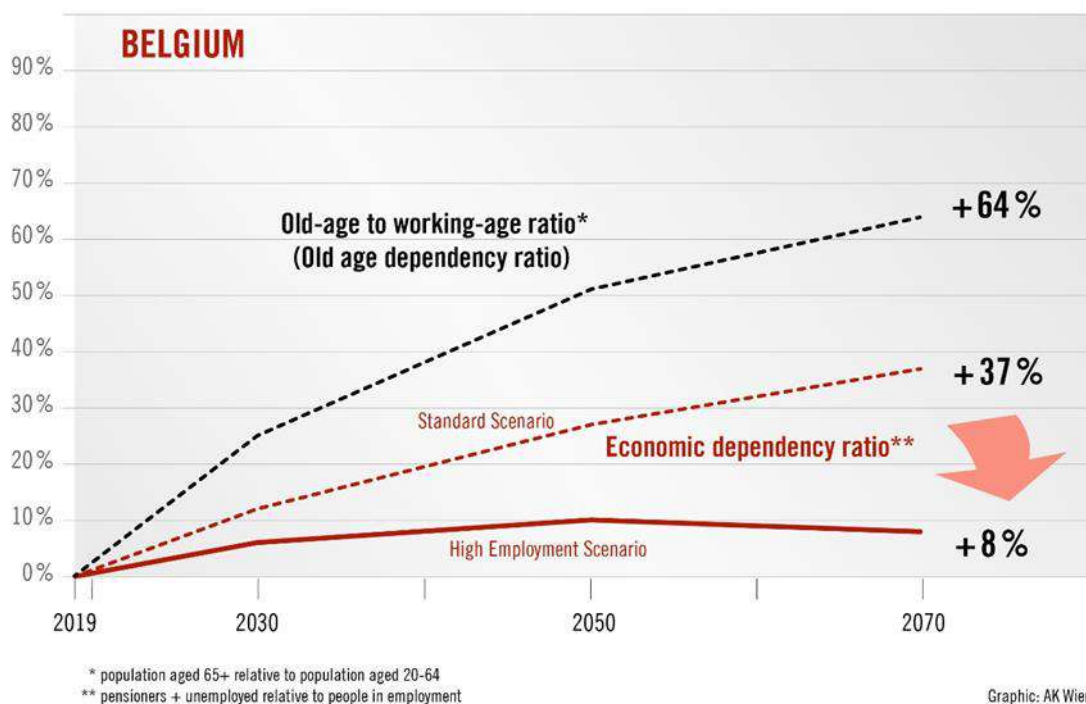
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ANNEX 1: 'ECONOMIC DEPENDENCY RATIO' CALCULATION – COUNTRY CASES



Belgium

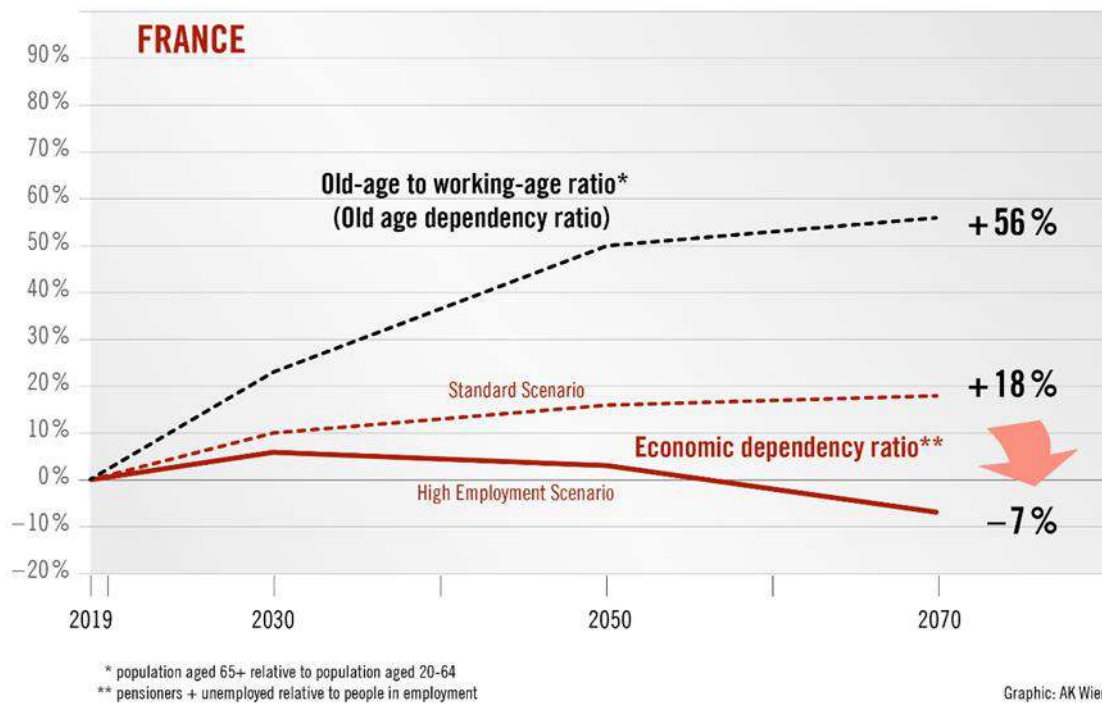
people in millions			Age 20-64				Age 65+			
			2019	2030	2050	2070	2019	2030	2050	2070
Population			6,72	6,61	6,39	6,21	2,19	2,68	3,14	3,31
People in employment	empl. rate	St.S.	70,6%	71,6%	71,2%	70,9%				
		H.E.S.	70,6%	72,9%	77,4%	82,0%				
	employed	St.S.	4,75	4,73	4,55	4,40	0,05	0,14	0,14	0,14
		H.E.S.	4,75	4,82	4,95	5,09	0,05	0,14	0,14	0,14
Unemployed (extended)	unempl. Rate (% of LF)	St.S.	8,7%	10,4%	10,4%	10,4%				
		H.E.S.	8,7%	7,6%	5,3%	3,0%				
	unemployed	St.S.	0,44	0,53	0,51	0,50				
		H.E.S.	0,44	0,38	0,27	0,16				
Pensioners			Age -64				Age 65+			
	St.S.		0,77	0,68	0,48	0,47	2,14	2,61	3,16	3,36
	H.E.S.		0,77	0,68	0,48	0,43	2,14	2,61	3,16	3,36

Unemployed 65+ not shown because of marginal values

Old-age to working-age ratio / Economic Dependency Ratio (St.S. versus H.E.S.)

Old-age to working-age ratio, Economic Dependency Ratio, Gender Variant Ratio						
Ratios per 100 people of the reference group		2019	2030	2050	2070	2070/2019
Old-age to working-age ratio (65+/20-64)		32,5	40,5	49,2	53,3	64,0%
Economic dependency ratio	St.S.	69,8	78,3	88,5	95,4	36,8%
	H.E.S.	69,8	73,9	76,8	75,5	8,3%

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France

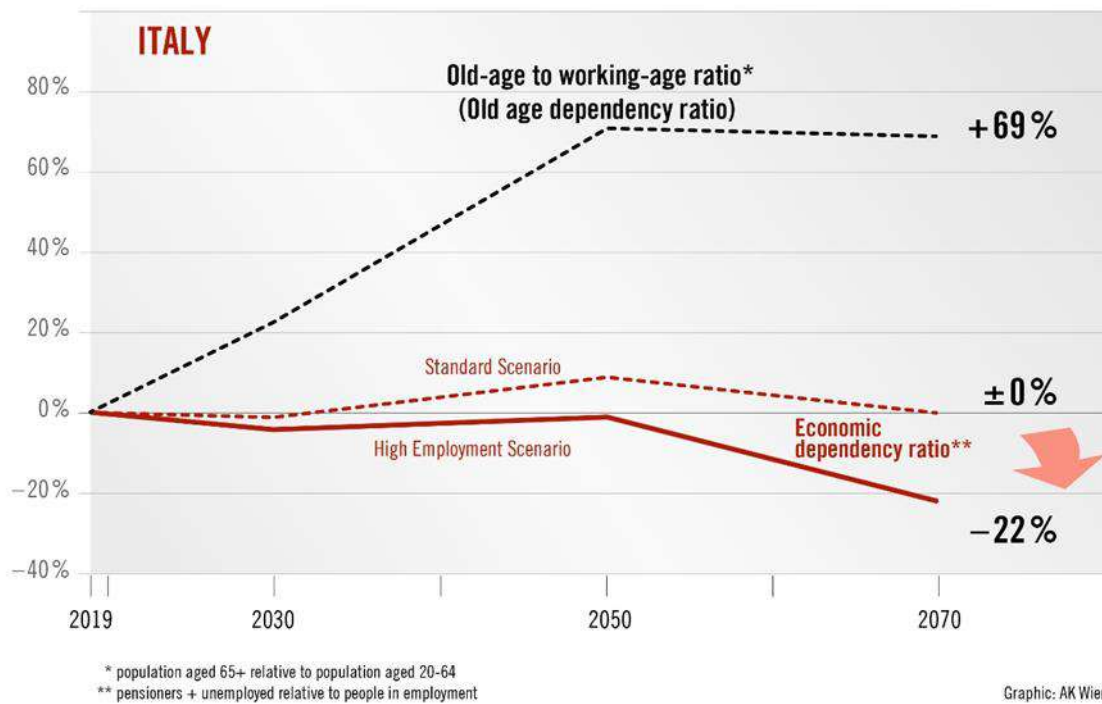
people in millions			Age 20-64				Age 65+			
			2019	2030	2050	2070	2019	2030	2050	2070
Population			37,33	36,91	35,51	35,05	13,61	16,56	19,44	19,94
People in employment	empl. rate	St.S.	71,6%	72,4%	74,6%	74,5%				
		H.E.S.	71,6%	73,7%	77,8%	82,0%				
	employed	St.S.	26,73	26,72	26,49	26,11	0,40	0,69	1,10	1,11
		H.E.S.	26,73	27,19	27,64	28,74	0,40	0,69	1,10	1,11
Unemployed (extended)	unempl. Rate (% of LF)	St.S.	11,8%	11,7%	9,8%	9,8%				
		H.E.S.	11,8%	10,0%	6,5%	3,0%				
	unemployed	St.S.	3,44	3,40	2,76	2,77				
		H.E.S.	3,44	2,94	1,89	0,88				
Pensioners			Age -64				Age 65+			
	St.S.		5,73	5,35	4,83	4,46	14,15	17,15	20,00	20,40
	H.E.S.		5,73	5,25	3,63	2,47	14,15	17,15	20,00	20,40

Unemployed 65+ not shown because of marginal values

Old-age to working-age ratio / Economic Dependency Ratio (St.S. versus H.E.S.)

Ratios per 100 people of the reference group		2019	2030	2050	2070	2070/2019
Old-age to working-age ratio (65+/20-64)		36,5	44,9	54,8	56,9	56,0%
Economic dependency ratio	St.S.	86,0	94,6	100,1	101,6	18,1%
	H.E.S.	86,0	91,0	88,9	79,6	-7,4%

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Italy

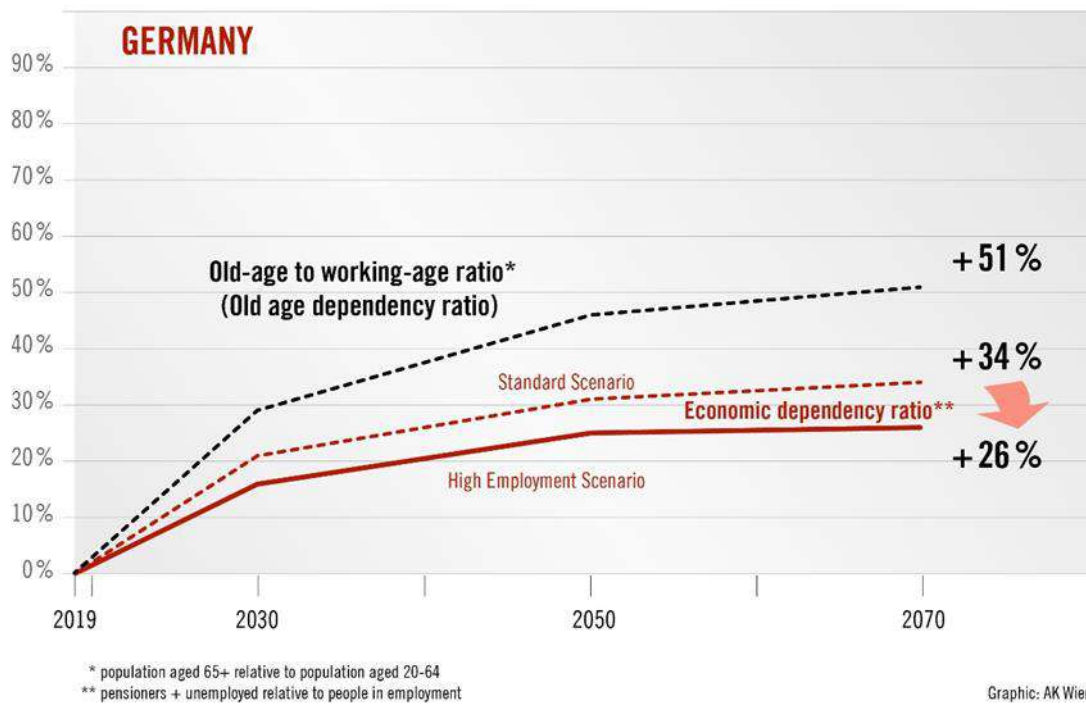
people in millions			Age 20-64				Age 65+			
			2019	2030	2050	2070	2019	2030	2050	2070
Population			35,66	34,05	29,40	27,37	13,87	16,36	19,56	17,97
People in employment	empl. rate	St.S.	63,6%	66,3%	69,4%	69,8%				
		H.E.S.	63,6%	67,3%	74,6%	82,0%				
	employed	St.S.	22,68	22,58	20,40	19,11	0,58	1,47	1,75	2,20
		H.E.S.	22,68	22,91	21,95	22,45	0,58	1,47	1,75	2,20
Unemployed (extended)	unempl. Rate (% of LF)	St.S.	21,2%	19,3%	14,9%	14,7%				
		H.E.S.	21,2%	17,5%	10,3%	3,0%				
	unemployed	St.S.	5,32	4,79	3,24	3,02				
		H.E.S.	5,32	4,37	2,37	0,68				
Pensioners			Age -64				Age 65+			
	St.S.		2,01	1,57	0,86	0,69	12,63	14,05	16,68	14,49
	H.E.S.		2,01	1,57	0,86	0,69	12,63	14,05	16,87	15,03

Unemployed 65+ not shown because of marginal values

Old-age to working-age ratio / Economic Dependency Ratio (St.S. versus H.E.S.)

Ratios per 100 people of the reference group		2019	2030	2050	2070	2070/2019
Old-age to working-age ratio (65+/20-64)		38,9	48,0	66,5	65,6	68,8%
Economic dependency ratio	St.S.	86,0	85,1	94,0	85,7	-0,4%
	H.E.S.	86,0	82,2	85,0	66,8	-22,3%

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Germany

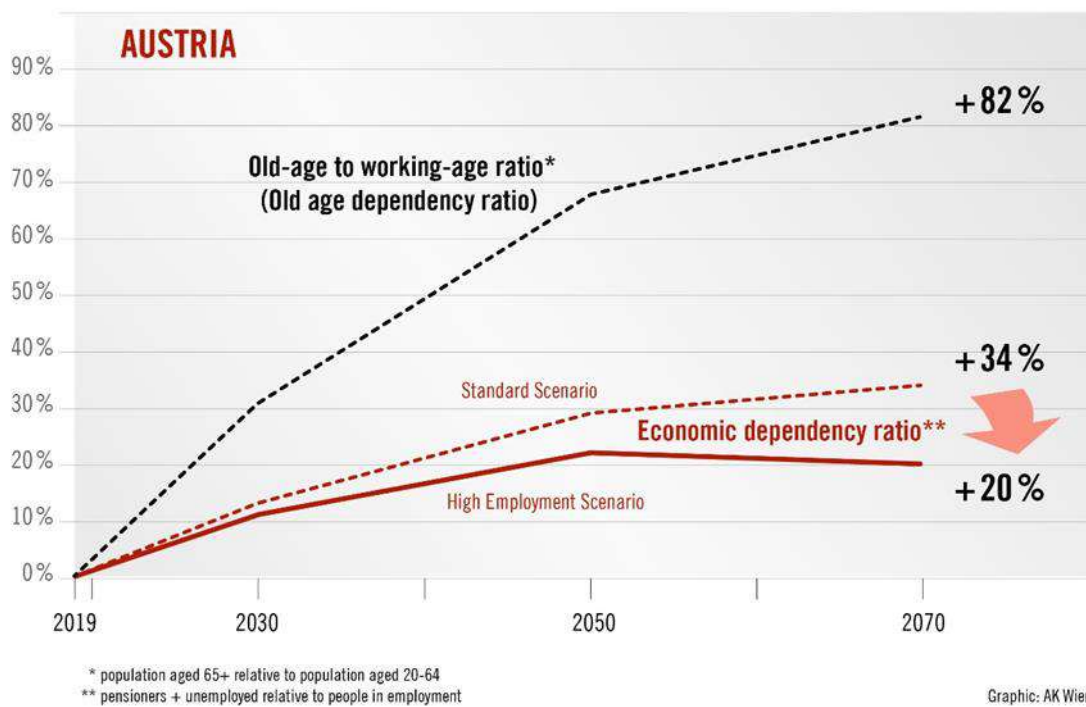
people in millions			Age 20-64				Age 65+			
			2019	2030	2050	2070	2019	2030	2050	2070
Population			49,77	46,08	43,88	42,54	17,99	21,38	23,18	23,23
People in employment	empl. rate	St.S.	80,6%	80,0%	80,4%	80,7%				
		H.E.S.	80,6%	80,9%	81,4%	82,0%				
	employed	St.S.	40,11	36,86	35,28	34,33	1,18	2,03	1,75	1,66
		H.E.S.	40,11	37,27	35,74	34,88	1,18	2,03	1,75	1,66
Unemployed (extended)	unempl. Rate (% of LF)	St.S.	5,2%	6,7%	6,9%	6,9%				
		H.E.S.	5,2%	4,8%	3,9%	3,0%				
	unemployed	St.S.	2,17	2,63	2,58	2,50				
		H.E.S.	2,17	1,84	1,43	1,07				
Pensioners			Age -64				Age 65+			
	St.S.		3,02	2,84	2,52	2,37	20,11	23,25	24,71	24,71
	H.E.S.		3,02	2,84	2,52	2,37	20,11	23,25	24,71	24,71

Unemployed 65+ not shown because of marginal values

Old-age to working-age ratio / Economic Dependency Ratio (St.S. versus H.E.S.)

Ratios per 100 people of the reference group		2019	2030	2050	2070	2070/2019
Old-age to working-age ratio (65+/20-64)		36,1	46,4	52,8	54,6	51,1%
Economic dependency ratio	St.S.	61,3	73,9	80,5	82,3	34.2%
	H.E.S.	61,3	71,1	76,4	77,1	25.8%

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Austria

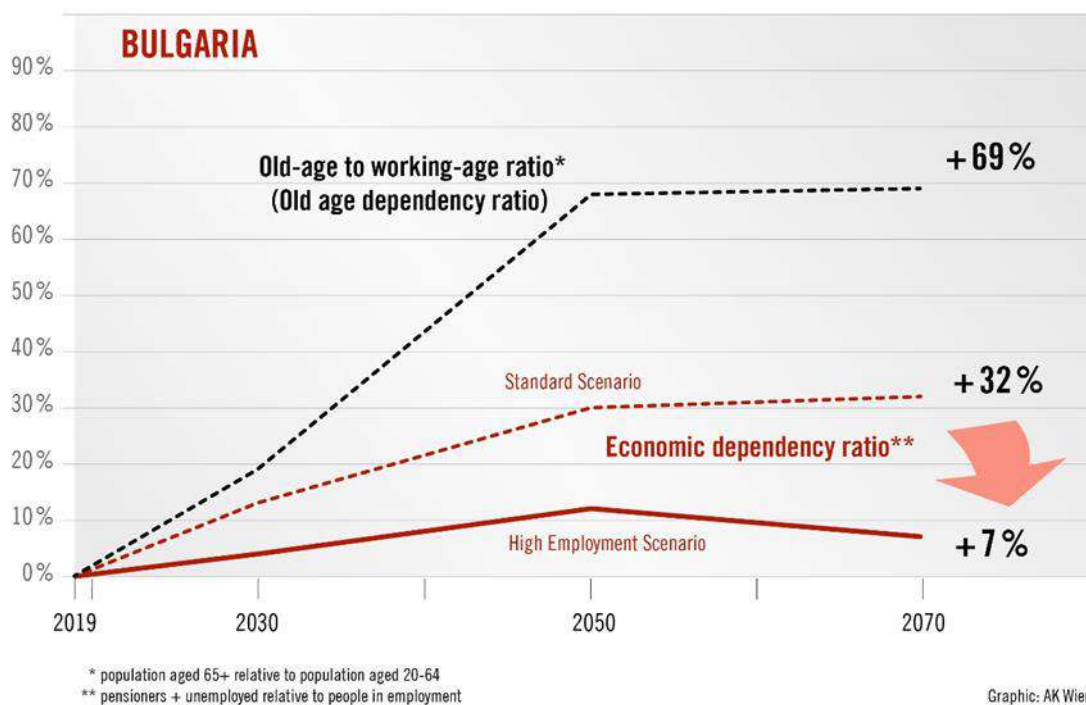
people in millions			Age 20-64				Age 65+			
			2019	2030	2050	2070	2019	2030	2050	2070
Population			5,48	5,27	5,05	4,84	1,68	2,13	2,60	2,70
People in employment	empl. rate	St.S.	76,8%	77,5%	79,2%	79,5%				
		H.E.S.	76,8%	77,8%	79,9%	82,0%				
	employed	St.S.	4,21	4,08	4,00	3,85	0,06	0,10	0,11	0,11
		H.E.S.	4,21	4,10	4,03	3,97	0,06	0,10	0,11	0,11
Unemployed (extended)	unempl. Rate (% of LF)	St.S.	8,1%	7,5%	7,5%	7,5%				
		H.E.S.	8,1%	7,0%	5,0%	3,0%				
	unemployed	St.S.	0,35	0,32	0,32	0,30				
		H.E.S.	0,35	0,30	0,21	0,12				
Pensioners			Age -64				Age 65+			
	St.S.		0,68	0,62	0,52	0,44	1,79	2,18	2,66	2,77
	H.E.S.		0,68	0,62	0,48	0,33	1,79	2,18	2,66	2,77

Unemployed 65+ not shown because of marginal values

Old-age to working-age ratio / Economic Dependency Ratio (St.S. versus H.E.S.)

Ratios per 100 people of the reference group		2019	2030	2050	2070	2070/2019
Old-age to working-age ratio (65+/20-64)		30,7	40,3	51,5	55,9	82,3%
Economic dependency ratio	St.S.	66,2	74,6	85,1	89,0	34,5%
	H.E.S.	66,2	73,8	80,8	79,2	19,7%

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Bulgaria

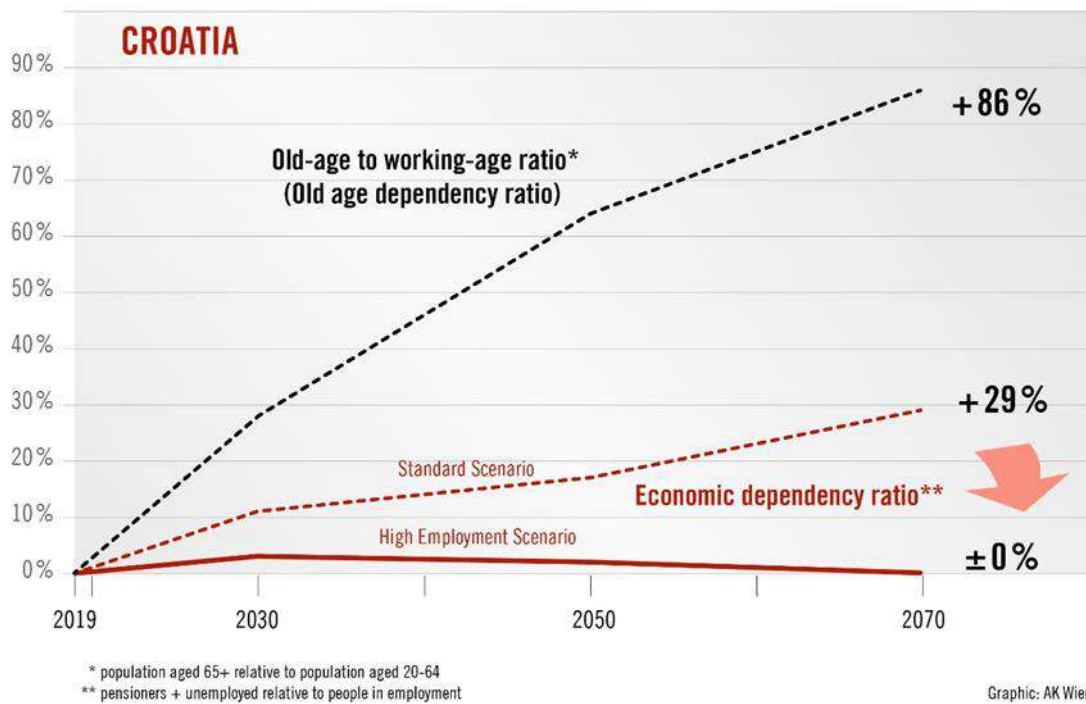
people in millions			Age 20-64				Age 65+			
			2019	2030	2050	2070	2019	2030	2050	2070
Population			4,16	3,66	2,87	2,56	1,50	1,56	1,74	1,56
People in employment	empl. rate	St.S.	75,2%	73,3%	73,0%	73,5%				
		H.E.S.	75,2%	76,6%	79,3%	82,0%				
	employed	St.S.	3,13	2,68	2,10	1,88	0,09	0,11	0,12	0,09
		H.E.S.	3,13	2,80	2,28	2,10	0,09	0,11	0,12	0,09
Unemployed (extended)	unempl. Rate (% of LF)	St.S.	7,6%	9,4%	9,6%	9,6%				
		H.E.S.	7,6%	6,7%	4,8%	3,0%				
	unemployed	St.S.	0,25	0,27	0,21	0,19				
		H.E.S.	0,25	0,19	0,11	0,06				
Pensioners			Age -64				Age 65+			
	St.S.		0,51	0,48	0,35	0,25	1,53	1,51	1,50	1,42
	H.E.S.		0,51	0,46	0,31	0,19	1,53	1,51	1,50	1,42

Unemployed 65+ not shown because of marginal values

Old-age to working-age ratio / Economic Dependency Ratio (St.S. versus H.E.S.)

Ratios per 100 people of the reference group		2019	2030	2050	2070	2070/2019
Old-age to working-age ratio (65+/20-64)		36,0	42,7	60,5	60,8	68,8%
Economic dependency ratio	St.S.	71,5	80,7	93,1	94,5	32,2%
	H.E.S.	71,5	74,3	80,3	76,7	7,3%

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Croatia

people in millions			Age 20-64				Age 65+			
			2019	2030	2050	2070	2019	2030	2050	2070
Population			2,43	2,17	1,79	1,53	0,85	0,96	1,02	0,99
People in employment	empl. rate	St.S.	66,8%	68,2%	69,6%	69,6%				
		H.E.S.	66,8%	69,8%	75,9%	82,0%				
	employed	St.S.	1,63	1,48	1,24	1,07	0,02	0,03	0,04	0,03
		H.E.S.	1,63	1,51	1,36	1,26	0,02	0,03	0,04	0,03
Unemployed (extended)	unempl. Rate (% of LF)	St.S.	13,1%	15,8%	13,7%	13,7%				
		H.E.S.	13,1%	11,1%	7,0%	3,0%				
	unemployed	St.S.	0,23	0,25	0,18	0,16				
		H.E.S.	0,23	0,18	0,10	0,04				
Pensioners			Age -64				Age 65+			
	St.S.		0,32	0,22	0,15	0,13	0,90	1,00	1,00	0,97
	H.E.S.		0,32	0,22	0,15	0,12	0,90	1,00	1,00	0,99

Unemployed 65+ not shown because of marginal values

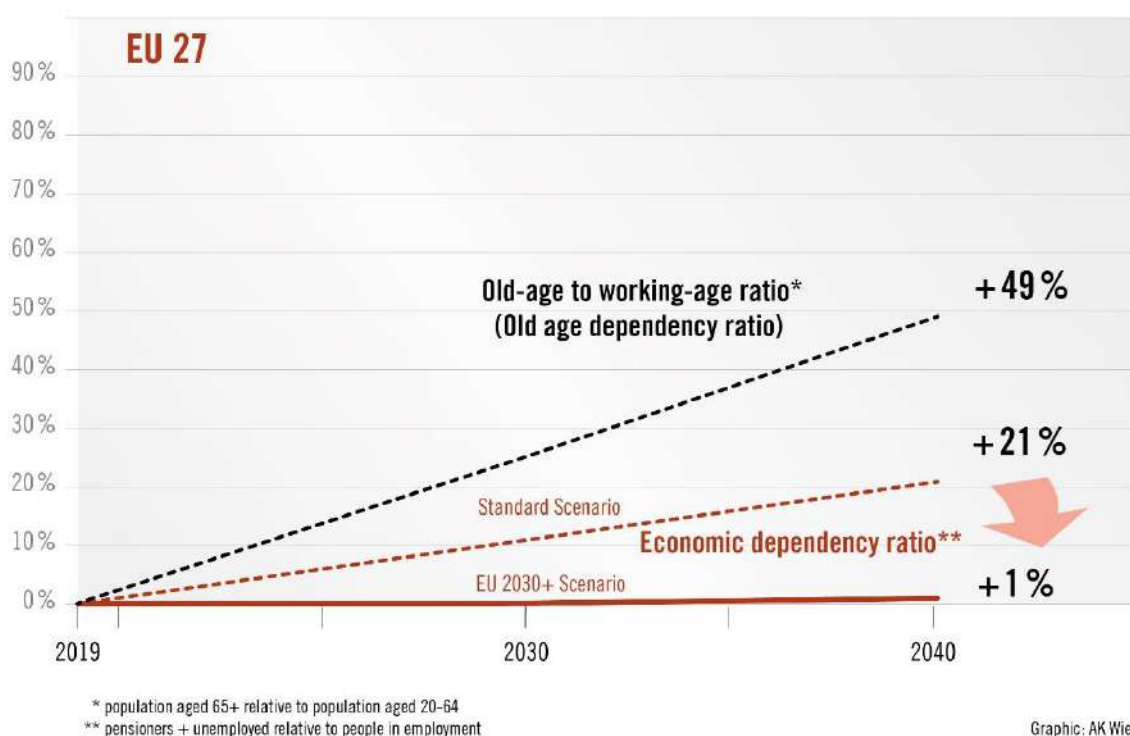
Old-age to working-age ratio / Economic Dependency Ratio (St.S. versus H.E.S.)

Ratios per 100 people of the reference group		2019	2030	2050	2070	2070/2019
Old-age to working-age ratio (65+/20-64)		34,8	44,5	57,2	64,6	85,6%
Economic dependency ratio	St.S.	88,3	97,9	103,7	113,9	29,0%
	H.E.S.	88,3	90,8	89,8	88,4	0,1%

ANNEX 2 'ECONOMIC DEPENDENCY RATIO' CALCULATION - EU 2030+ SCENARIO

Main assumptions:

- EU Kommission's 2030 employment rate target for EU 27 (78% in age group 20-64)⁸² will be achieved and some further, more moderate, progress will be made over the next decade to reach 80% employment rate by 2040
- Unemployment and labour market related early retirement pensions will decrease in line with increasing employment



⁸² EU Commission (2021d)

EU 2030+ Scenario – Key data

EU27 Standard versus 2030 plus Scenario

people in millions			Age 20-64			Age 65+		
			2019	2030	2040	2019	2030	2040
Population			265,02	253,52	240,78	91,28	109,37	123,66
People in employment	empl. rate	St.S.	73,1%	74,0%	75,0%			
		2030 plus	73,1%	78,0%	80,0%			
	employed	St.S.	193,73	187,61	180,59	4,56	8,00	9,18
		2030 plus	193,73	197,75	192,62	4,56	8,00	9,18
Unemployed (extended)	unempl. rate	St.S.	10,6%	11,2%	10,1%			
		2030 plus	10,6%	8,4%	4,0%			
	unemployed	St.S.	21,71	22,39	19,34			
		2030 plus	21,71	17,53	7,90			
Pensioners			Age -64			Age 65+		
	St.S.		29,06	26,81	25,74	87,36	102,07	114,31
	2030 plus		29,06	23,24	19,30	87,36	102,07	114,31

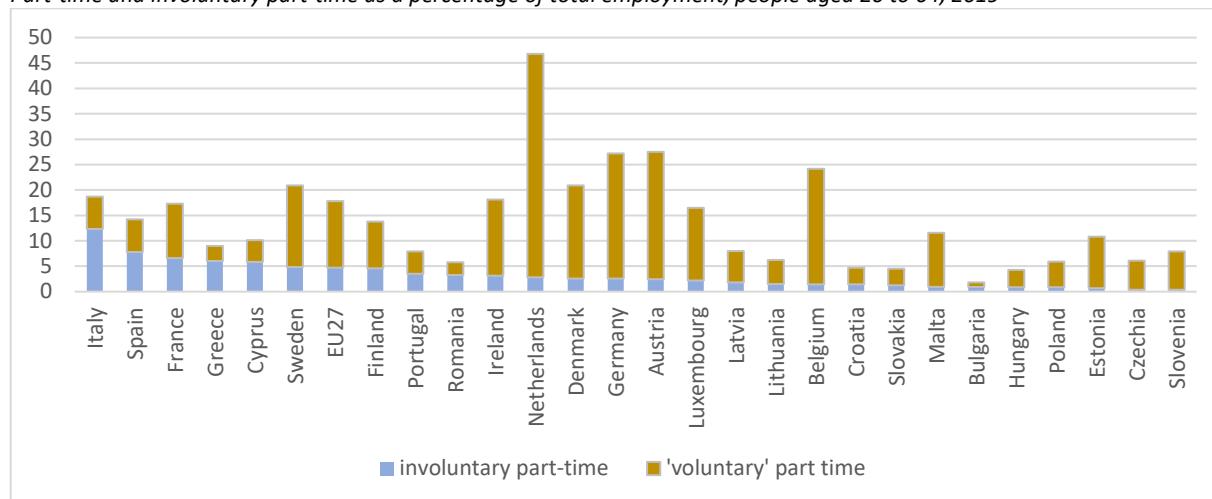
Unemployed 65+ not shown because of marginal values

Old-age to working-age ratio / Economic Dependency Ratio (St.S. versus EU 2030 plus S.)

Ratios per 100 people of the reference group		2019	2030	2040	2040/2019
Old-age to working-age ratio (65+/20-64)		34,4	43,1	51,4	49,1%
Economic dependency ratio	St.S.	69,7	77,4	84,1	20,7%
	2030 plus	69,7	69,5	70,2	0,8%

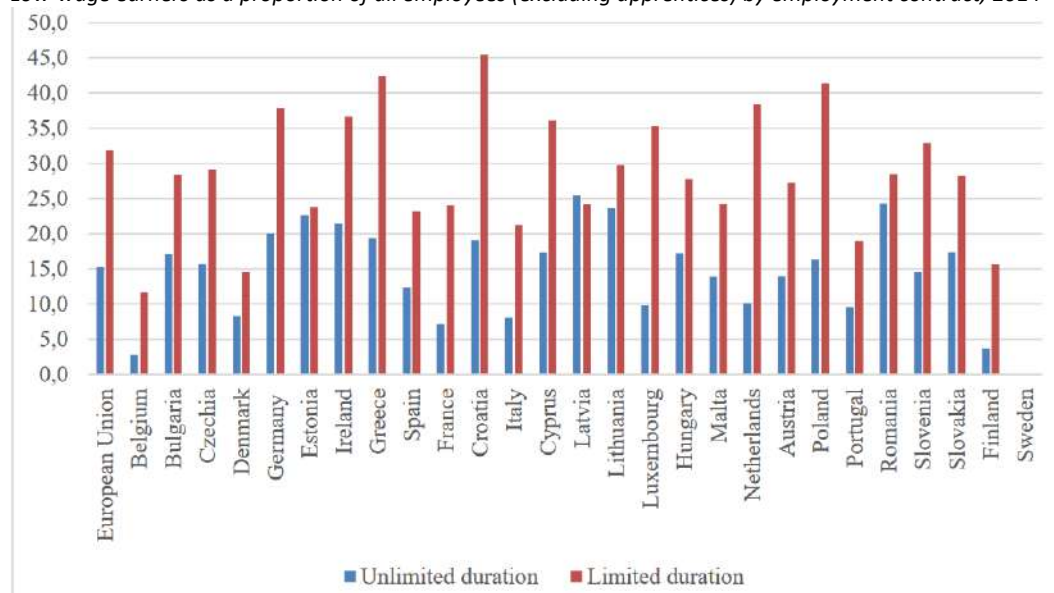
ANNEX 3 ADDITIONAL FIGURES ON LABOUR MARKET SHORTCOMINGS

Part-time and involuntary part-time as a percentage of total employment, people aged 20 to 64, 2019



Source: Eurostat, Part-time employment as percentage of the total employment, by sex and age (%) [lfsa_eppga] & Involuntary part-time employment as percentage of the total part-time employment, by sex and age (%) [lfsa_eppgai]

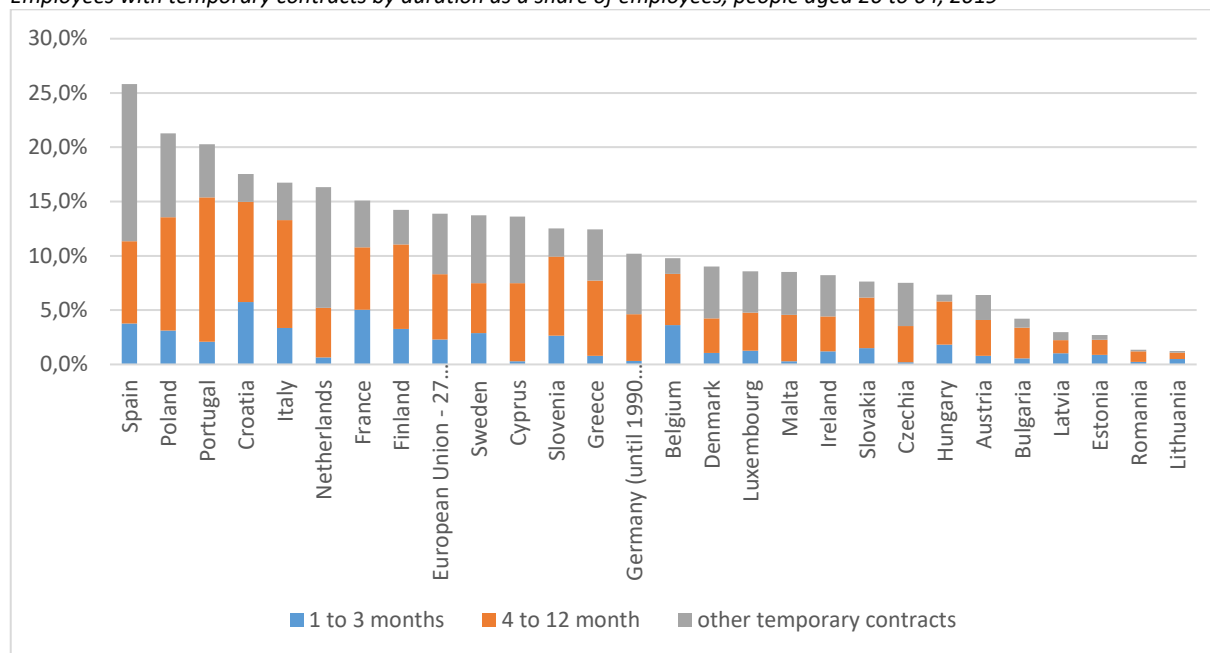
Low-wage earners as a proportion of all employees (excluding apprentices) by employment contract, 2014



Source: Eurostat, LFS as cited in European Commission & Directorate-General for Employment, 2020 (2020, S. 101), referring to the age group of 15 to 74. These figures are somehow unprecise as they don't differentiate the reason for the short working hours i.e. also holidays and sick leaves are included.

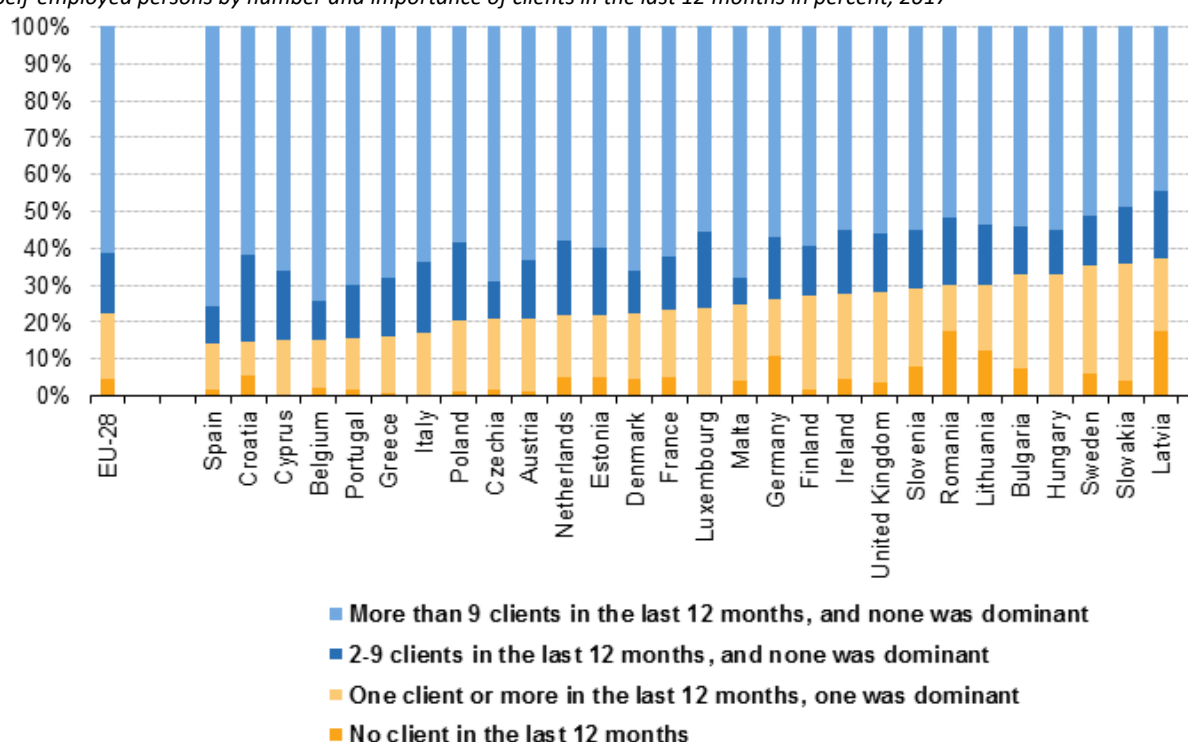
ETUC SociAll

Employees with temporary contracts by duration as a share of employees, people aged 20 to 64, 2019



Source: Employees by sex, age and educational attainment level [LFSA_EEGAED]

Self-employed persons by number and importance of clients in the last 12 months in percent, 2017



Source: (Eurostat, 2021h) based on LFS Survey AHM-2017