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Towards a strong social Europe in the aftermath of the COVID-19 crisis: Reducing disparities and addressing distributional impacts

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Annual review

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Foreword

Last year's edition of the Employment and Social Developments in Europe (ESDE) report showed why Europe needed to strengthen social fairness and solidarity more than ever in the face of the severe crisis induced by COVID-19 and the benefits of the EU response measures such as the temporary Support to mitigate Unemployment Risks in an Emergency (SURE). This year's ESDE provides further evidence of how the exceptional response to the crisis at EU and national levels has helped to cushion the employment impact of the crisis and kept the rise in income inequality and poverty in check.

While it is encouraging that so far the most vulnerable in our society have been protected against income losses, this edition shows nonetheless how the crisis still had uneven and far-reaching effects on the EU economy and society, diversely affecting people, different territories, populations and occupational groups. Older persons, persons with disabilities, homeless and migrants were exposed to elevated health risks, especially at the start of the crisis. Workers in more teleworkable occupations have been less prone to job losses. However, women and in particular single parent households had to cope with an increased workload and care responsibilities. Moreover, those in more vulnerable positions, i.e. the young and workers in temporary or non-standard forms of work, were more severely impacted by the labour market shock.

The prospects of a socio-economic recovery are improving as the COVID-19 vaccination campaigns are well underway in EU Member States. At the same time, we need to be cautious that inequalities may increase as a fallout of this crisis. In this context, the largest ever EU financial stimulus package (combining the Next Generation EU recovery instrument and the long-term EU budget) worth EUR 1.8 trillion will kick start the recovery and accompany a socially fair transition to a climate neutral and digitalised economy. Our reinforced Youth Guarantee, the European Skills Agenda and the Commission Recommendation on Effective Active Support to Employment (EASE) are also more relevant than ever, putting emphasis on more and better education and training to enable workers' mobility towards future-proof jobs and promising sectors, promoting a fair and inclusive recovery.

The European Pillar of Social Rights Action Plan, adopted by the Commission on 4 March 2021, further guides these efforts. Its 2030 headline targets, endorsed by the European Council, have defined Europe's social agenda for the next decade: an employment rate of 78%, a target rate of 60% of adults participating in training per year, and lifting at least 15 million citizens out of poverty and social exclusion.

This year's ESDE edition is once more a crucial contribution to the political debate, with valuable evidence and foresight on the policies that need to accompany the recovery. I invite you to discuss this evidence in the months to come, as we collectively deliver a stronger social Europe.

Nicolas Schmit
Commissioner, Jobs and Social Rights

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Executive Summary

TOWARDS A STRONG SOCIAL EUROPE IN THE AFTERMATH OF THE COVID-19 CRISIS: REDUCING DISPARITIES AND ADDRESSING DISTRIBUTIONAL IMPACTS

By the end of June 2021, the Coronavirus had infected more than 33 million people and had caused over 736000 deaths in the EU. The impacts of the health crisis on the economy, labour markets and society have been no less daunting. In spite of a major drop in GDP in 2020, the comprehensive public policy measures swiftly adopted at the national and the EU level contributed to cushioning the labour market and social impact of the pandemic. Overall, the increase in the EU unemployment rate in 2020 has been lower than the one observed during the 2008 financial and economic crisis, while income support measures have mitigated an increase in income inequality so far.

Over a year and a half after the World Health Organisation (WHO) declared COVID-19 a pandemic, it is clear that the public health measures adopted to save lives and have had more consequences on some economic sectors than on others. The crisis has impacted regions and/or countries more profoundly whose economies are dependent and built around these sectors. Similarly, young people tend to be over-represented in the hardest-hit industries (art and entertainment, travel and transport, tourism and hospitality) and thus have been disproportionately affected in the labour markets, as were low-skilled workers, those in non-standard forms of employment and the self-employed. The toll has also been high for long-term care facilities and nursing homes and for older people, who were the main victims of the health emergency, especially in its initial phase.

Furthermore, the political differentiation between essential and non-essential occupations in the context of the COVID-19 crisis has increased the heterogeneity of effects on different socio-economic groups. Reduced working hours and job losses in many professions at the same time, increased workloads and exposure to health risks for frontline workers in systemically essential occupations and declining income have financially fragilised business ecosystems and vulnerable households. Healthcare professionals were particularly affected by the pandemic, which highlighted structural challenges related to shortages of staff, working conditions, problems with retention of workers due to low attractiveness of professions and exposure to high stress levels. In addition, extensive constraints on social life and necessary restrictions to individual mobility have led to the widespread - mandatory or recommended - use of remote work and online learning, while also eroding overall well-being.

With the rollout of the vaccination campaigns in the EU Member States and beyond, optimism about a strong recovery can be based on firmer ground. After the deep contraction of 2020, the EU economy is set to rebound strongly in 2021. Nonetheless, unemployment rates are expected to increase in 2021 in most Member States as support measures are gradually phased out and changes triggered by the pandemic would tend to persist, before starting to decline again in 2022. At the early stages of the pandemic, it became clear that besides the initial major shock the COVID-19 pandemic would have longer-term effects and change how we live and work, as well as the extent to which and how we move. As time goes on, new evidence demonstrates just how far-reaching these changes are. While Europe has made concerted efforts to protect its citizens' health and well-being and mitigate negative socio-economic effects of the crisis, the impacts of the pandemic on people's lives have been profound.

The EU's policy response is now shifting from offering immediate crisis relief to fostering the recovery. To accelerate the transition to a green and more digitalised economy, while ensuring it is fair and inclusive, requires an in-depth understanding of the pandemic's profound, multifaceted and uneven socio-economic impacts across population groups and regions in the EU, as well as of the pre-crisis situation and structural weaknesses.

The long-term repercussions of these impacts are still unclear. Preliminary evidence suggests that the crisis has accelerated structural change. Although exceptional support measures are likely to have prevented an increase in inequality in the short term, there are indications that inequalities may increase when these measures are progressively phased out and that adverse effects on some vulnerable groups (including children and youth) might reach into the distant future. Yet the effects of this crisis are spreading far beyond potential impact on educational attainment, unemployment, activity and employment rates as they also bring about a global transformation of working practices and of the definition of the workplace itself.

The European Union acted swiftly in response to the COVID-19 outbreak in Europe, with initiatives to support national efforts to tackle the health and economic crisis. These included the activation of the general escape clause of the Stability and Growth Pact; a new temporary framework for state aid; two packages of support (Coronavirus Response Investment Initiative, so-called CRII and CRII+) introducing extraordinary flexibility in the use of the European Structural and Investment Funds to fight the consequences of COVID-19, as well as a new instrument to provide funding solidarity to Members States for job-retention measures – the Temporary Support to mitigate Unemployment Risks in an Emergency (SURE). Finally, the proposed package related to the European Health Union addresses the resilience, accessibility and effectiveness of the health systems in the EU. The actions will improve Member States' ability to prepare and respond together to future health crises and ensure that medical supplies are available, affordable and innovative.

Alongside these measures, the EU has shown strong resolve to avert long-term and potentially structural damage that unprecedented health risks and widened socio-economic and digital divides can inflict on European society. The Union has put in place a EUR 1.8 trillion recovery plan, including the revamped 2021-2027 EU budget of EUR 1.07 trillion and a temporary recovery instrument, Next Generation EU, worth EUR 750 billion, which allows the European Commission to raise funds to help repair the immediate economic and social damage of the COVID-19 pandemic. Its centrepiece, the Recovery and Resilience Facility (RRF) with its EUR 672.5 billion in loans and grants will assist Member States both in mitigating the adverse effects of the crisis and in reinforcing the resilience of vital socio-economic systems to future shocks. An array of other initiatives at EU level, have been enacted to support Europeans to develop the right skills to grasp the opportunities of the rapid shift towards a climate-neutral, more digital and job-rich Europe such as the European Skills Agenda and the Pact for Skills, the Digital Education Action Plan, the Council Recommendations on Vocational Education and Training for sustainable competitiveness, social fairness and resilience and on the reinforced Youth Guarantee, the European Child Guarantee, the Strategy for the Rights of Persons with Disabilities, the consultation on platform work, and the European Commission Recommendation on Effective Active Support to Employment following the COVID-19 crisis (EASE). At the same time, the EU adopted a number of equality strategies in 2020 and 2021 that also addressed the uneven impact of the pandemic on disadvantaged and discriminated groups. EU-level funding tools such as the Recovery and Resilience Facility (RRF), the European Social Fund Plus (ESF+), the European Regional Development Fund (ERDF), the Just Transition Fund and the Technical Support Instrument are available to support Member States in designing and implementing structural reforms to help strengthen the resilience of our economies and societies.

The adoption of the European Pillar of Social Rights Action Plan by the European Commission in March 2021 defines new ambitious employment, skills, and social targets at EU level for 2030 and sets out a comprehensive policy agenda to achieve these targets, by further implementing the various Pillar principles, strengthening the social dimension of the EU's recovery and resilience efforts and promoting just, green and digital, transitions. To take this agenda forward, the EU Heads of State or Government, EU institutions, social partners and other key stakeholders convened at the Social Summit in Porto on 7-8 May 2021, where they welcomed the European Pillar of Social Rights Action Plan. Further, the European Council meeting on 24-25 June welcomed the headline targets and an updated social scoreboard that will help monitor progress towards the implementation of Pillar principles as part of the European Semester policy coordination. Heads of State or Government also strengthened the commitment to transform the Pillar principles into action and pledged to do their utmost to build a more inclusive, more social Europe.

Against this backdrop, this year's Employment and Social Developments in Europe (ESDE) review analyses the state of play of the COVID-19 impacts on employment and society as well as the emerging challenges these impacts imply, especially in the medium and long term. The review provides evidence-based groundwork for the reflection on how policy can combine the pursuit of a rapid and fair recovery and systemic resilience with the quest for just structural transitions. The report contains the following chapters:

Chapter 1: Main developments and key challenges in times of crisis

Chapter 2: A severe crisis affecting everyone – socio-economic impacts of the coronavirus pandemic

Chapter 3: Spatial impacts in a crisis context – promoting an inclusive recovery and structural changes

Chapter 4: Better together: Managing the crisis and embracing structural change – the role of social dialogue

1. MAIN DEVELOPMENTS AND KEY CHALLENGES IN TIMES OF CRISIS

European labour market improvements came to a halt as the EU and global economies contracted in 2020.

The COVID-19 pandemic has had a profound impact on human lives and has placed the European and global economies, public health systems and social wellbeing under considerable strain. In 2020, economic activity suffered a significant slump and EU labour market improvements, which had continued until the end of 2019, came to a halt. These adverse developments are observable in the main economic and social indicators, notably for young people, low-skilled workers, people in poor living conditions, older people and persons with disabilities, who have been among those most affected by the crisis.

The second quarter of 2020 saw the sharpest GDP decline in history.

The COVID-19 outbreak struck EU countries at the beginning of 2020, when economic and employment growth were decelerating since the third quarter of 2019. The health crisis and ensuing containment measures, which aimed to contain the spread of the virus and avoid overwhelming the Member States' healthcare systems, led to a deep economic crisis. In the second quarter of 2020, economic output in terms of Gross Domestic Product (GDP) recorded its largest decline in history (-11.1%), only to rebound in the third quarter (+11.7%) and roughly stabilise in the fourth quarter (-0.4%). The European Commission Spring 2021 Economic Forecast, published on 12 May 2021, projects that the EU economy will expand by 4.2% in 2021 and by 4.4% in 2022, while the euro area economy is forecast to grow by 4.3% this year and 4.4% next year.

Employment support by Member States cushioned the impact on employment but working hours declined and inactivity increased.

To cushion the impact of the economic crisis on the labour market, EU Member States implemented a wide range of job-retention measures, such as short-time work schemes and temporary lay-offs, which supported about 32 million Europeans at the peak. Innovative and ambitious EU instruments such as the temporary Support to mitigate Unemployment Risks in an Emergency (SURE) have helped EU Member States to contain the surge in unemployment. Reductions in working hours largely absorbed the fall in demand and allowed employment levels to shrink less dramatically. Although unemployment increased only mildly, inactivity and labour market slack rose as finding work became more difficult, causing many to cease their job search. In many instances, those already at the margins of the labour market fell into inactivity, especially in the first part of 2020. Activity rates declined in particular for young people, while both youth unemployment and rates of young people not in employment, education or training (NEET) surged. The number of absences among the employed also strongly increased in the first half of 2020, only to return to pre-crisis levels in the third quarter.

The employment impact of COVID-19 has been asymmetric across countries and population groups.

The impact of the crisis has been uneven across Member States, with certain EU countries, regions and population groups, including young people, migrants, Roma and other marginalised communities and people of minority ethnic background and persons with disabilities, workers with low skills or with temporary contracts and the self-employed more affected. The employment rate stood at 72.4% in 2020, 0.7 percentage points lower than in 2019. The decline was slightly higher for men than for women at EU level. However, the effect of the crisis on gender inequalities depends on various dimensions, and the pandemic highlighted long-standing gender inequalities. Women experienced a steeper fall in working hours than men in the second quarter of 2020 since some sectors characterised by high female employment (e.g. accommodation and food service activities) were strongly impacted by lockdowns. Also, women continued to take on the largest share of caring responsibilities, and faced challenges in balancing work and private life.

0.7 p.p. decline

in the EU employment rate in 2020, down to 72.4%, from 2019

Public employment support for vulnerable groups has somewhat mitigated income losses.

Latest data show a year-on-year reduction of household disposable income by 2.8% in the EU for the second quarter of 2020, followed by a recovery in the third quarter. Overall living conditions worsened in 2020 as indicated by the estimated rise in income poverty. However, so far, automatic stabilisers and exceptional income-support policies seem to have protected low-income households and kept disposable income inequality in check despite rising market income inequalities.

AROP stable in 2020

at EU level, according to Eurostat flash estimates

The COVID-19 crisis threatened to undermine the improvements in social conditions that preceded it but AROP at EU level remained stable in 2020.

Nonetheless, persistent pre-COVID-19 inequalities and a stable risk of poverty in a large number of Member States had already indicated social vulnerabilities, including gaps in access to adequate social protection, in particular for workers in non-standard forms of employment. According to Eurostat flash estimates, the at-risk-of-poverty rate (AROP, ages 18-64) at EU level for working-age population remained stable in 2020 (+0.2%). For about half of the Member States a moderate increase is estimated in the AROP rate (ages 18-64), which is significant in Portugal, Greece, Spain, Italy, Ireland, Slovenia, Bulgaria, Austria and Sweden. To address this moderate but uneven evolution in income poverty among Member States as well as the aforementioned pre-COVID-19 inequalities, policy action is needed within the framework of a medium-term sustainable and inclusive recovery.

Less favourable housing and workplace conditions as well as less social support during the lockdowns exacerbated social inequalities.

On top of the pre-existing inequalities, the most vulnerable groups suffered a further deterioration in living conditions throughout the COVID-19 crisis. Lockdown restrictions affected these individuals far worse than the general population. Exposed workers, migrants, segregated and marginalised communities, homeless persons, persons with disabilities or in need of long-term care, carers, children and families (particularly single-parent households), young people, and students had fewer resources to cope during the pandemic. Worse housing conditions, more frequent job and income losses, inferior internet access and fewer IT devices, service disruption, anxiety, loneliness, a deterioration of well-being in general and less social support adversely affected their living conditions, with probable long-term impacts on health and social inequality. Social policies have been implemented and may need to be continued to counter market income losses and the social consequences of the crisis.

The pandemic has reduced life expectancy, especially of old people in low-income groups.

Healthcare systems were put under significant strain by the pandemic, and for the first time in post-war history, life expectancies have declined in a number of Member States, often driven by COVID-19-related deaths, especially among older people. During the pandemic, people living in poor areas, and generally with less means to ensure effective social distancing, were at greater risk of infection, which considerably increased the threat to low-income populations, especially the eldest among them. The pandemic highlighted also persisting gaps in access to healthcare, related to incomplete coverage, high co-payments, unavailability of services due to various reasons, such as staff shortages. It also underlined territorial disparities in access to medical services and social care, especially in sparsely populated areas and particularly in certain EU countries. In the light of such acute stress in the healthcare systems, improving equitable access to the healthcare systems and strengthen their preparedness and resilience have become broadly-shared policy priorities.

2. A SEVERE CRISIS AFFECTING EVERYONE - SOCIO-ECONOMIC IMPACTS OF THE CORONAVIRUS PANDEMIC

Occupations can be classified in terms of degrees of necessary social interaction, teleworkability and their importance to meeting societal needs.

Building on the main developments presented in chapter 1, this chapter analyses the impact of the pandemic on jobs, incomes and specific groups. The labour market analysis classifies occupations along three dimensions: first, the degree of social interaction that is required on the job; second, whether tasks can be performed entirely from home to comply with social distancing requirements – in other words, 'teleworkability'; and third, whether an activity is crucial to cover basic societal needs, such as food, healthcare, education, as well as the operation and maintenance of essential infrastructure and services (e.g. transportation, logistics and postal services, sanitation, electricity and communication networks).

Employment increased in teleworkable occupations that are critical and decreased in all non-teleworkable ones.

Looking at the evolution of employment from the second quarter of 2019 to the second quarter of 2020 based on the above classification of occupations, employment increased in critical occupations that are teleworkable and require low social interaction, such as ICT professionals and technicians. Employment also grew in critical teleworkable jobs with high social interaction (e.g. teaching professionals and healthcare workers in telemedicine, which increased substantially during the pandemic). Conversely, employment decreased in all non-teleworkable occupations – both critical and non-critical – that necessitate either high or low levels of social interaction. The decline was less strong, however, in critical non-teleworkable occupations, such as (the majority of) healthcare personal care workers

Women are less likely than men to work in occupations that saw sharp declines in employment.

The aforementioned occupational categories vary greatly in their workforce profiles and working conditions. Although representing very large shares or majorities in cleaning services, care and support services, food retail and other occupations, women are overall less likely than men to work in non-teleworkable occupations requiring low social interaction that were severely affected during the pandemic. Non-native workers and low- and medium-educated ones, on the other hand, are more likely to be employed in these occupation groups. Low- and medium-educated workers are less likely to work in critical, teleworkable jobs, which was the only category that grew between 2019 and 2020. The job profile of critical workers spans multiple sectors and wage-levels.

The group of critical workers is very heterogeneous. It includes: a) professionals in health, information and communication, teaching and some fields of engineering and science; b) associate professionals in the fields above; c) personal care workers, agricultural, fishery and animal producers workers (skilled and not), transport workers and seafarers and mobile plant operators, elementary workers and refuse collectors. These classifications contain a mix of very low-paid and higher-paid workers. There are also cross-country disparities in the level of salaries, which among other contribute to the mobility trends of healthcare professionals, resulting in growing shortages of staff in some Member States.

Tax-benefit systems alleviated or offset

the regressive impact of COVID-19 on market incomes

Income inequality appears to have remained stable, thanks to tax-benefit systems.

Through the uneven employment impacts of the pandemic, poorer households generally experienced larger reductions in market incomes following the outbreak of the pandemic. Cash transfers and taxes alleviated – and in certain cases even offset – the regressive nature of the initial COVID-19 shock on market incomes. In the majority of countries, simulations show no substantive changes in disposable income inequality – even exhibiting small declines. The same applies to income poverty rates, which, compared to the (reduced) income standards following the shock, remained stable or decreased slightly. However, increases in income inequality might still materialise when exceptional income support measures will be wound down.

While accounting for a significant share of the essential workforce, migrant workers were at greater risk of infection and higher risk of unemployment or inactivity due to the pandemic.

The crisis highlighted the vulnerability of certain population groups, including income-poor households, migrants, marginalised communities such as the Roma, persons with disabilities and homeless people. Even if they did not suffer job loss or income reductions, low-income households often faced more difficulties during the pandemic. They were more likely to live in overcrowded or poor housing conditions and to lack access to the internet at home. In 2019, 28% of the income-poor lived in overcrowded housing and the same proportion lacked access to an internet connection, versus 16% and 15%, respectively, of the total population. Evidence suggests that the health risks due to COVID-19 have been more severe for migrants, especially those born outside the EU, due to higher incidence of poverty, overcrowded housing and higher concentration in jobs where physical distancing is difficult. There is also emerging evidence of low COVID-19 vaccination rates in some migrant and ethnic minority groups in the EU. Moreover, the pandemic has affected the labour market performance of migrants more severely than that of native workers. This is due to disadvantages linked mainly to poorer living conditions, which manifested themselves in prior economic downturns. Non-EU migrants and EU mobile workers have made vital contributions to maintaining critical systems across the EU and elsewhere since the start of the pandemic, highlighting the importance of their effective social and labour market integration.

No internet access:

almost twice as frequent in income-poor households than among the general population

Restrictions in response to COVID-19 affected negatively persons with disabilities...

Persons with disabilities were also among the groups at highest risk of grave illness and virus-related death. They encountered more difficulties in following certain contagion-prevention measures and/or to access services of personal assistance, community support as well as assistive technology due to confinement of carers. Among the people with disabilities regularly receiving home care before the pandemic, about 18.5% faced more difficulties in obtaining the required care between June and August 2020, mainly because carers could not come to their homes. Member States enacted measures to offset these disadvantages, including support to employers for recruitment of workers with a disability as well as support for continuing training programmes online. Some Member States provided additional one-off targeted financial support to persons with disabilities including those on low incomes.

...as well as homeless people.

Finally, homelessness represents one of the most extreme forms of social and economic deprivation. The estimated 700 000 people across the EU who already before the crisis slept rough or lived in emergency or temporary accommodation are particularly exposed to health risks during the pandemic. This was because many of the measures imposed to limit the spread of the pandemic (such as social distancing and increased personal hygiene) cannot be realistically applied to people experiencing homelessness. At the same time, the new context increased the visibility of homelessness and led to various initiatives across the Member States to address the most immediate needs of the homeless population, including priority testing, protection from punitive enforcement measures, extraordinary housing measures, promoting solidarity with the homeless and helping prevent people from becoming homeless.

3. Spatial impacts in a crisis context – promoting an inclusive recovery and structural changes

Regional disparities, apparent before the onset of the COVID-19 pandemic, are expected to widen.

The territorial impact of COVID-19 is still emerging, but it may widen the regional disparities that preceded the pandemic. Marked income differences between regions exist in many Member States. Urban regions tend to have higher median incomes, though variations within urban regions can be large. Hence, income inequality varies substantially at

Median incomes and inequality tend to be significantly higher in capital than in other regions

regional level, and inequality indices tend to be highest in the capital regions.

Employment performance of regions is related to the degree of teleworkability of local jobs…

The uneven geographical impact of the crisis has often implied greater variation within countries than between them. Labour market indicators only partially capture the full impact of the crisis so far, as a large proportion of the workforce was protected by public policies. Between 2019 and 2020, unemployment rates deteriorated in almost all Member States and more so in cities, towns and suburbs than in rural areas. In addition, the chapter's experimental analysis of the number of employed persons by the degree of urbanisation and across occupational groups suggests that rural areas have a higher share of non-teleworkable occupations, which declined relatively more than in cities, towns and suburbs at the aggregate level of 26 Member States.

…while digital skills would raise the capacity of regional economies to recover and address green and digital transition challenges.

The intensity of digital skills significantly varies across regions (as seen by the Digital Economy and Society Index created by the European Commission) and is correlated with the regional GDP per capita, as well as other important regional variations in connectivity and access to digital services. Regional differences in digital skills are persistent and have likely played a role regarding the impact of the crisis. Overcoming lags in digital skills would support the recovery and make it more inclusive. In this respect, strengthening the intensity of digital skills and promoting tele-workable occupations could be an element of a policy mix that facilitates facing challenges ahead.

Tourism-related sectors and Mediterranean regions are among the worst affected.

On the basis of simulations, the estimates presented in this report indicate that the impact of the crisis on the GDP of EU regions in 2020 was -5.9% (unweighted average), with a considerable variation across the EU, although the Mediterranean regions were the most affected. This is linked to developments at sectoral level, for which the results show that the higher the share of employment in tourism-related sectors, the greater the loss in employment.

High quality human capital, R&D intensity and quality of public administration bolster resilience to shocks.

Understanding the drivers of differential regional resilience is important. To this end, a cluster analysis identifies six different types of regions based on a large set of variables grouped in six underlying factors. Then, econometric analysis shows a correlation between high regional productivity (Total Factor Productivity), high quality human capital, high expenditures in Research & Development and high quality of local institutions on the one hand, and the capacity of regions to withstand better the impact of negative shocks, such as the COVID-19 crisis, on the other. Among the elements of quality of government, the model shows that low levels of corruption in administration are most strongly linked with regional resilience.

Risks linked to climate change and environmental degradation and corresponding socio-economic vulnerabilities are key challenges for recovery and resilience at regional level.

The results of the analysis suggest that regional lags – in productivity, digital skills and the promotion of green transition – tend to be associated with lower resilience to the COVID-19 crisis. The measure of digital skills intensity of the labour market reveals significant disparities across the regions both within and between countries with no sign of convergence over time. Furthermore, environmental and climate-associated risks and adaptation challenges and their corresponding socio-economic vulnerabilities are highly visible at the regional level and need to be addressed for an inclusive recovery and enhanced social resilience. Hence, the EU has focused its support under the Recovery and Resilience Facility on addressing these challenges.

4. Better together: Managing the crisis and embracing structural change – the role of social dialogue

Social partners have supported workers and businesses through some of the worst early challenges of the pandemic…

Job security and safety, age and work-life balance are factors that have significantly impacted the physical and mental health as well as the subjective well-being of workers in different sectors. Social partners at the EU and national level have proven to be an important resource for providing support to both workers and businesses to alleviate some of the health and economic risks posed by COVID-19.

...including by protecting the health and safety of workers and the self-employed...

At the EU level, social partners have issued a number of positions, calling on national and EU authorities for support measures adjusted to the needs of each sector. Social partners have adopted position papers to address the fundamental needs of workers and of the self-employed for the duration of the health emergency and ensuing crisis and were instrumental in establishing health and safety protocols to maintain business continuity.

...and although the need for immediate responses to the health emergency did not always leave room for social dialogue.

At the national level, the pandemic had a differential impact on social dialogue and collective bargaining across Member States. In some of them, collective bargaining came to a halt in the initial phase of the pandemic, and collective bargaining rounds had to be postponed. The importance of providing an immediate response to the health emergency placed social dialogue under a new kind of pressure, as social partners were not systematically involved in the elaboration of national response measures. Nonetheless, in 11 Member States, social partners played an important role in the design and implementation of short-time work schemes. Also, in some Member States, the pandemic strengthened tripartite action on short-time work schemes. Despite the challenges arising from the health emergency, more than half of all income-protection measures and active labour market policies enacted since the COVID-19 outbreak were either agreed by or negotiated with social partners.

Over half of all income-protection measures and ALMPs during COVID-19

agreed or negotiated with social partners

Collective agreements on remote work forged during the crisis align with good practices according to research and regulatory frameworks.

In addition to their contributions on health and safety protocols and immediate relief measures following the coronavirus outbreak, social partners have sought to steer the structural changes accelerated by the COVID-19 response. This is visible in the collective agreements on teleworking negotiated by the social partners during the pandemic. The outcomes of social dialogue in this respect are in line with good practices of teleworking, implicit in the empirical findings of both pre- and post-COVID-19 research and acknowledged by the European Parliament's resolution of 21 January 2021 on the right to disconnect. Indeed, broad overlap exists between these good practices and the provisions of collective agreements as well as the own-initiative positions of social partners. This illustrates the willingness of the social partners to control structural change actively, paying attention to empirical lessons, rather than merely and hastily adjusting to it. This also seems broadly in line with the wishes of the majority of workers – as latest data show, about 72% of workers would still prefer to work from home, even without any restrictions resulting from COVID-19. Social partners can play an important role for labour market coordination and education and training systems in view of the recovery, as they are involved in training and education measures at national and company level. The analysis also shows that social partners can help to adapt production methods to technological innovation.

Around 72% of workers

would prefer to telework even after the pandemic

Social partners support a green and digital recovery based on new skill sets for workers.

There is consensus among social partners from different sectors on the fact that public support for the recovery needs to be focused on sustainability and judicious digitalisation. Companies in which employees are involved in decisions about work processes are more likely to innovate processes and products. Social partners can play an important role in training and education to upskill and reskill the EU labour force.

Despite the erosion of collective bargaining coverage, the social dialogue agenda is evolving to address emerging challenges linked to health risk, climate adaptation and teleworking.

Social partners in the EU are increasingly elaborating strategies to deal with the changing world of work, challenges of climate adaptation and environmental sustainability. On the other hand, over the past two decades, there has been a steady decrease of collective bargaining coverage, which is crucial to maintaining the social partners' capacity to inform public policy-making. Despite these difficulties, the efforts of the social partners are slowly but surely bringing forth

a new social dialogue with a modernised agenda.

Conclusions

The impacts of the COVID-19 pandemic have been uneven and diverse. The groups that were disproportionately affected include older people, most exposed to health risks; young people, who experience disruptions in their education and training, reduced social contacts and/or a start in the labour market in a difficult socio-economic context; women, who typically have to carry a larger burden in caring responsibilities and household work, especially during confinement; cross-border and frontier workers, due to border closure and other limitations to people and workers' freedom of movement. Health and economic risks also accrued to vulnerable socio-economic groups in poorer living conditions, including crowded housing, as well as to those whose occupations were non-teleworkable, regardless of the necessary degree of social interaction. Social conditions that had improved in recent years are in danger of deteriorating due to reduced labour earnings and risks to household disposable incomes. The socio-economic impacts of the pandemic can also be drawn along geographical lines. Health and economic outcomes following the shock of COVID-19 are indicative of regional disparities and transition challenges that were apparent before the onset of the pandemic.

As far-reaching as these impacts are, they are more modest than those in some other economies outside the EU (e.g. US, Canada, and Russia), thanks to the policy response put forward by the EU and Member States to deal with the health and economic emergency in a spirit of solidarity. This solidarity has helped to limit substantially the damage inflicted by the COVID-19 crisis on employment and society in the EU. Exceptional income support measures have so far prevented increases in poverty and inequality at EU level.

The scarring effects of the pandemic across socio-economic groups and regions exposed pre-existing weaknesses as well as challenges to ensuring just green and digital transitions. Attention to overcoming such vulnerabilities has also a central role to play in policies to foster a fair and inclusive recovery, while anchoring its social dimension. An array of EU policies and financial tools have therefore been put in place to assist Member States to this end. On 4 March 2021, the Commission presented the European Pillar of Social Rights Action Plan, as well as a Recommendation on Effective Active Support to Employment following the COVID-19 crisis (EASE). The latter provides concrete guidance to EU governments on policy measures to gradually transition from emergency job-retention measures to active labour market policies needed for a job-rich recovery. Under a revamped and reinforced long-term EU budget 2021-2027, EU funds, including from the Recovery and Resilience Facility and the European Social Fund Plus (ESF+), are available to support national EASE measures. In this process, social partners can also play an important role in steering socially sustainable structural change as done in the immediate aftermath of the crisis.

CHAPTER 1

Main employment and social developments

1. INTRODUCTION ([1])

The COVID-19 outbreak put Europe, as well as the rest of the world, under exceptional public health, economic and social stress. In addition to the high death toll in 2020, economic activity suffered an exceptional slump and the state of the EU labour market deteriorated. These adverse developments are reflected in all main economic and social indicators, including for young people, who are among the most affected by the crisis.

The outbreak of the COVID-19 pandemic hit the EU in early 2020 when EU economic and employment growth had already been slowing down since 2018. It followed a period of steady economic and employment expansion after 2013, during which the number of households in material deprivation had continuously declined.

The health crisis and the necessary containment measures to curb the spread of the virus led to a severe contraction of Gross Domestic Product (GDP) by 6.1% in 2020. After dropping sharply in the second quarter of 2020, GDP strongly rebounded in the third quarter and broadly stabilised in the last quarter of the year. The European Commission Spring economic forecast of May 2021 ([2]) projects a strong economic growth in the EU in the second half of 2021 and in 2022, with the gradual rollout of vaccinations and the progressive lifting of restrictive measures. GDP is expected to reach pre-crisis levels by mid-2022.

The EU and its Member States have been mobilising a wide range of measures to tackle and mitigate the impact of the crisis. At the EU level this included the flexibilisation of state aid, with the adoption of the State Aid Temporary Framework in March 2020, and fiscal rules to enable national governments to financially support healthcare systems, businesses, and keep people in employment during the crisis. The measures also include a more flexible use for the EU Cohesion Funds and an innovative instrument to underpin 'temporary Support to mitigate Unemployment Risks in an Emergency' (SURE). The major European Recovery Plan, comprising up to EUR 1.8 trillion, involves the creation of a new recovery instrument, 'Next Generation EU', which is embedded in a modern and revamped long-term EU budget. At the same time, the European Commission, with the adoption of EASE (Recommendation on Effective Active Support to Employment following the COVID-19 crisis), outlined a strategic approach to gradually transition from emergency measures taken to preserve jobs during the pandemic to new measures needed for a job-rich recovery, promoting job creation and job-to-job transitions, including towards the digital and green sectors.

In 2020, employment declined less sharply than GDP, and the rise in unemployment was contained. This was due, among other factors, to the implementation of job-retention measures, the steep drop in working hours, and the decline in the activity rate as people stopped looking for work. The labour markets in Member States reliant on sectors that depended on social interaction were hit harder than other countries. Young people, migrants, workers on

([1]) This chapter was written by Petrica Badea, Fabio De Franceschi, Stefano Filauro, Katarina Jaksic, Lorise Moreau, and Luca Pappalardo.

([2]) Available at: https://ec.europa.eu/info/business-economy-euro/economic-performance-and-forecasts/economic-forecasts/spring-2021-economic-forecast_en#documents

temporary and part-time contracts were more affected than other population groups.

Preliminary available data show a sharp drop in labour incomes, although social protection seems to have cushioned the fall in disposable incomes, notably at the bottom of the income distribution. In the face of an overall reduction in disposable income, exceptional policy response to the COVID-19 crisis and the action of automatic stabilisers seem to have kept disposable income inequality in check in 2020. Nonetheless, a number of vulnerabilities have starkly emerged during the crisis. Different groups have been exposed to various challenges in the labour market, in their housing conditions, and in accessing a variety of social services, such as health and education, in remote mode.

This chapter reviews the latest socio-economic developments in the EU and its Member States. It also assesses recent social and income trends, devoting particular attention to the indicators included in the scoreboard underpinning the European Pillar of Social Rights. In the light of dramatically high excess deaths relative to average mortality (between 2016 and 2019) almost everywhere in the EU, it describes how the sanitary crisis affected the socio-economic conditions of EU households. In this respect, it addresses the multifaceted nature of poverty and social exclusion, households' financial situation, the role of social transfers in mitigating income inequality in the EU and trends in social protection expenditure at EU level and by country. Finally, the challenges for vulnerable groups in a variety of domains are discussed.

2. MACROECONOMIC ENVIRONMENT

2.1. In 2020, the pandemic triggered a sharp economic slump

After a drop in global GDP of 3.4% in 2020, activity is projected to rebound in 2021 and 2022. Following the adoption of social distancing measures, GDP contracted in 2020 by 6.1% in the EU, by 6.5% in the euro area, by 3.5% in the US and by 4.8% in Japan. China recorded a modest growth (+2.3%) – the lowest in decades. For several countries, this constitutes the sharpest drop in GDP since World War II.

The reopening of several activities in the summer of 2020 contributed significantly to the rebound observed in the second half of the year. The economic situation weakened again towards the end of the year, however, when restrictions to individual mobility were reintroduced in response to the second wave of infection. It is expected that, globally, virus containment measures will remain in place throughout 2021, though they will start to be eased in the second half of the year in conjunction with the roll-out of vaccination campaigns.

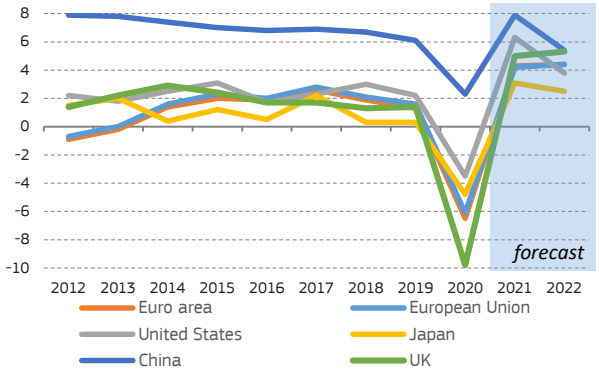
According to the European Commission Spring 2021 Economic Forecast, the EU economy will expand by 4.2% in 2021 and by 4.4% in 2022, while the euro area economy is forecast to grow by 4.3% this year and 4.4% next year. Growth rates will continue to vary across the EU, but all Member States should see their economies return to pre-crisis levels by the end of 2022.

Public investment as a proportion of GDP is set to reach its highest level in more than a decade in 2022. This will be driven by the Recovery and Resilience Facility (RRF), the instrument at the heart of NextGenerationEU.

Chart 1.1

GDP fell in most large economies

Real GDP growth in selected large economies (percentage change on previous year)



Source: Eurostat, table [naida_10_gdp], European Commission Spring forecast for 2021 and 2022

Click here to download chart.

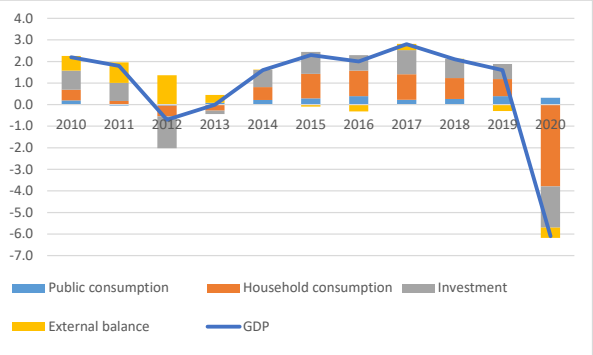
In the EU, GDP declined by 6.1% in 2020, constituting the most severe fall recorded since the time series started in 1995. This was 2.0pp more than during the crisis of 2009, when it decreased by 4.2%. The euro area recorded a similar drop, showing a fall of 6.5% in 2020. Economic activity developed unevenly throughout the year. After a 3.4% decrease in the EU (3.8% in the euro area) recorded in the first quarter compared with the previous quarter, it plunged by 11.1% and 11.5%, respectively, in the second quarter, which are the sharpest drops ever recorded. On the other hand, GDP rebounded by 11.7% (12.6%) in the third quarter, which is in turn the greatest rise ever recorded. In the fourth quarter, GDP receded slightly again, by 0.4% and 0.6%, respectively.

The drop in EU GDP can be attributed mainly to private consumption, followed by investment, and by the external sector. In 2020, private consumption accounted for more than 60% of the decline, investment for 30%, and the external sector for about 10%. On the other hand, public consumption made a small positive contribution (Chart 1.2).

Chart 1.2

Main contribution to GDP drop in EU came from private consumption and investment

Contribution to GDP real growth (EU, percentage change on previous year)



Source: Eurostat, table [nama_10_gdp]

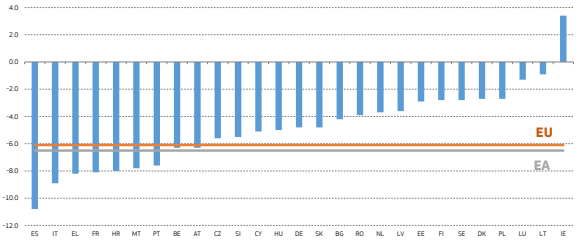
Click here to download chart.

In 2020, GDP shrank in all Member States except Ireland, with considerable differences across Member States. In a third of them, the decline exceeded the EU average, especially in Spain (-10.8%), Italy (-8.9%), Greece (-8.2%), Croatia (-8.0%), France (-7.9%) and Portugal (-7.6%). While GDP grew in Ireland by 3.4%, without the impact of the multinational sector, underlying domestic demand suffered a sharp contraction, according to the Central bank of Ireland (-7.1%) ([3]).

Chart 1.3

Real GDP fell in almost all Member States

Real GDP growth in the EU (2020, percentage change on previous year)



Source: Eurostat, table [nama_10_gdp]

Click here to download chart.

2.2. EU labour markets deteriorated after six years of growth

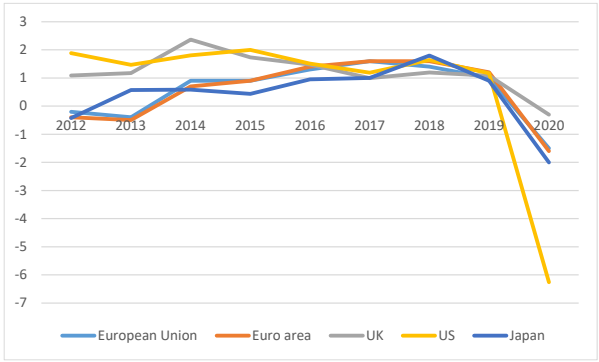
In 2020, employment dropped by 1.5% in the EU and by 1.6% in the euro area after growing continuously since 2013 and reaching record numbers in 2019 (209 million and 161 million, respectively).

([3]) Available at: https://www.centralbank.ie/publication/quarterly-bulletins/quarterly-bulletin-q1-2021

Chart 1.4

Employment shrank globally in 2020

Employment growth in selected large economies - Percentage change on previous year



Source: Eurostat, table [nama_10_gdppe], European Commission Spring forecast

Click here to download chart.

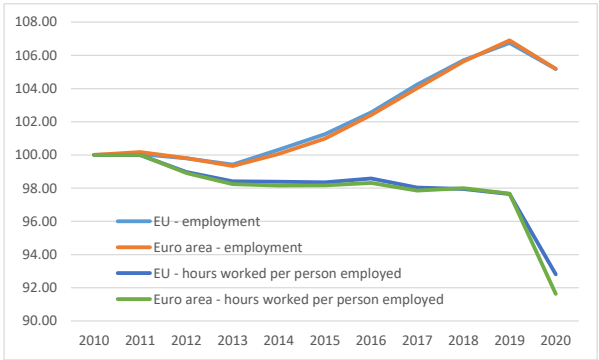
These declines were less marked than those recorded for GDP, however, thanks to governmental measures in support of employment, such as short-time work schemes and similar job retention measures. These were implemented in all Member States and supported by EU funds, notably SURE. Thus, the disruption brought by the crisis to the labour market in the EU was more contained than in other advanced economies, such as US, where employment fell by 6.3% in 2020, and to some extent Japan (-2.0%).

Both in the EU and the euro area, the total hours worked in 2020 dropped almost as sharply as economic activity – and much stronger in comparison to the number of people employed. This implied a sudden acceleration of a steady declining trend in the number of hours worked per employed observed since 2010.

Chart 1.5

Employment and total hours worked per person employed dropped in 2020

Employment and total hours worked per person employed in EU and euro area (Index 2010 = 100)



Source: Eurostat, table [nama_10_a10_e]

Click here to download chart.

3. LABOUR MARKET DEVELOPMENTS

3.1. Employment rates

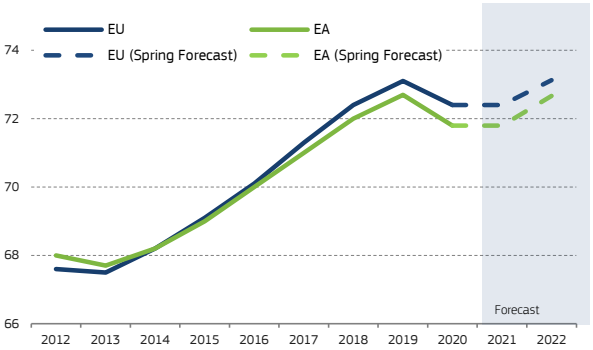
The COVID-19 pandemic led to a deterioration of the EU's labour market. In 2020, after six years of continuous growth, the employment rate (20 to 64 years) declined by 0.7pp and stood at 72.4%. In the

euro area, the employment rate declined by 0.9pp to reach 71.8% (see *Chart 1.6*). According to the Spring 2021 Commission forecast, total employment will remain stable in 2021 before increasing by 1.0% in 2022.

Chart 1.6

The employment rate decreased after six years of growth

Employment rate, % of population aged from 20 to 64 years



Note: The forecast is calculated using the estimation of employment in persons growth, and assuming a similar size of the workforce

Source: Eurostat, LFS [lfsi_emp_a], Commission Spring 2021 economic forecast, and EMPL calculations

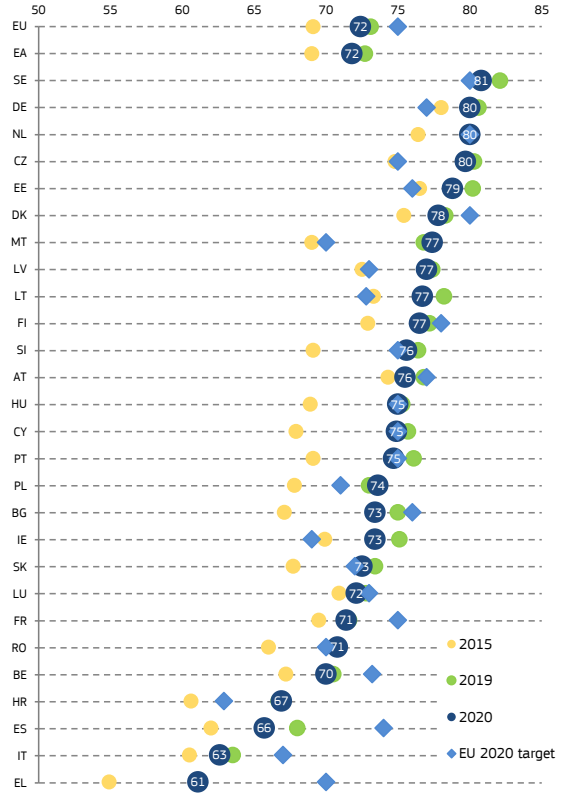
Click here to download chart.

Employment rates fell in almost all Member States, although to different degrees. The steepest drops between 2019 and 2020 were observed in Spain (-2.3pp), Ireland (-1.7pp), and Bulgaria (-1.6pp), while Malta, Poland (+0.6pp for both), and Croatia (+0.2pp) were the only countries in which the employment rate increased. A consequence of the decline in 2020 is that the employment rate for twelve Member States remained or fell below their respective EU2020 targets (see *Chart 1.7*).

Chart 1.7

The employment rate declined in almost all Member States in 2020

Employment rate, % of population aged from 20 to 64 years



Note: The Europe 2020 target for France excludes the overseas departments

Source: Eurostat, LFS [lfsi_emp_a]

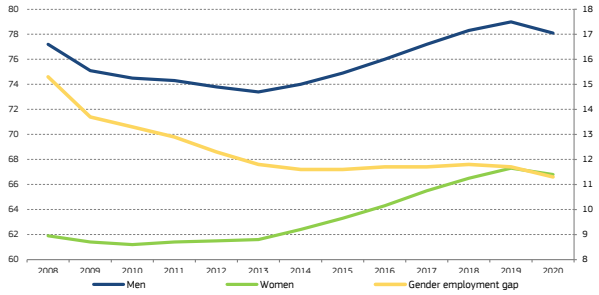
Click here to download chart.

The gender employment gap decreased slightly in 2020, as the employment rate declined less for women than for men. The employment rate for women in the EU fell by 0.5pp to 66.8%, while it dropped by 0.9pp for men to 78.1%. The gender employment gap shrank therefore to 11.3pp, 0.4pp less than in 2019 (see *Chart 1.8*). However, in 2020, when compared to the previous year women experienced a steeper fall in working hours (-7.2%) than men (-6.7%). The decline was particularly strong in the second quarter of 2020 as some sectors with high female employment (e.g. accommodation and food service activities) were more strongly impacted by lockdown measures. A full recovery in working hours for women occurred in the third quarter as the economy opened up, but the second wave of lockdowns in the fourth quarter also heavily affected sectors in which women are overrepresented, again causing working hours for women to fall faster than for men. In comparison with the same quarter of 2019, in the fourth quarter of 2020 total working hours decreased by 4.9%, whereas they dropped by 5.6% for women and by 4.4% for men.

Chart 1.8

The employment gap between men and women decreased slightly

Employment rates by sex (% of population aged from 20 to 64 years, lhs) and gender employment gap (pp, rhs)



Note: The gender employment gap is calculated as the difference in the employment rate of men and women aged 20 to 64

Source: Eurostat, LFS [lfsi_emp_a], EMPL own calculations

Click here to download chart.

Workers on temporary contracts bore much of the brunt of the impact of the COVID-19 recession on employment. The fall in temporary work in 2020 is concentrated in the second quarter of the year and seems to be linked to layoffs implemented by companies during the first wave of the pandemic. As regards Member States, the strongest reductions between 2019 and 2020 in the share of people with temporary contracts were recorded in those countries with the highest proportion of workers in temporary employment, such as Spain, Portugal, Poland, Croatia, and the Netherlands. More women were on temporary contracts (12.5%) than men (10.6%); a discrepancy that has remained stable during the fall in the share of temporary employment described above.

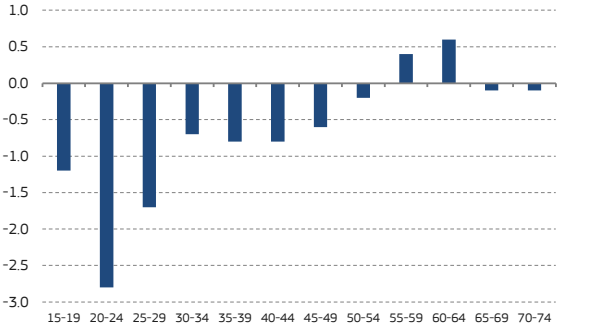
Part-time employment decreased by 1.2pp to 17.1% of total employment, after years of relative stability. One of the reasons for this sudden drop could be the overrepresentation of part-time workers in sectors that rely on social interaction and were therefore more exposed to lockdown measures (European Commission (2020c): pp. 7, 25) ([4]). The proportion remained much higher for women (28.0%, i.e. -1.9pp compared with 2019) than for men (7.7%, i.e. -0.7pp compared with 2019).

Employment of young people declined particularly strongly in 2020. Compared with 2019, the employment rate for people aged 20-24 dropped by 2.8pp to 48.7% and by 1.7pp for people aged 25-29, reaching 72.9% compared with the previous year. Reductions in employment rate tended to be lower in older age brackets. For the 55-59 and 60-64 age brackets, the employment rate even recorded a moderate increase (+0.4pp and +0.6pp respectively) (see *Chart 1.9*). Young workers were more susceptible to losing their jobs during the crisis since they tend to be on temporary contracts and more often in vulnerable occupations than others (European Commission (2020c)). Young people transitioning from education to the labour market also arguably faced difficulties in finding their first job with the total number of recent job starters declining in 2020 (6.5 million on average per quarter, compared to an average of about 7.5 million people in the previous years, a 13.5% drop).

Chart 1.9

Employment rates decreased more for young people in 2020

Difference between the employment rate in 2020 and 2019 in the EU by age groups, pp



Source: Eurostat, LFS [lfsa_ergaed]

Click here to download chart.

In 2020, the EU employment rate declined more for foreign-born people than for natives. In comparison with 2019, the employment rate for foreign EU-born people decreased by 1.8pp to reach 71.2%, while it went down by 2.4pp for the non-EU born to reach 59.9%. It dropped instead more moderately for natives to reach 68.3%, 0.5pp less than in 2019 ([5]).

The evolution of the COVID-19 pandemic had a strong impact on the absences from work of employed people. Between the last quarter of 2019 and the second quarter of 2020, the total number of absences in the EU almost doubled, mainly as a consequence of the sharp increase in temporary lay-offs (see *Chart 1.10*). In this period, absences increased substantially more for men than for women (+109.9% versus +83.0%). In some Member States, they skyrocketed, as for example in Malta (+963%), Romania (+652%), and Greece (+579%). On the other hand, they only rose by 6.2% in Sweden and 11.7% in Finland. These differences could be due to variations in the use of governmental support measures, as the average proportion of jobs on temporary lay-off in the second quarter of 2020 in countries like Greece (12.9%) or Spain (9.8%) was much higher than in Finland (5.5%) ([6]). Absences returned to pre-crisis levels in the third quarter when temporary lay-offs ended and workers returned to their jobs, but they

([4]) 75% of the fall in EU part-time employment can be attributed to Germany, for which provisional figures (representing a break in the series) have been published for 2020. Without Germany, the decrease in part-time employment in the EU would be 3.3%.

([5]) See Section 6.2 in Chapter 2 for a more detailed analysis on migrants.

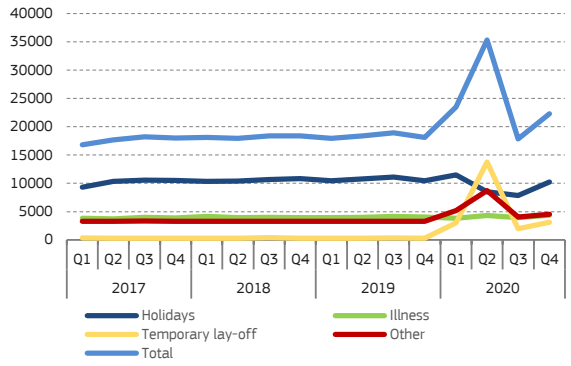
([6]) See https://ec.europa.eu/eurostat/documents/10760954/11071228/Job_benefiting_from_Covid19_governmental_support_measures.xlsx

picked up again in the last quarter of 2020 during the second wave of lockdowns (+23.1% compared with the last quarter of 2019).

Chart 1.10

Absences in the EU skyrocketed in the first half of 2020

Absences by reason, thousand persons from 20 to 64 years



Source: Eurostat, LFS [lfsi_abs_q]

Click here to download chart.

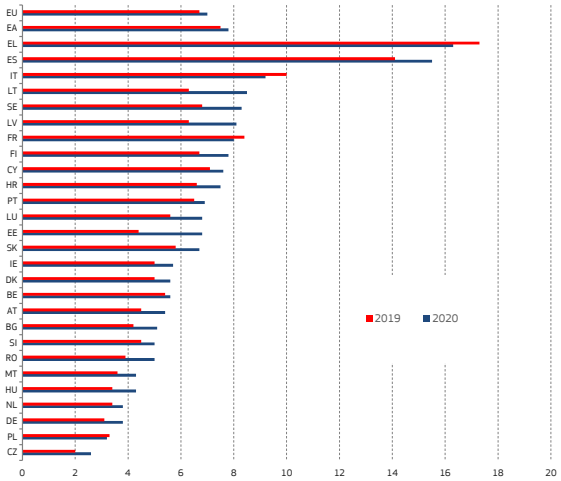
3.2. Unemployment rates

The EU unemployment rate rose in 2020 to 7.0% of the labour force, 0.3pp more than in 2019. Between December 2019 and April 2021 the unemployment rate grew from 6.6% to 7.3%. The rate would have increased even more, had national governments not implemented a wide range of job-retention measures (European Commission (2020c)). Also, the fall in the activity rate excluded from unemployment figures a large number of people who stopped looking for a job during the economic crisis (see section 3.3). In some Member States, the fall in the activity rate was so strong that in 2020 the unemployment rate even declined, such as in Greece (-1.0pp), Italy (-0.8pp), and France (-0.4pp). The largest increases in unemployment rates were recorded in Baltic countries (+2.4pp in Estonia, +2.2pp in Lithuania, and +1.8pp in Latvia), as well as Sweden (+1.5pp), and Spain (+1.4pp) (see *Chart 1.11*). The unemployment rate increased slightly more for men than for women in the EU in 2020 (+0.3pp to 7.3% for women versus +0.4pp to 6.8% for men). The European Commission Spring 2021 forecast predicted a rise in the unemployment rate to 7.6% in 2021 in the EU, before declining to 7.0% in 2022.

Chart 1.11

The unemployment rate increased in almost all Member States

Unemployment rates by Member States, % of labour force from 15 to 74 years



Source: Eurostat, unemployment series [une_rt_a]

Click here to download chart.

The COVID-19 pandemic also caused an increase in the unemployment rate in other major economies ([7]). In the United States ([8]), between the first and second quarter of 2020, the unemployment rate rose sharply from 3.9% to 13.4%, but then fell to 6.8% in the last quarter of 2020. These movements were also mitigated by the downward dynamics of the activity rate, which fell to 72.0% in the second quarter of 2020 (-2.3pp compared to the last quarter of 2019) and rose by 1.0pp in the second half of the year. In Japan, unemployment rose moderately (to 3.1% in the last quarter of 2020, +0.8pp compared with the same quarter a year ago), as the activity rate remained broadly stable. In the UK, the unemployment rate reached 4.6% in the third quarter of 2020 (+0.9pp compared with the last quarter of 2019) (see *Chart 1.12*).

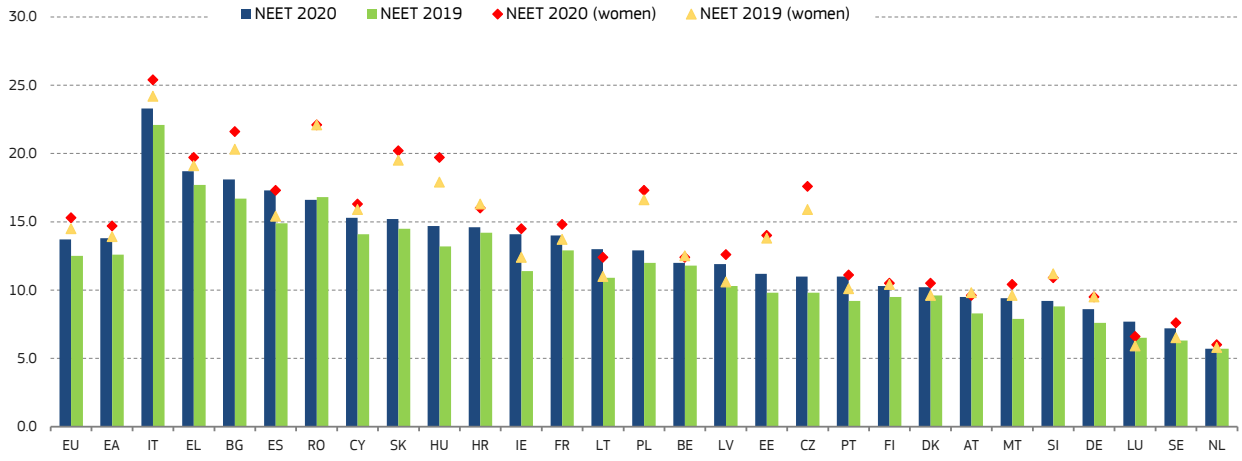
([7]) A thorough analysis of the international perspective of the recent development of the European labour market can be found in European Commission (2020c)

([8]) Direct comparisons with the development of the unemployment rate in the US should be avoided; there, temporary lay-offs are always counted as unemployed. They are counted to a large degree as employed in the EU, following ILO recommendations.

Chart 1.12

The NEET rate increased in almost all Member States

Young people aged 15-29 neither in employment nor in education and training (NEET), % of total population



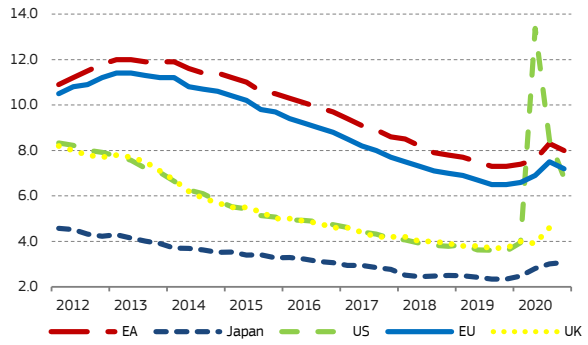
Source: Eurostat, LFS [lfsi_neet_a]

Click here to download chart.

Chart 1.13

The unemployment rate is rising in the EU and other major economies

Unemployment rate (% of labour force, 15-74 years)



Source: Eurostat [une_rt_q], OECD

Click here to download chart.

Youth unemployment in the EU climbed by 1.8pp in 2020 to 16.8% compared with 2019. The strong rise of youth unemployment confirms that the impact of COVID-19 on young people, aged 15-24, was stronger than other age categories as pointed out in section 3.1. Except for Greece (-0.2pp), youth unemployment increased in all Member States, and especially in Lithuania (+7.7pp), Estonia (+6.8pp), Luxembourg (+6.2pp), and Slovenia (+6.1pp). The youth unemployment rate rose to 38.3% in Spain, and remained at around or above 30% in Greece (35.0%) and in Italy (29.4%). Youth unemployment increased more for women (+2.0pp to 16.7%) than for men (+1.7pp to 16.9%).

The percentage of young people aged 15-29 who are neither in employment nor in education and training (NEET) increased by 1.2pp to 13.7% in 2020. The NEET rate rose most strongly in Ireland (+2.7pp), Spain (+2.4pp) and Lithuania (+2.1pp), while it declined in Romania (-0.2pp) and remained stable in the Netherlands. On average in the EU, it increased less for women than for men (+0.8pp versus +1.4pp) but it was still on average higher for women by 3.2pp (15.3% versus 12.1%). The NEET rate of women exceeded that of men the most in Czechia (12.9pp), Romania (10.7pp), and Slovakia (9.8pp), while the NEET rate was higher for men only in Luxembourg (by 2.1pp) and Lithuania (by 1.2pp).

Long-term unemployment rates

Long-term unemployment fell by 0.3pp in 2020 to 2.5% of the active population, although it increased in the second half of the year. Since long-term unemployment refers to people who have been unemployed for 12 months or more, the figures for workers who lost their jobs during the 2020 crisis will only become available in 2021. However, the rise in long-term unemployment in the second half of 2020 suggests that some of the people, who were already unemployed before the COVID-19 outbreak were not able to find a job and that unemployment effects started to be longer than twelve months. The rate remained higher for women (2.6%) than for men (2.4%), with similar dynamics in 2020 for both. Very long-term unemployment, which refers to people who have been unemployment for at least 24 months, fell by 0.3pp to 1.4%, but also picked up in the second part of 2020.

The long-term unemployment rate decreased in most Member States, but was on the rise in several of them. The largest drops between 2019 and 2020 were observed in Greece (-1.3pp to 10.9%), and Italy (-0.9pp to 4.7%), while it grew the most in Lithuania (+0.6pp to 2.5%), and Luxembourg (+0.4pp to 1.7%).

3.3. Activity rates and extended labour force

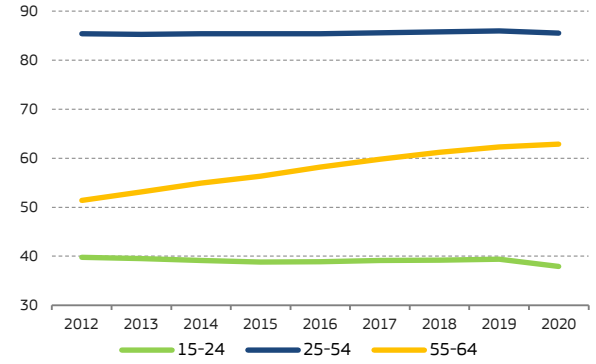
The COVID-19 pandemic pushed 1.8 million people into inactivity. The EU activity rate for people aged 15-64 declined in 2020 by 0.5pp to 72.9%. The fall was lower for women than for men (-0.3pp and -0.7pp) and it disproportionately affected young people, for whom the activity rate went down by 1.5pp. On the contrary, the activity rate increased for

people aged 55-64 (+0.6pp), particularly for women (+0.8pp) (see *Chart 1.14*).

Chart 1.14

The activity rate kept rising for older workers also in 2020 as well, but declined for young workers

Activity rate by age, % of population



Source: Eurostat, LFS [lfsi_emp_a]

Click here to download chart.

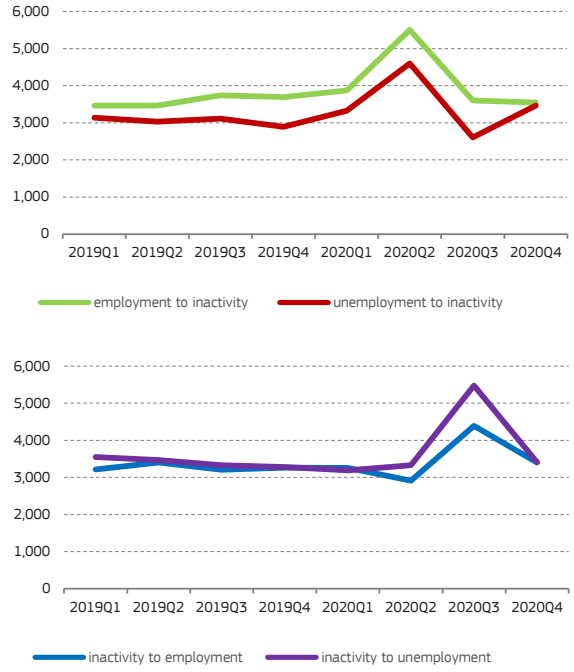
Transitions to inactivity accelerated in the first half of 2020, during the first wave of the pandemic ([9]). Already in the first quarter of 2020, the number of people going into inactivity from both employment and unemployment started to rise, and the strength of these transitions peaked in the second quarter with 36.8% of the unemployed and 3.5% of the employed becoming inactive. In the third quarter, when lockdown measures were relaxed and the economy opened up, flows to inactivity reverted to 2019 averages, while transitions from inactivity to activity increased strongly. The number of people moving from inactivity into unemployment and employment rose to 5.5 and 4.4 million, respectively, in the third quarter of 2020, compared with 2019 averages of 3.4 million and 3.3 million. In the last quarter of 2020, transitions to inactivity increased – particularly from unemployment – though without reaching the intensity of the second quarter, despite the second wave of the pandemic that hit many Member States. In the same quarter, transitions from inactivity went back to pre-crisis levels (see *Chart 1.15*).

([9]) The EU aggregate data for labour market transitions do not include Germany and Malta.

Chart 1.15

Transitions to inactivity accelerated in the first half of 2020, while the opposite occurred in the third quarter

Labour market transitions for EU, thousand persons



Note: The EU aggregate does not include data for Germany and Malta

Source: Eurostat, LFS [lfsi_long_q]

Click here to download chart.

Similar conclusions can be drawn on the basis of alternative measures of labour utilisation. The labour market slack measures complement unemployment figures to show a fuller picture of the deterioration of the labour market in 2020. They add three further categories to the unemployed: people available to work but not seeking a job, people looking for a job but not available to work, and part-time workers wishing and available to work more (also referred to as 'underemployed'). Together with the rise of unemployment (section 3.2), the increase in labour market slack was mainly driven by the increase in the number of people who are available but not seeking it. Their percentage rose sharply in 2020 and especially in the second quarter of the year, when it went up 1.9pp (4.2 million people) from the last quarter of 2019 to 4.9% of the extended labour force ([10]), only to decline to 3.7% in the third and fourth quarter. Instead, the percentage of people looking for a job but not available to work, and of involuntary part-timers remained quite stable in this period, and stood at 0.7% and 2.9%, respectively, of the extended labour force in the last quarter of 2020. In spite of its sharp increase in 2020, the rate of labour market slack remained below the peaks recorded in 2013 (see *Chart 1.16*).

([10]) The extended labour force is composed of both the labour force and the potential additional labour force: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Labour_market_slack_-_unmet_need_for_employment_-_quarterly_statistics

Box 1.1: EU budgetary measures in response to COVID-19

Immediately following the COVID-19 outbreak, the Commission adopted two Coronavirus Response Investment Initiative (CRII and CRII+) which entered into force in April 2021 and allowed the mobilisation of EUR 37 billion ([1]) in cohesion policy funding to support employment, providing working capital to SMEs and allowing for healthcare investment, such as the purchase of protective gear.

In May 2020, the Commission also proposed a revision of the Multi-Annual Financial Framework for the period 2021-2027 with a budget of EUR 1.211 trillion and a temporary recovery instrument, NextGenerationEU, of EUR 807 billion, to provide European people, businesses, regions and cities with the support they urgently need to recover from the coronavirus pandemic.

The Recovery and Resilience Facility is the centrepiece of NextGenerationEU, with EUR 723.8 billion in loans and grants available to support reforms and investments undertaken by EU countries. The aim is to mitigate the economic and social impact of the coronavirus pandemic and make European economies and societies more sustainable, resilient and better prepared for the challenges and opportunities of the green and digital transitions. Member States are working on their recovery and resilience plans to access the funds under the Recovery and Resilience Facility.

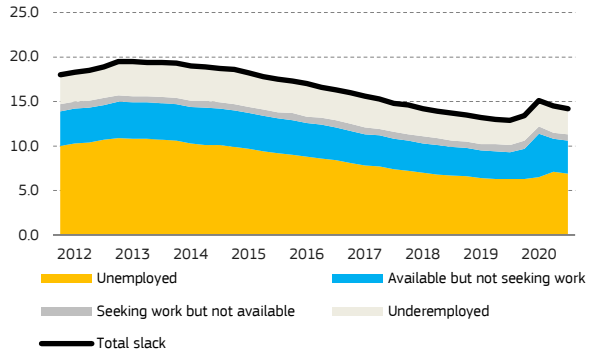
NextGenerationEU also includes EUR 50.6 billion for the Recovery Assistance for Cohesion and the Territories of Europe (REACT-EU). It is a new initiative that continues and extends the crisis response and crisis repair measures delivered through the Coronavirus Response Investment Initiative and the Coronavirus Response Investment Initiative Plus. It will contribute to a green, digital and resilient recovery of the economy. The funds will be made available to the European Regional Development Fund (ERDF), the European Social Fund (ESF), and the European Fund for Aid to the Most Deprived (FEAD). These additional funds will be provided in 2021-2022 from NextGenerationEU.

([1]) This amount, as well as all the others in this box, are expressed in current prices.

Chart 1.16

Discouraged people increased sharply during the first half of 2020

Percentage of the extended labour force, 15-74 years



Source: Eurostat, LFS [lfsi_sla_q]

Click here to download chart.

The increase in the labour market slack also disproportionately affected young people. Between the last quarter of 2019 and the fourth quarter of 2020, the percentage of young people, aged 15-24, on the margins of the labour market increased by 4.3pp to 31.1% of the extended labour force. Men were also slightly more affected than women (+1.3pp to 12.3% versus +1.2pp to 16.3%, between the fourth quarters of 2019 and 2020).

4. SOCIAL SITUATION, POVERTY AND INCOME DEVELOPMENTS

This section focuses on the recent social and income trends, devoting particular attention to the indicators included in the scoreboard underpinning the European Pillar of Social Rights. After the presentation of recent evidence on the sanitary crisis, it describes how the pandemic affected the living conditions of EU households. In this respect, it documents income trends, the role of social transfers in mitigating income inequality, trends in social protection expenditure at EU level and by country and the multifaceted nature of poverty and social exclusion. Thus, the challenges for vulnerable groups in a variety of domains are discussed. Finally, recent demographic developments are documented, with a focus on healthcare and ageing as well as recent trends in energy poverty and housing conditions.

A pandemic with a high human toll

The COVID-19 crisis has caused severe human suffering and loss of life. By early June 2021 ([11]), the coronavirus had infected almost 33 million people and had caused almost 733 000 deaths in the EU ([12]). Among the people infected by the virus and who recovered, many suffered from 'long-COVID' and remained with after-effects. COVID-19 mortality has a clear social gradient, which is a reminder of the importance of the social determinants of health. The virus has also disproportionately hit older people and those with underlying health conditions. Almost everywhere in the EU, at least 90% of COVID-19 deaths were amongst people aged over 60. In many countries that have established surveillance systems in long-term care (LTC) facilities, about 20-60% of COVID-19 deaths were amongst residents of those facilities ([13]).

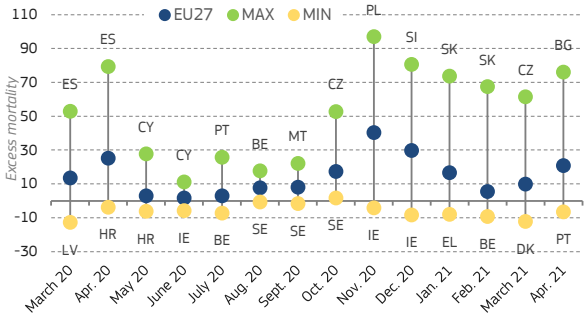
Excess mortality reached two peaks, in April (+25.2%) and November 2020 (+40.3%, followed by +29.9% in December), although countries were hit to varying degrees. An indication of the severe impact induced by COVID-19 in 2020 can be derived from the number of deaths compared to previous years. The excess mortality observed was the result of deaths directly attributed to COVID-19 ([14]) or indirectly linked to it, caused by delayed or foregone treatments due to severe pressures on the health care system ([15]).

In some countries, excess deaths were dramatically high, when compared with the average mortality from 2016 to 2019. At national level the highest peaks were initially registered in Spain (79.4%) and Belgium (73.1%) in April 2020. Thereafter, over the period May-September, excess mortality was below 30% across all countries. Important peaks were registered notably in Poland (97.0%), Bulgaria (94.4%), Slovenia (93.1%) and Czechia (75.8%) in November 2020, in Slovenia (80.6%), Bulgaria (74.5%) and Lithuania (68.6%) in December 2020, and in Slovakia (73.7%) in January 2021.

Chart 1.17

Excess mortality reached 50% or more in the hardest-hit EU countries

Excess mortality by month (%) in the EU-27 and in countries with the highest and lowest rate



Note: The monthly excess mortality indicator is expressed as the percentage rate of additional deaths in a month, compared to a baseline period. The higher the value, the more additional deaths have occurred compared to the baseline. A negative value means that fewer deaths occurred in a particular month compared with the baseline period. The baseline is given by average monthly deaths in the period 2016-2019.
Data is provisional for all countries.

Source: Eurostat, dataset: DEMO_MEXRT. EMPL calculations.

Click here to download chart.

Over the entire year, an increase in the number of deaths was recorded in almost all EU regions, albeit heterogeneously, with some areas witnessing an excess mortality around 30% higher in comparison to the 2016-2019 average (e.g. Lombardy or Madrid, *Chart 1.18*).

The trends over the first months of 2021 are disturbing due to the emergence of new variants. In 13 Member States, deaths related to COVID-19 between January and early June 2021 ([16]) have outnumbered the total number of deaths due to COVID-19 over the whole previous year. The increase in the number of new COVID-19 deaths confirmed since 1 January 2021 over those confirmed by 31 December 2020 has been largest in Estonia (+404%), Slovakia (+393.5%), Latvia (+261%), Hungary (+200%) and Cyprus (+185%), and smallest in Belgium (+26%), Sweden (+44%) and the Netherlands

([11]) Data from 2020 week 1 to 2021 week 23.

([12]) Figures from the European Centre for Disease Prevention and Control (ECDC).

([13]) European Centre for Disease Prevention and Control, Surveillance data from public online national reports on COVID-19 in long-term care facilities, https://www.ecdc.europa.eu/en/all-topics-z/coronavirus/threats-and-outbreaks/covid-19/prevention-and-control/LTCF-data

([14]) At the beginning of the pandemic, deaths were partially wrongly attributed to other causes and not to COVID-19 due to low testing capacity.

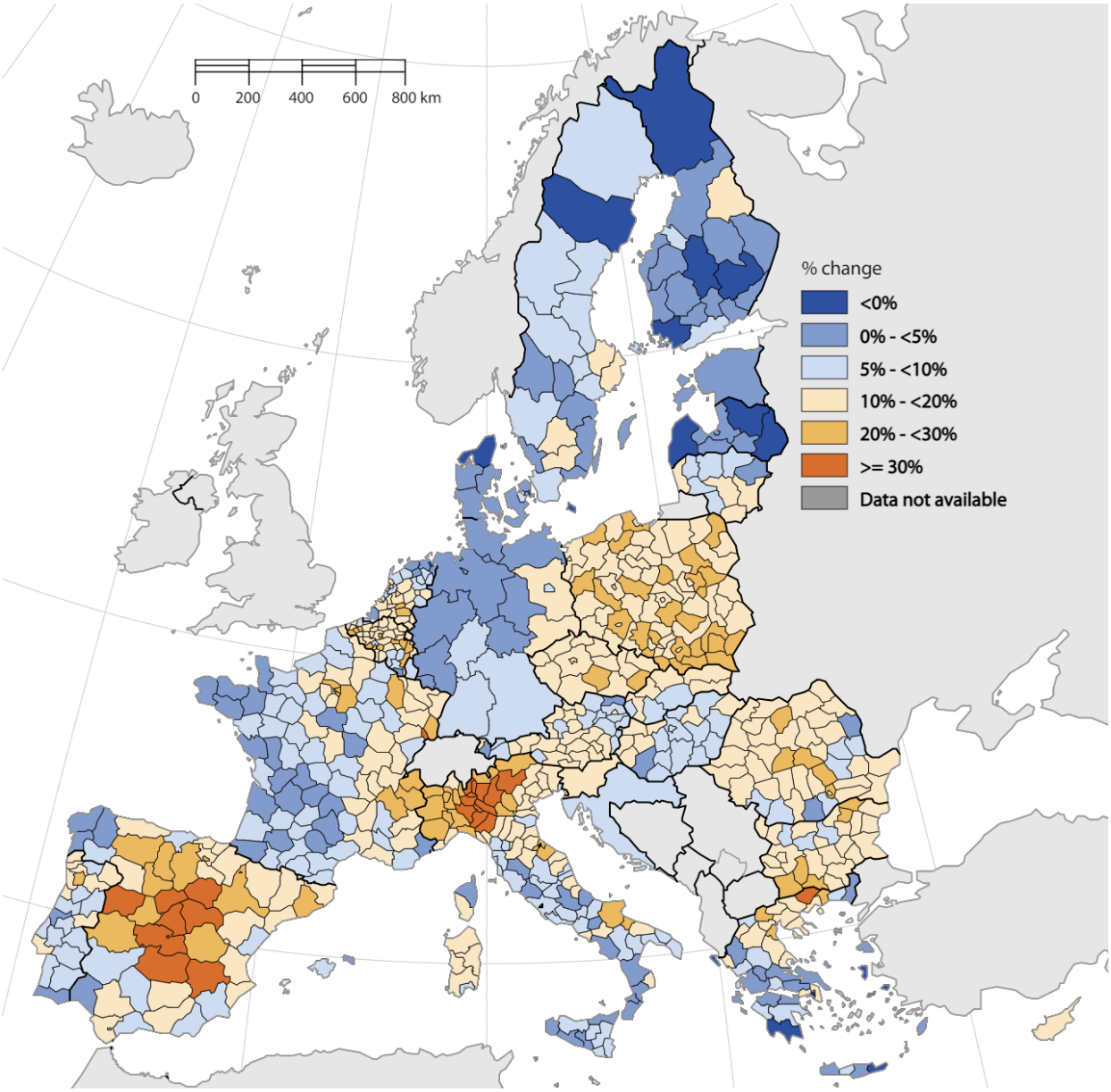
([15]) Eurostat (2021), *Statistics explained, Excess mortality – statistics*, https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Excess_mortality_-_statistics

([16]) Data from 2020 week 1 to 2021 week 23.

Chart 1.18

Some areas where affected by an excess mortality above 30% as a consequence of COVID-19

Mortality change in 2020 compared to the 2016-2019 average, EU27, NUTS 3 level



Note: The excess mortality is the percentage of additional deaths in 2020 compared to a baseline period. The baseline period is the annual average number of deaths in 2016-2019.EE and MT: NUTS 2 level. DE, HR and SI: NUTS 1 level. Weeks 1 and 53 have been adjusted in 2020 to reflect the exact number of days in 2020. Regions with incomplete data are not included. Data is provisional in BE, CZ, DK, DE, EE, EL, ES, FR, HR, IT, CY, HU, MT, AT, PT, SI and SK.

Source: Eurostat, dataset: DEMO_R_MWK3_TS. EMPL calculations.

Click here to download chart.

(+52.5%) ([17]). These trends refer to relative changes that are linked to the dynamics and the timing of the pandemic at national level ([18]).

The current crisis may exacerbate pre-existing inequalities, if not aptly addressed. Different groups have been at higher risk of being infected by the virus or have been impacted in a disproportionate way in all life aspects: health (including psychological stability), work, income and savings, school, during the lockdown. Inequalities in household wealth and housing conditions have impacted current living standards and the ability to go through the lockdown measures smoothly. There are indications that educational inequalities have been magnified with the

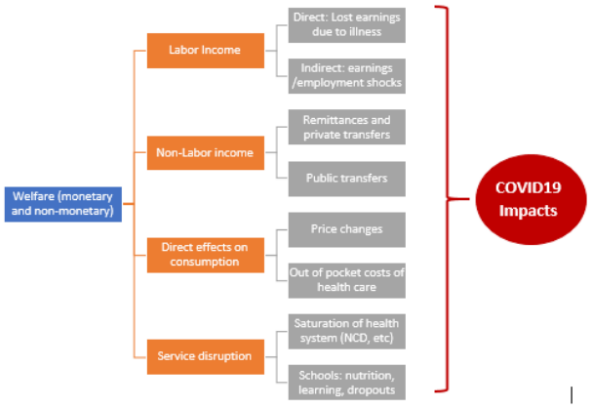
([17]) Figures from the European Centre for Disease Prevention and Control. Both information on COVID-19 deaths and on excess mortality have advantages and limits. The number of COVID-19 deaths may be underreported due to a low testing capacity. Comparability issues may arise too when the estimates are based on the probability of the death being due to COVID-19 and national definitions vary.
Excess mortality is an estimate based on the comparison between the recorded deaths over a period and the expected deaths based on past trends. Although most of this excess mortality is due to the pandemic, it is not equal to the COVID-19 death rate. Furthermore, excess mortality is influenced by different factors, some increasing all-cause mortality during the pandemic, others reducing it. For a more complete discussion on the topic, see http://www.healthdata.org/special-analysis/estimation-excess-mortality-due-covid-19-and-scalars-reported-covid-19-deaths

([18]) For instance, the relatively small change in Belgium is partly due to the high number of deaths recorded in 2020. On the contrary, Estonia was not hit hard by the virus in 2020, but its impact increased in 2021.

transition to remote teaching and are likely to negatively affect future earnings of lower-income pupils ([19]). These vulnerabilities affect some specific groups that are more exposed to these effects and less equipped to respond to them ([20]). Among these groups, whose outcomes are monitored and discussed in this chapter, there are older adults, women, children and families (especially single-parent households), students, persons with disability, migrants and marginalised and segregated minorities (such as Roma), and the homeless.

In the face of many social challenges, income protection and inequality mitigation have the potential to cushion its short-run impacts. The most severe crisis since World War II with a stark contraction in GDP will inevitably bring about a deterioration of the economic and social situations. Individuals and households have been affected by the pandemic through different channels: income loss, consumption, and service disruption (*Figure 1.1*). The pandemic has had a severe impact on labour income and wealth of EU households but support measures have cushioned the effects. There is a risk that the effects of the COVID-19 crisis on living and working conditions might undo and reverse pre-COVID-19 improvements. The pandemic may also have long term impact on health, including mental health. However, in the short run there are indications that the exceptional income support for the most vulnerable employment groups along with automatic stabilisers, i.e. tax-benefit systems, have cushioned the reduction in market income, notably for lower income households ([21]). This seems to have kept income inequality in check, at least during 2020. Coverage of (in-kind) benefits, in particular of those related to health, may play an important role in redistributing income, reducing poverty ([22]). However, this is not routinely measured at European level.

Figure 1.1
The poorest and most vulnerable risk suffering income loss and service disruption during the COVID-19 crisis
Main channels for short-term impacts of COVID-19 on welfare



Source: World Bank, April 202019, Poverty and Distributional Impacts of COVID-19: Potential Channels of Impact and Mitigating Policies. http://pubdocs.worldbank.org/en/980491587133615932/Poverty-and-distributional-impacts-of-COVID-19-and-policy-options.pdf

Click here to download figure.

4.1. Income trends: the COVID-19 crisis reversed income improvements observed until 2019

Before the fall in disposable income triggered by the COVID-19 outbreak, living standards of EU households were, on average, improving. In 2019 ([23]), an estimated number of 91.3 million people were living at risk of poverty or social exclusion (AROPE), which was 17.3 million fewer than at the peak of 2012. The improvement in the social situation was driven by a reduction in severe material deprivation, from 26.7 million people in 2018 to 23.8 million people in 2019. In parallel, median incomes increased in most Member States ([24]).

Severe losses in GDP per capita in all Member States

A sharp reduction in economic activity was observed in 2020 across EU Member States. The deepest recession that hit the EU since World War II led to a marked decline in GDP per capita in 2020 compared to 2019 in all EU Member States but Ireland. However, the magnitude of this contraction was heterogeneous across Member States (*Chart 1.19*). Spain and Hungary recorded a dramatic fall in GDP per capita by more than 10% compared with 2019; Czechia, Austria, and Italy saw their GDP per capita shrink by more than 7%. Only five Member States, including the Scandinavian countries, recorded

([19]) JRC (2020).

([20]) Among the reasons of vulnerability during the COVID-19 crisis: service disruption that hampered the search for support; difficulties for social workers to access the poorest; pre-existing difficult living conditions with negative consequences on health and mental well-being, home-schooling, and access to social benefits.

([21]) See Chapter 2.5 for country-specific simulations of disposable income inequality, with distributive insights for the five quintiles of the income distribution, in the absence of discretionary policies.

([22]) European Commission (2021b).

([23]) Note on the reference year: **EU-SILC data**, used in poverty and inequality indicators, reflect **incomes of the previous year** (except for Ireland where incomes refer to the interview period). However, in this document, **the reference year is the survey year and not the income year**. This choice is made for consistency with indicators commonly used: Eurostat indicators and most of EMPL monitoring tools and reports use the survey year. Moreover, AROPE combines AROP, VLWI (previous year) and SMD (survey year). **The 2019 reference year is based on EU-SILC 2019, which reflects the 2018 income year and activity status in 2018.**

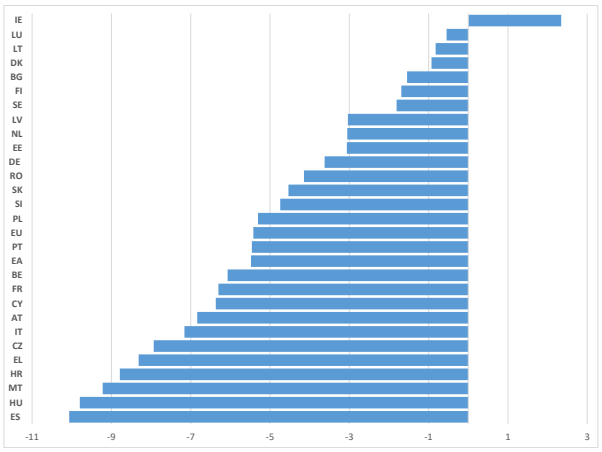
([24]) See *Box 1.3.*

a reduction in GDP inferior to 2% compared to the previous year (*Chart 1.19*) ([25]) .

Chart 1.19

Real GDP per capita fell sharply in all Member States

Real GDP per capita. Yearly reduction (%) 2019/2020



Note: The nominal GDP per capita converted into real values by deflating with the price-index of household final consumption expenditure [prc_hicp_aind]

Source: Eurostat: nama_10_pc and SGD_10_10

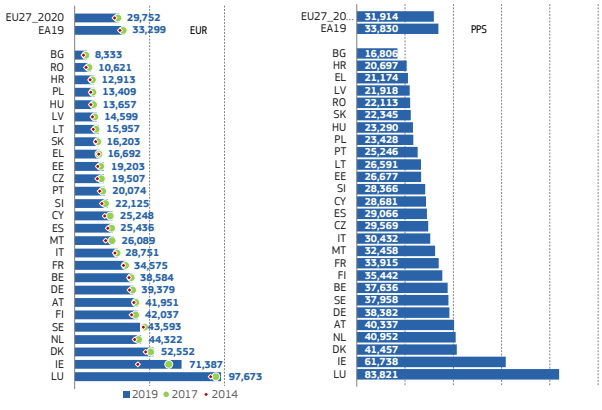
Click here to download chart.

This unprecedented loss in GDP per capita will partly undo, at least in the short run, the improvements recorded in all Member States, except Sweden, since 2013 (SDG 8, left panel, *Chart 1.20*). Moreover, differences in the levels of GDP per capita across countries remained pronounced, even correcting for purchasing power parities (right panel, *Chart 1.20*).

Chart 1.20

Real GDP per capita had been increasing in all Member States until 2019, although differences among them are persisting

Real GDP per capita (left - 2013, 2016 and 2019) and purchasing power adjusted GDP per capita (right - 2019)



Source: Eurostat: nama_10_pc and SDG_10_10.

Click here to download chart.

Heavy losses in household disposable income though discretionary income support policies mitigate them

Policy action helped cushion the impact of the reduction in GDP on disposable household incomes. Different factors helped to absorb part of the fall in GDP per capita on household disposable incomes. In the face of a steep reduction in GDP per capita, an exceptional policy response in terms of income support, via short time work schemes and similar measures mitigated the impact on disposable incomes.

Real gross disposable household income (GDHI) recorded the largest loss since data became available. In the second quarter of 2020 GDHI fell by almost 3% in comparison to the second quarter of 2019 (*Chart 1.21*). As non-essential activities were shut down and many non-teleworkable occupations could no longer be performed ([26]), the overall loss in compensation of the employees amounted to 5.8%. In parallel, net property income fell significantly, by 2.5%. However, net social benefits, including extraordinary wage compensations, increased by 4.8% and therefore helped to mitigate labour-income losses.

Signs of recovery in the gross disposable household income were already visible in the third quarter of 2020. As all Member States relaxed the restrictions in place in the third quarter, the year-on-year reduction in employees' compensation was much more contained than for the second quarter (-1.1%), while the income support of net social benefits remained robust (2.3% increase). Thus, GDHI in the third quarter rose by 2.7% compared to the third quarter in 2019. In addition, social benefits as well as income and wealth tax relief measures played an alleviating role on GDHI in the third quarter.

After the rebound in the third quarter, disposable household income recorded a slowdown in the fourth quarter of 2020. The restriction measures put in place in the fourth quarter of 2020 to curb the second wave of the pandemic led to limitations to economic activities. This resulted in a reduction in labour income (-0.5%). Nevertheless, net social transfers continued to exert a cushioning effect on disposable income also in this quarter leading to an overall increase in GDHI by 0.6% compared to the fourth quarter in 2019.

For the entire 2020, social protection expenditure is expected to increase markedly as a result of the COVID-19 crisis. Social protection expenditures played a major role in shielding households in a variety of policy domains. Although harmonised comparative data from ESSPROS to document this increase will only be available next year, the exceptional policy measures adopted to cushion employment losses and provide income support, coupled with pre-existing social policies, will result in a likely increase in the expenditure on unemployment, families, housing, and combating social exclusion (*Box 1.2*).

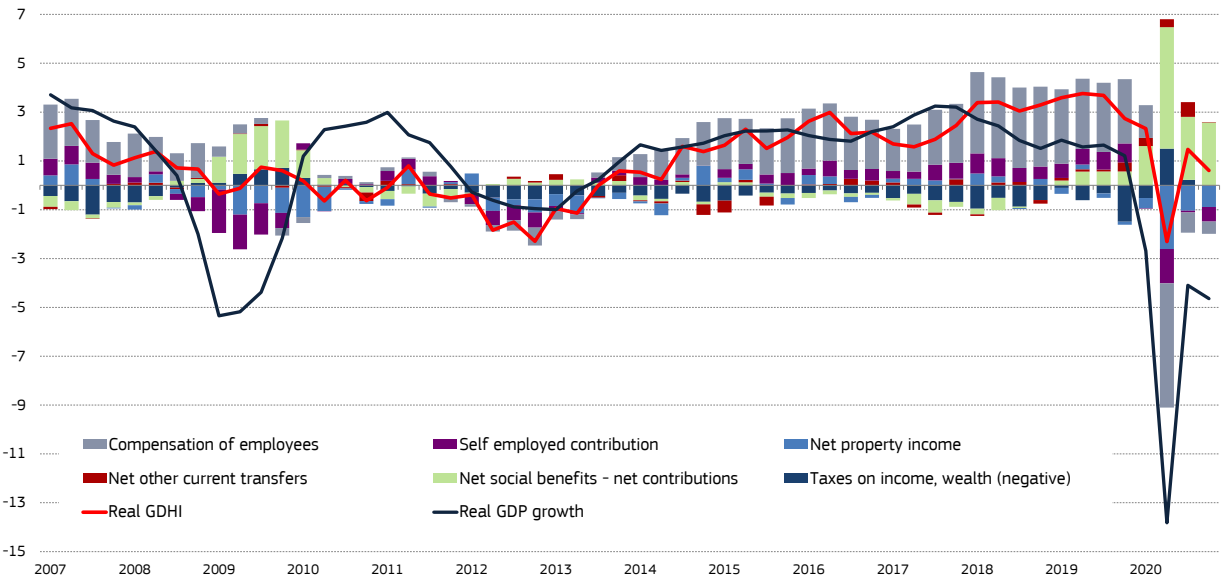
([25]) The ranking of EU Member States can slightly change with respect to *Chart 1.3* due to different population growth accounted for in the GDP per capita figure.

([26]) See European Commission (2020c) for an assessment of job losses for contact-intensive occupations.

Chart 1.21

In 2020 Q2 European households experienced a dramatic fall in disposable income

GDP and GDHI (% change on previous year), and contribution of GDHI components (pp), EU



Note: The nominal GDHI is converted into real GDHI by deflating with the price-index of household final consumption expenditure [prc_hicp_aind].

Source: DG EMPL calculations based on Eurostat data, National Accounts [nasq_10_nf_tr, namq_10_gdp]; Data non-seasonally adjusted

Click here to download chart.

The estimated loss in disposable income would have been much higher in 2020 in the absence of discretionary policies. While harmonised microdata on income, living conditions, and wealth for all EU Member States in 2020 are not available yet, a number of studies have carried out simulations or launched ad-hoc surveys to shed light on income trends that help predict some short-term effects. Recent EUROMOD simulations look at the effect of discretionary policies, adopted both as wage compensation measures and tax-benefit reforms, against the baseline of no policy reform ([27]). These estimates show that the discretionary policies adopted in 2020 had a mitigating impact on disposable income in all Member States ([28]).

According to Eurostat flash estimates ([29]), AROP for population aged 18-64 remains stable at EU level in 2020 (+0.2%). For about half of the countries a moderate increase is estimated in the AROP 18-64, which is significant in Portugal, Greece, Spain, Italy, Ireland, Slovenia, Bulgaria, Austria and Sweden.

While the median employment income for workers is estimated to have decreased by 7.2%, the flash estimates show a slight increase for the median household income (+0.7%). It is important to note that losses in employment income are unequally spread between countries and particularly strong for the most vulnerable sub-groups of the working population. Both the overall losses and their skewed distribution are alleviated to a large extent by governmental measures and in particular short-term work schemes activated to address the Covid-19 economic challenges.

Furthermore, the evolution of inequality indicators in the EU is not exclusively related to the transitions experienced in the labour market. For the 65+ age group a consistent decrease in AROP is estimated, which is particularly evident in countries such as Bulgaria, Czechia, Estonia, Ireland, Cyprus and Sweden, where we see a decrease in AROP of over 2%. This effect might be due to the relative stability, or even growing trend, of pensions, which were protected against the labour shocks due to the crisis, as it occurred also during the 2008 financial crisis.

4.2. Inequality trends

The impact of the COVID-19 crisis on disposable income inequality depends very much on the policy response. Disposable income inequality is the result of market income inequality and the subsequent mitigation effect of taxes and benefits. Market income inequality ([30]) is produced in the labour and capital markets and is expected to rise as employment-related income losses have been concentrated among

([27]) See Chapter 2.5 for country-specific simulations of disposable income trends in 2020 in the absence of discretionary policies. These simulations provide a general indication of the joint effect of wage compensation policies on top of existing tax-benefit policies.

([28]) EUROMOD is used to simulate the impact of these discretionary policy measures exceptionally introduced or activated by national governments to address the Covid-19 economic challenges, in particular, policies to preserve jobs (wage compensation schemes) and income support to the self-employed .

([29]) All figures provided are part of the experimental statistics produced by Eurostat in the frame of advanced estimates on income inequality and poverty indicators. The results refer to the yearly change 2019-2020.

([30]) Market income sources are labour and capital income.

low-income households ([31]). However, the mitigation of income support policies might curb this rise in market inequalities.

The joint action of discretionary measures and automatic stabilisers may have managed to counter the increase in market income inequality. Most Member States had existing wage compensation schemes or adopted new ones to provide employees absent from work due to COVID-19 restrictions with monetary compensations. Moreover, in addition to these measures for workers, existing automatic stabilisers (tax-benefit systems) are expected to curb increasing market income inequalities – or at least those related to the initial shock. Indeed, the tax-benefit effect on market income inequality was highly redistributive already before the crisis, albeit heterogeneously across Member States (see *Box 1.2*).

Exceptional income support policies seem to have managed to offset or reverse the increase in disposable income inequality in 2020. According to the EUROMOD simulations presented in chapter 2, discretionary policy measures taken by EU Member States had a cushioning effect on disposable income inequality. They managed to offset or even reverse the inequality-increasing pattern of the COVID-19 crisis in 2020 in most EU countries ([32]). However, the degree to which the increase in inequality as a result of the crisis was contained seems to vary markedly across countries.

Recent ad-hoc surveys also document that automatic stabilisers and exceptional policy support have mitigated or even reversed the increase in market income inequality. Clark et al. (2021) assess the trend of disposable income inequality with ad-hoc income surveys administered in France, Germany, Italy, Spain and Sweden in 2020 ([33]). Two different time patterns emerge considering the countries surveyed. Inequality, as measured by the Gini index, increased in all Member States surveyed between January and May, while in September 2020 it returned to values lower than in January 2020 everywhere except for Germany. This drop in inequality may well reflect that the poorest households benefitted more from government support during the pandemic. A similar result is found by Raitano and Gallo for Italy with a microsimulation model ([34]).

However, the medium-term impact of the COVID-19 crisis on income inequality will depend on the degree of inclusiveness of the post-COVID-19 recovery. Moreover, financial and non-financial wealth inequality, whose trends are linked to trends in income inequality, seems to have worsened, although evidence in this respect from wealth microdata is not yet consolidated ([35]).

([31]) Eurostat (2020a).

([32]) See Chapter 2.5.

([33]) Clark et al. (2021).

([34]) Gallo and Raitano (2020).

([35]) OECD (forthcoming).

Box 1.2: Disposable income trends and income inequality before the COVID-19 crisis

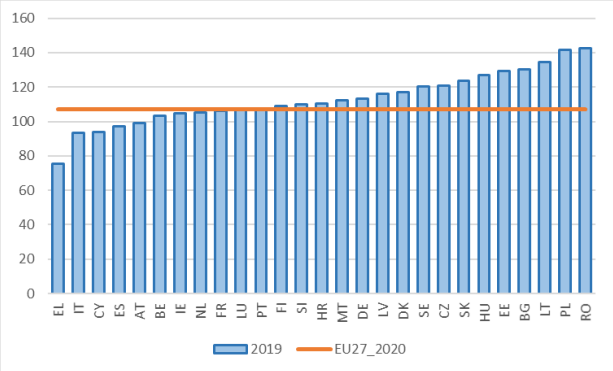
Disposable income per capita in 2019 had recovered from the previous crisis in most Member States

In 2019, the per capita disposable income of households ([1]) (GDHI per capita) maintained a rising trend (SDG 10). Most Member States recovered from the previous crisis with disposable income per capita well above the 2008 level. However, five Member States were still below their 2008 level (Chart 1). In particular, GDHI per capita in 2019 was approximately 24% less than in 2008 in Greece, 6% less in Italy and Cyprus, over 2% less in Spain, and just under 1% less in Austria.

Chart 1

GDHI per capita in 2019 in five Member States was not yet at 2008 levels

Gross disposable income of households in real terms per capita index (2008=100)



Note: Year 2019

Source: Eurostat, National Accounts [tepsr_wc310]

Aggregate disposable household income benefitted from higher income from work

Aggregate disposable income of households in the EU27 increased further in 2019. Gross disposable household income increased in real terms from a low point in 2012-2013. Household income continued to benefit from the expansion in economic activity and improved labour market conditions ([2]). In 2019, GDHI annual growth in real terms was almost 2% in the EU27 and 1.6% in the euro area.

Households in 2019 continued to benefit from higher income from work, while social benefits stabilised in recent years. The labour income of both employees and self-employed resumed its growth in 2014, mainly due to the recovery in the labour market, and has continued since then. At the aggregate level, households began to make higher social contributions as market incomes improved. After the EU27 balance of social contributions had stayed negative for a few years (2016-2019), it turned positive in 2019.

More social protection expenditure went towards old-age pensions and health needs

By 2018 (latest available data), social protection expenditure in the EU27 shifted to structural expenses (old-age pensions and healthcare, Chart 3). The increases in social benefits in the years 2013 to 2018 (Chart 2, left panel) were mainly due to further increases in spending on old age (driven partly by demographic factors) and on healthcare. By contrast, unemployment benefits stabilised after 2010 and were declining from 2014, as the economic environment improved over this period. Benefits for families, housing, and combating social exclusion increased slightly from 2013.

Between 2012 and 2018, expenditure on unemployment benefits declined in almost all Member States. As labour markets improved, unemployment benefits declined in Belgium, Cyprus, Greece, Denmark, Ireland, the Netherlands, Portugal and Spain (Chart 2, left panel). However in Greece, due to large crisis-related fiscal consolidations, old-age benefits decreased as well as sickness and disability benefits. Finland too spent less on sickness and disability, while six other Member States spent less on social exclusion.

([1]) Gross disposable household income (GDHI) is the amount of money that all individuals in the household sector have available for spending or saving after taxes, social contributions and benefits. The household sector is combined with non-profit institutions serving households (NPISH) under a single heading. The NPISH sector is relatively small. Yearly gross disposable income of households and adjusted gross disposable income of households in real terms per capita can be found on the Eurostat non-financial transactions database: nasa_10_nf_tr. Quarterly unadjusted and seasonally adjusted, gross disposable income of households and adjusted gross disposable income of households in real terms per capita are available on the Eurostat non-financial transactions database: nasq_10_nf_tr. EU and EA19 quarterly seasonally adjusted, adjusted gross disposable income of households in real terms per capita (% change on previous period) are available under nasq_10_ki.

([2]) See European Commission (2019, Chapter 1).

(Continued on the next page)

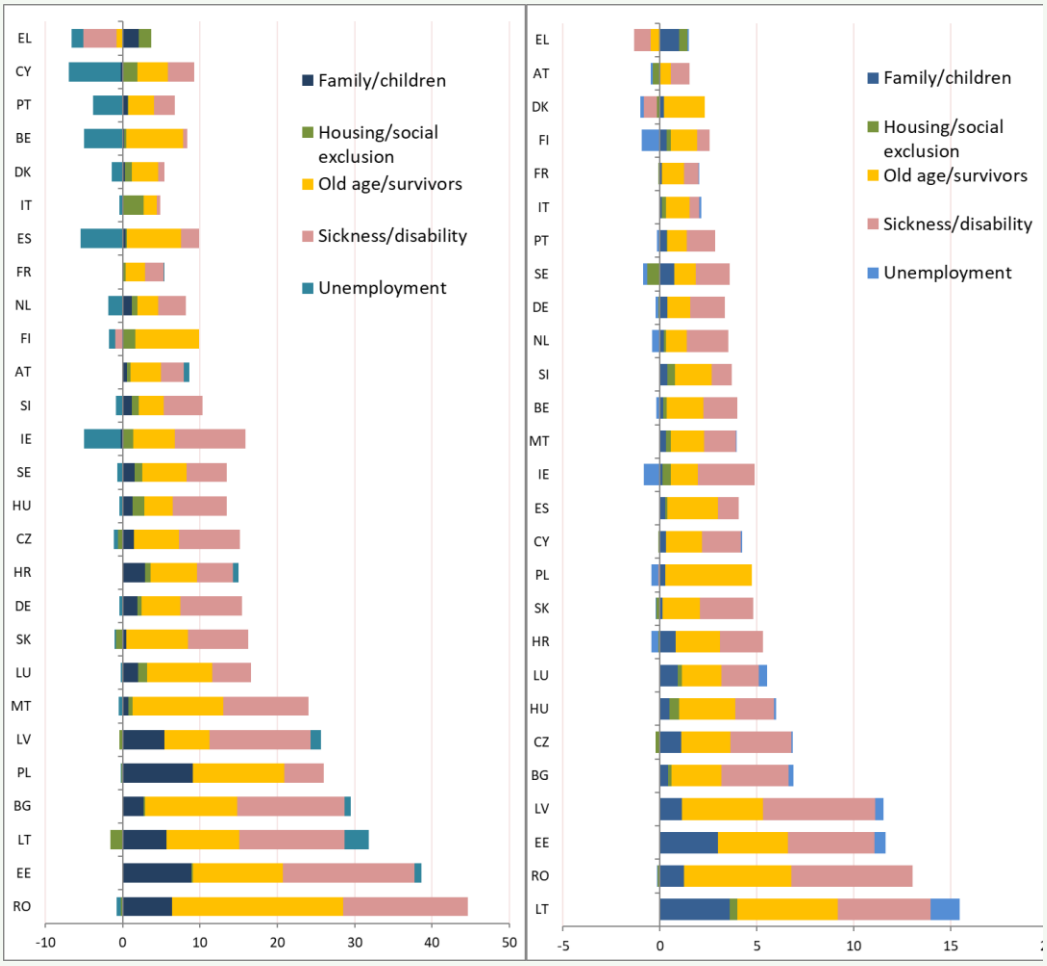
Box (continued)

More recent trends highlight that social protection expenditure continued to increase in nearly all Member States in 2018 compared to 2017. Benefits related to old-age pensions and survivors' pensions were strengthened in all Member States (partly reflecting demographic change) but Greece, where old-age benefits declined between 2017 and 2018 (Chart 2, right panel). Together with old-age, sickness and disability benefits contributed significantly to the overall growth in most Member States, with the exception of Greece, Denmark and to a lesser extent Poland, where benefits on sickness and disability declined (Chart 2, right panel).

Chart 2

Social protection expenditure increased in most Member States

Growth in social benefits in 2012-2018 (left) and in 2017-2018 (right) (% change, in real terms) and contribution (pps) by functions, EU Member States



Note: The nominal expenditure is converted into real expenditure by deflating with the Harmonized Index of Consumer Prices (HICP)..

Source: Eurostat, ESSPROS [spr_exp_sum] and Price Statistics [prc_hicp_aind]; DG EMPL calculations

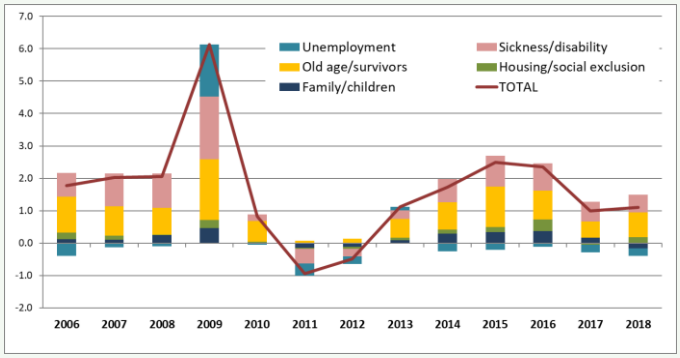
(Continued on the next page)

Box (continued)

Chart 3

Old-age pensions and health-related expenditure drive up social protection spending

Growth in social protection expenditure (% change on previous year, in real terms) and contribution by functions (pps), EU27



Note: The nominal expenditure is converted into real expenditure by deflating with the Harmonised Index of Consumer Prices (HICP).

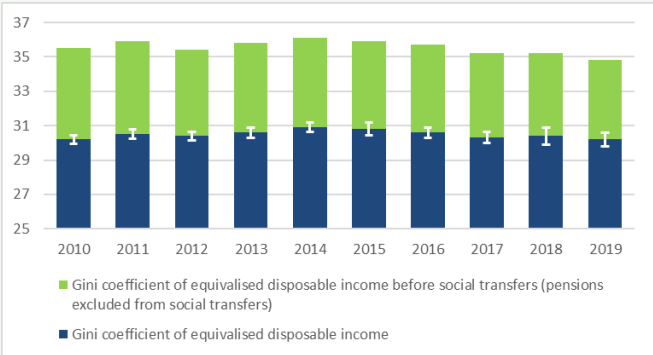
Source: Eurostat, ESSPROS [spr_exp_sum] and Price Statistics [prc_hicp_aind]; DG EMPL calculations

Income inequality was constant in most Member States with some signs of reduction

Chart 4

Income inequality in the EU27 before and after social transfers has been fairly stable over the last ten years

GINI coefficient before social transfers and GINI coefficient of disposable income, EU



Note: The Gini coefficient is an indicator with a value between 0 and 1 (0 to 100 in this chart). Lower values indicate higher equality. In theory, a value of 0 indicates that everybody has the same income while a value of 100 indicates that one person has all the income. Household income is equivalised to take into account household size and economies of scale. The year refers to the EU-SILC survey year; income measured is from the previous year. The confidence intervals may suggest that the yearly changes in the Gini coefficient may not always be statistically significant.

Source: Eurostat, EU-SILC [ilc_di12, ilc_di12c]

In 2019, disposable income inequality for the EU27 appears to have slightly decreased relative to 2018 (30.2 in 2019 compared with 30.4 in 2018) ([3]). Inequality at EU27 level, as measured by the Gini coefficient, increased between 2012 and 2014 and then decreased slightly every year (Chart 4) ([4]). The income quintile share ratio S80/S20 (SDG 10 and headline indicator of the Social Scoreboard) ([5]) indicates that the top quintile had an equivalised disposable income around five times higher than that of the lowest quintile in the EU27.

Progress in reducing income inequality varied across Member States, but social transfers mitigate it significantly

Income inequality varies largely across Member States. Income inequality in 2019, as measured by the S80/S20 ratio, ranged from slightly over 3.3 in the most egalitarian EU countries, i.e. Czechia, Slovakia and Slovenia, to much larger ratios in Romania and Bulgaria, respectively over 7.0 and 8.0. In turn, EU Member States experienced different income inequality trends in the years preceding 2019. In the comparison between 2012 and 2019, while some Member States experienced a statistically significant reduction in inequality, notably Slovakia, Ireland, Poland,

([3]) The reporting year in this chapter refers to the EU-SILC survey year, which measures the income of the previous year. The latest survey 2019 EU-SILC wave refers to income distributions in 2018, except for IE, where survey year coincides with income year. Household incomes are equivalised with the modified-OECD equivalence scale.

([4]) Unless specified otherwise, inequality indicators for the EU-27 are the population-weighted average of national inequality indicators.

([5]) The S80/S20 income quintile share ratio refers to the ratio of total equivalised disposable income received by the 20% of the country's population with the highest equivalised disposable income (top quintile) to that received by the 20% of the country's population with the lowest equivalised disposable income (lowest quintile).

(Continued on the next page)

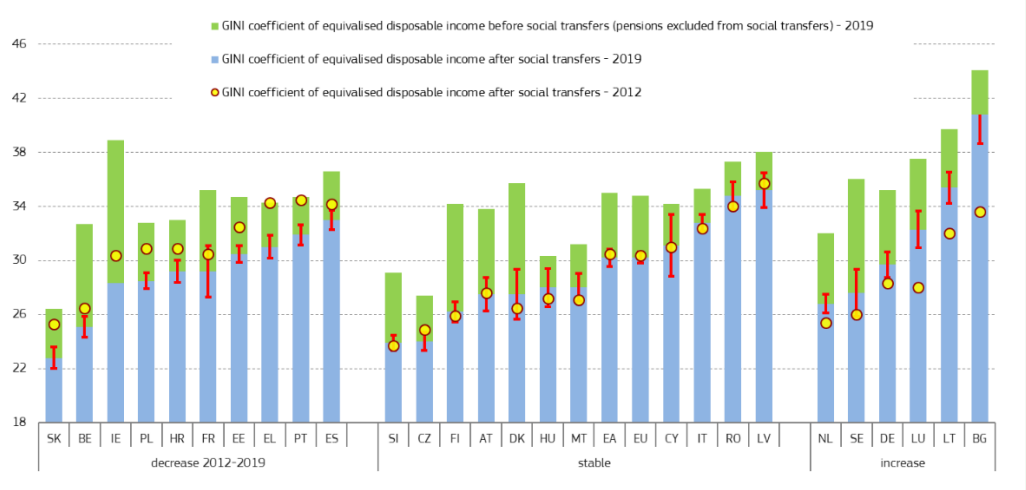
Box (continued)

Croatia, Estonia, Greece and Portugal, in some others it significantly increased (in particular in Bulgaria, Lithuania, and Luxembourg, Chart 5) ([6]).

Chart 5

Trends in income inequality were heterogeneous across Member States

GINI coefficient before social transfers and GINI coefficient of disposable income, 2012/2019, EU Member States



Note: Confidence intervals for the 2019 Gini coefficients suggest that the changes in the Gini coefficients may not always be statistically significant. Standard errors obtained as in Zardo-Trindade and Goedemé (2016).

Source: Eurostat, EU-SILC [ilc_di12, ilc_di12c].

Focusing on shorter-term trends, after a slight decrease in 2016-2017, disposable income inequality was unchanged in 2018 and slightly decreased in 2019 in a number of Member States ([7]).

According to Eurostat flash estimates, inequality remained stable in the 2019 income year in almost all Member States. Flash estimates for the income year 2019, released as experimental data by Eurostat, indicate that no statistically significant change in the S80/S20, is observed between income years 2018 and 2019. This seems to hold in all Member States except Belgium and Sweden, where the S80/S80 ratio is likely to have increased ([8]).

The income share of the bottom 40% of the population (SDG 10) has been stable at around 21% in the EU since 2012 (21.4 in 2019, Chart 6). The trend has been similar in most Member States, although with some exceptions. The greatest decreases took place in Lithuania, Bulgaria, Luxembourg, Sweden and the Netherlands where the income share of the bottom 40% of the population was smaller in 2019 than in 2013, in line with the trends highlighted above with the Gini coefficients.

Income inequality would be much higher without the redistributive effects of transfers. These effects are measured by the difference between inequality of disposable income before and after social transfers ([9]). The extent to which redistribution had an effect on inequality, measured by the impact of social transfers other than pensions on income inequality (displayed by the green segments of the bars in Chart 7), differed across Member States. In 2019, social transfers reduced income inequality by more than 8 pp in Ireland, Denmark, Sweden and Finland compared to a much lower inequality reduction in Hungary, Italy, Latvia, Romania and Portugal (less than 3 pp).

([6]) Although Belgium seems to display a statistically significant reduction in income inequality, caution should be exercised in the time comparison. Indeed, there was a change in data source in 2019, i.e. administrative data were used to replace or complement survey information for some monetary variables.

([7]) Relatively stable short-time trends in inequality between 2017 and 2019 hold for both the Gini coefficient and the S80/S20 ratio.

([8]) See report on Flash Estimates by Eurostat http://ec.europa.eu/eurostat/web/experimental-statistics/income-inequality-and-poverty-indicators

([9]) Disposable income before social transfers include public and private pensions and take already into account taxes paid on income and wealth.

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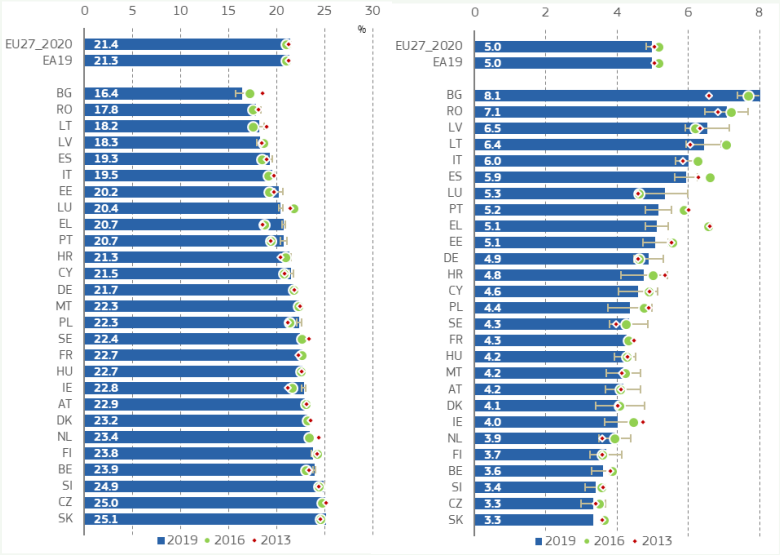
Box (continued)

Chart 6

The income received from the bottom 40% remained stable in 2019

Income share of the bottom 40 % of the population (left) and income quintile share ratio (S80/S20) (right)



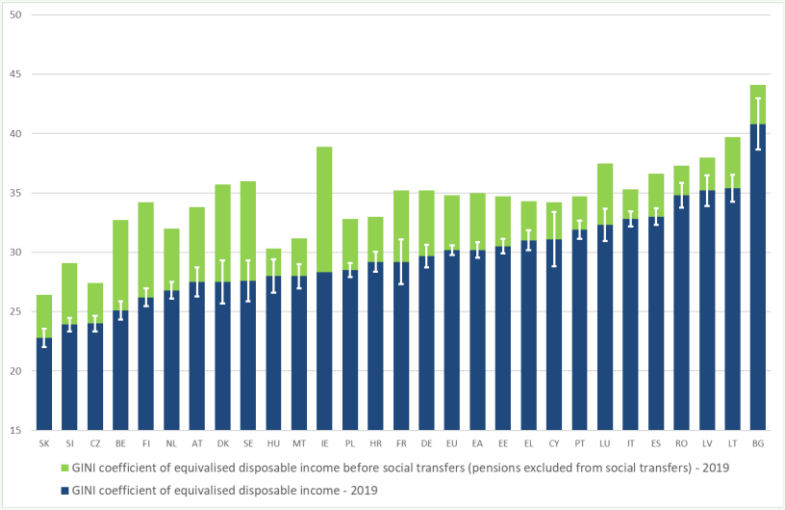
Note: Standard errors to compute the confidence intervals have been obtained as in Zardo-Trindade and Goedemé (2016).

Source: Eurostat, EU-SILC [ilc_di01, ilc_di11]

Chart 7

The impact of social transfers on inequality varies across Member States

GINI coefficient before social transfers and GINI coefficient of disposable income - 2019, EU Member States



Note: Green bars reflect redistributive effects transfers, measured by differences between inequality of disposable income before social transfers (the top of green bars) and disposable income (the top of blue bars). The white bars represent the confidence interval for the GINI coefficient of disposable income. Standard errors to compute the confidence intervals have been obtained as in Zardo-Trindade and Goedemé (2016).

Source: Eurostat, EU-SILC [ilc_di12, ilc_di12c]

4.3. The COVID-19 crisis is halting the improvements in the risk of poverty or social exclusion

The at-risk-of-poverty rate is likely to have slightly decreased in 2020. On the eve of the pandemic, the at-risk-of-poverty rates stayed stable for a large number of Member States in 2019 compared to 2018. Flash estimates for 2019 indicate that the risk of poverty significantly declined in five Member States (Spain, Cyprus, Germany, Greece and Romania) while it only increased significantly in two Member States (Slovenia and Sweden). While no microdata is available yet for 2020, based on the simulation for a selected number of countries presented in chapter 2, it is expected that the at-risk-of-poverty rate may have slightly declined ([36]).

([36]) The at-risk-of-poverty estimates presented in Chapter 2.5 show a reduction in the AROP rate for 2020 compared to a no-policy

Evidence from ad-hoc income surveys launched in 2020 for Germany, Italy, Spain, France and Sweden show that poverty rates increased on average in all countries from January to May 2020 and declined in September, albeit with a varying degree across these countries ([37]).

Due to the deterioration of the labour market in 2020, the probability of an increase in the very low work intensity rate is very high. Early indications of such an increase might come from a drop in employment rates, a decrease in the proportion of employees on temporary contracts, as a consequence of job losses, and the stark reduction in hours worked. In parallel, the labour market slack is on the rise ([38]). However, the 2020 outcome of low work intensity depends on the extent to which individual adverse employment effects affect household members differently.

In March 2021, the European Commission set a new EU-level target to reduce the number of people at risk of poverty or social exclusion by at least 15 million by 2030. It is one of the three new EU headline targets in the areas of employment, skills, and social inclusion ([39]) to be achieved by 2030 ([40]) as part of the European Pillar of Social Rights Action Plan ([41]). The three targets are:

- At least 78% of the population aged 20 to 64 in employment;
- At least 60% of all adults participating in training every year;
- A reduction of at least 15 million in the number of people at risk of poverty or social exclusion.

The Social Scoreboard, the key monitoring tool used in the European Semester for tracking Member States' trends and performance, was revised to cover the Pillar more extensively with an update of existing indicators and the integration of new information ([42]), alongside headline targets (*Box 1.5*). In the enlargement countries, the updated Social Scoreboard will be used in the Economic Reform Programme (ERP) process to monitor progress on the implementation of the Pillar.

scenario. This result is obtained with floating poverty lines, based on 2020 simulated incomes. Conversely, AROP rates are estimated to be rising when poverty lines anchored to 2019 are used to account for potentially lower median incomes in 2020.

([37]) Menta (2020). The risk of poverty is computed as the proportion of individuals under an anchored poverty line, i.e. 60% of the national median income in 2019. By September 2020, the risk of poverty returned to pre-COVID levels in France and Spain while in Italy, Germany and Sweden was still slightly higher than in January. These results are based on an ad-hoc income survey launched by the University of Luxembourg.

([38]) See Section 3.3 for more details.

([39]) Consistent with the UN Sustainable Development Goals.

([40]) Including with the contribution of research and innovation policies.

([41]) https://ec.europa.eu/info/strategy/priorities-2019-2024/economy-works-people/jobs-growth-and-investment/european-pillar-social-rights/european-pillar-social-rights-action-plan_en

([42]) New headline indicators are :
Adult participation in learning during the last 12 months;
At-risk-of-poverty rate or exclusion for children (0—17);
Disability employment gap; and
Housing cost overburden.
The revised version will include 14 new secondary indicators (*Box 1.5*).

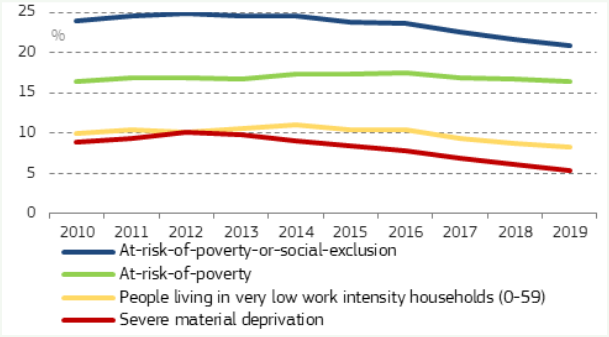
Box 1.3: Indicators of poverty before the COVID-19 crisis

Until the COVID-19 crisis, the number of people at risk of poverty or social exclusion in the EU continued to decrease. The Europe 2020 target of lifting 20 million people out of poverty in the EU (including the UK) by 2020 ([1]) from a 2008 baseline, turned out to be more challenging than expected. The effects of the prolonged financial and economic crisis led to a rise of AROPE by 6.4 million until 2012 (including UK), at which point the upward trend reversed. Nevertheless, thanks to a positive economic environment and greater efficacy in the antipoverty action of benefit schemes in a number of Member States, the number of people at risk of poverty or social exclusion by 2019 had fallen by 17.3 million in the EU27 ([2]) compared with the peak in 2012, and by 12.0 million compared with 2008 ([3]). In 2019 alone, the number of those at risk decreased by 3.4 million year-on-year, and further progress could have been expected to be made in 2020. The onset of the Covid-19 pandemic, however, constituting yet another deep crisis, presented a further challenge following the 2008 economic and financial crisis in meeting the Europe 2020 target. Thus, this target is likely unachievable, in spite of a strong policy response to mitigate the socio-economic impact of the crisis.

Chart 1

Risk of poverty and social exclusion continued to decline until 2019, mainly due to a decrease in severe material deprivation and very low work intensity

At-risk-of-poverty or social exclusion rate (AROPE), at-risk-of-poverty rate (AROP), severe material deprivation rate (SMD) (% of population), very low work intensity households (% of population aged 0-59), EU, 2010-2019



Note: The year refers to the EU-SILC survey year; income measured is from the previous year. AROPE, AROP: income from the previous year, SMD: current year. VLWI: status in the past year.

Source: Eurostat, EU-SILC [ilc_peps01, ilc_li02, ilc_mddd11 and, ilc_lvhl11].

The decline observed between 2012 and 2019 brought the share of people at risk of poverty and social exclusion down to 20.9%. This 4.0 pp drop compared with the peak value in 2012 (24.9%) was supported by increases in incomes stemming from the recovery in economic activity and improvements in labour markets. these improvements included a reduction in long-term unemployment and in youth exclusion, as well as an increased participation of older workers and women in the labour market. However, almost 91.3 million Europeans, including 69.4 million in the euro area, were still at risk of poverty or social exclusion in 2019.

Severe material deprivation ([4]) declined continuously from 2012 to 2019, indicating improvements in living standards (Chart 1). In 2019, 2.8 million fewer people were in severe material deprivation (SMD) than in 2018. The cumulative reduction from 2012 to 2019 was 20.8 million. This continuous and significant drop at EU level was driven mainly by strong decreases in a few Member States, i.e. Italy, Romania, Poland, Germany, and Spain. In 2019 the SMD rate stood at 5.5% (2.9 pp less than in 2015 and 4.7 pp less than in 2012). People with low income are more likely to be in SMD, especially in the first quintile of income (16.7%; 9.1 pp less than in 2012). The incidence of SMD for non-EU-born aged 18+ remains significantly higher than that of the EU-born or nationals (10.3% compared with 5.5% and 5.3%). The unemployed are another category at risk of being in SMD, with a rate of 21.1% compared with 3.3% for those in employment. Finally, people with severe activity limitations are at greater risk of being in SMD with a rate of 11.6% compared with 4.4% for those without limitations (population aged 16+). AROP rates may fail to take account of households which include a person with activity limitations and have an income level above the poverty line, but fall into SMD due to the higher expenses they face on account of the disabilities ([5]).

([1]) The target was set up for the EU with the UK included. The UK did not have a national target.

([2]) EU27 after Brexit (see previous footnote).

([3]) For the EU28 (UK included), the reduction over the period 2008-2019 was by 9.9 million.

([4]) Severely materially deprived (SMD) people have living conditions severely constrained by a lack of resources, i.e. they experience at least 4 out of the following 9 deprivations: they cannot afford i) to pay rent or utility bills, ii) to keep their home warm enough, iii) to face unexpected expenses, iv) to eat meat, fish, or a protein equivalent every second day, v) a week's holiday away from home, vi) a car, vii) a washing machine, viii) a colour TV or ix) a telephone.

([5]) ISTAT (2019).

(Continued on the next page)

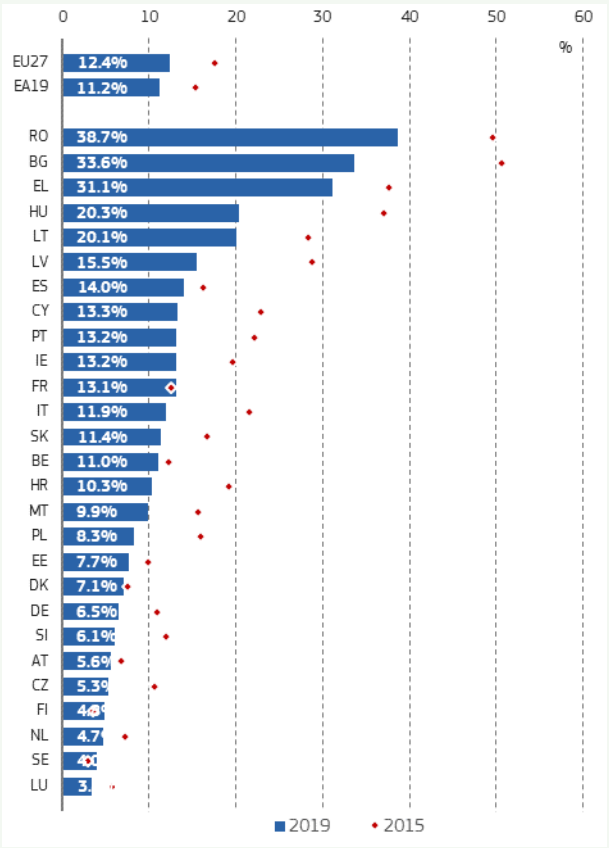
Box (continued)

In a similar vein, the number of people living in material and social deprivation ([6]) declined between 2014 ([7]) and 2019. According to Eurostat's new measure of deprivation that includes a social dimension, 12.4% of Europeans experienced a lack of resources to cover material needs and ensure social participation in 2019, down from 13.2% in 2018. However, despite strong decreases since 2015, Romania (38.7%), Bulgaria (33.6%) and Greece (31.1%) still have levels above 30% (Chart 2).

Chart 2

Material and social deprivation declined in most Member States between 2015 and 2019

Material and social deprivation rate (% of population), EU Member States, 2015-2019



Note: The year refers to the EU-SILC current survey year. Breaks in series: BE 2019, BG 2016, LU 2016, NL 2016, and SE 2015.

Source: Eurostat, EU SILC ilc_mdsd07.

In 2019, a recovery in the labour market led to a reduction in the number of people living in very low work intensity ([8]) households (Chart 3). The VLWI rate decreased from 8.8% in 2018 to 8.3% in 2019, meaning that around 1.7 million fewer people aged 0-59 were in quasi-jobless households. Households composed of a single person with or without dependent children seem to be in a particularly vulnerable situation, with respective 2019 rates of 19.5% (5.0 pp less than in 2012) and 19.0%, while the non-EU-born rate was at 13.3% (aged 18-59) and the rate for those with severe activity limitations (aged 16-59) was 37.6% (18.4% for people with some limitations).

The at-risk-of-poverty rate ([9]) (AROP) decreased slightly in 2019 (Chart 3). At EU level, the 2019 AROP rate ([10]) was 16.5% (-0.3 pp less than in 2018). Many Member States saw only minor changes, although Belgium ([11]), Germany, Ireland, Lithuania and Slovenia had decreases of more than 1 pp. This component of AROPE has followed a different pattern, due to its dependency on median income. Flash estimates ([12]) on income 2019 foresee an overall increase of the equivalised disposable income across the distribution for almost all countries. These estimated changes are supported by main trends in employment and in wages. The estimates show a slight significant increase of the AROP rate at EU level ([13]).

([6]) This is an alternative indicator for SDG 1. It means that people could not afford at least 5 out of the following 13 items: i) unexpected expenses, ii) one week annual holiday away from home, iii) avoid arrears (in mortgage, rent, utility bills and/or hire purchase instalments), iv) afford a meal with meat, chicken or fish, or vegetarian equivalent every second day, v) keep their home adequately warm, vi) a car/van for personal use, vii) replace worn-out furniture, viii) replace worn-out clothes, ix) have two pairs of properly fitting shoes, x) spend a small amount of money each week on him/herself ('pocket money'), xi) have regular leisure activities, xii) get together with friends/family for a drink/meal at least once a month, xiii) have an internet connection.

([7]) 2014 is the first year of measurement.

([8]) People living in households with very low work intensity (VLWI) are those aged 0-59 living in households where the adults (aged 18-59, excluding students aged 18-24) worked not more than 20% of their total work potential during the past year.

([9]) People at risk of poverty (AROP) have an equivalised disposable income below the risk-of-poverty threshold, which is set at 60% of the national median equivalised disposable income (after social transfers).

([10]) Income reference period 2018.

([11]) Belgium had a break in series in 2019, which impacted the results.

([12]) Eurostat (2020b).

([13]) Trends in AROP depend on the evolution of the median income against which the at-risk-of-poverty lines are fixed. EUROMOD simulations estimate an increase in the at-risk-of-poverty rate by 1.7 pp when assessed against an anchored pre-crisis poverty line. The increase is estimated to be smaller when accounting for the fall in the poverty line as a result of the crisis (Almeyda et al. 2020).

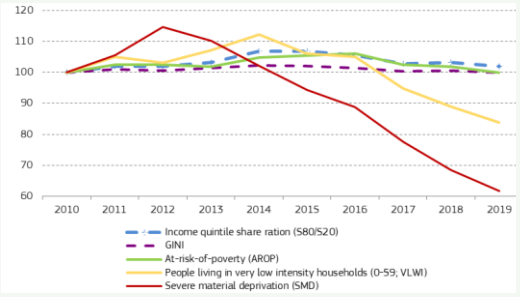
(Continued on the next page)

Box (continued)

Chart 3

Living standards have improved since 2012 despite persistent poverty and inequality

At-risk-of-poverty rate, severe material deprivation rate, people living in households with very low work intensity (rate), Gini coefficient of equivalised disposable income and income quintile share ratio (S80/S20) (Index 2010=100), EU, 2010-2019



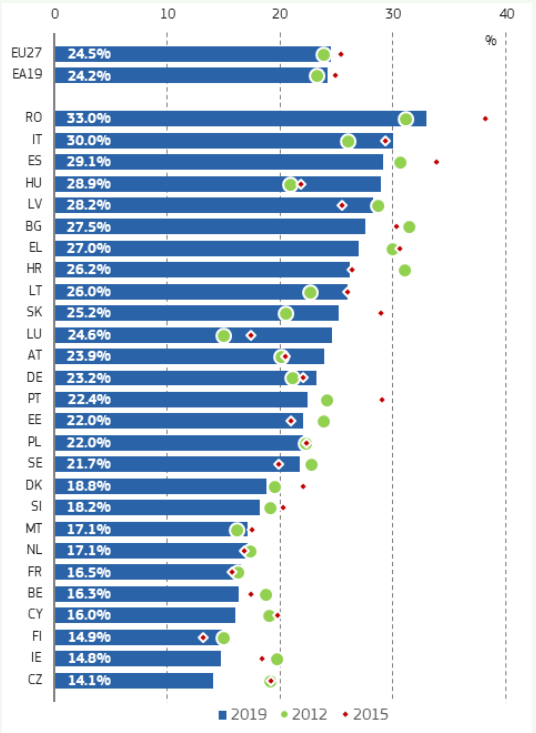
Note: The year refers to the EU-SILC survey year; reference year for income is the previous year.

Source: Eurostat, EU SILC [ilc_li02, ilc_mddd11, ilc_lvhl11, ilc_di12, ilc_di04]; DG EMPL calculations.

Chart 5

Relative median at-risk-of-poverty gap show large differences in intensity of poverty across the EU

Relative median at-risk-of-poverty gap, 2012-2019



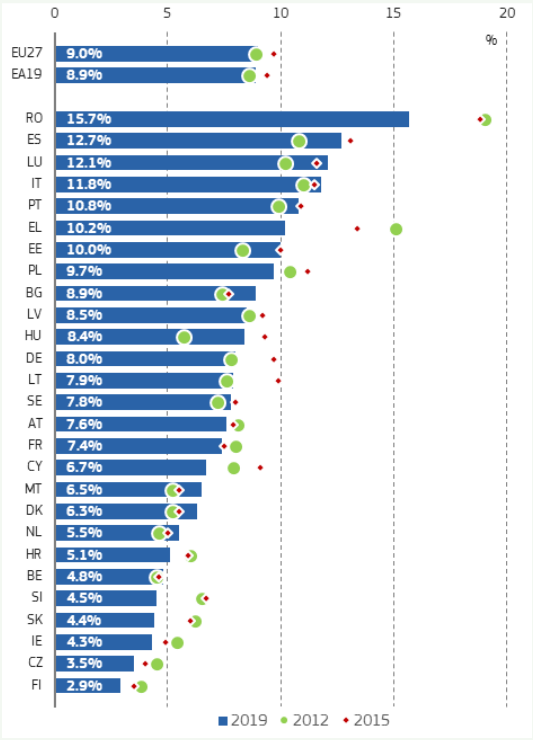
Note: The relative median at-risk-of-poverty gap is calculated as the difference between the median equivalised disposable income of people below the at-risk-of-poverty threshold and the at-risk-of-poverty threshold itself, expressed as a percentage of the at-risk-of-poverty threshold (cut-off point: 60% of national median equivalised disposable income).

Source: Eurostat, dataset: ilc_li11 and table sdg_10_30.

Chart 4

Despite the protective effect of work against poverty, many workers remain at risk

In-work at-risk-of-poverty rate (% of population), 2012-2019



Note: Workers are at risk of poverty if their equivalised disposable income is below the risk-of-poverty threshold, set at 60% of the national median equivalised disposable income (after social transfers).

Source: Eurostat, dataset: ilc_iw01 and table sdg_01_41.

In a majority of Member States, the 2019 at-risk-of-poverty rates (AROP) were lower than in 2018. In 19 countries the AROP rate declined, with marked improvements for Lithuania, Ireland, and Belgium, which recorded an AROP reduction of over 1.5 pp. Of the 8 Member States in which the AROP rate did not decline, only in Luxembourg, Sweden, Poland, and Bulgaria did it increase by over 0.5 pp.

Despite the protective effect of work, many workers are still below the AROP threshold (Chart 4). This was the situation for 9.0% of EU workers in 2019; a drop of 0.7 pp since 2015. Over the period 2015-2019, Greece (-3.2 pp), Romania (-3.1 pp), Cyprus (-2.4 pp), and Slovenia (-2.2 pp) saw their proportions of workers at risk of monetary poverty reduce by more than 2.0 pp. The in-work poverty rate is significantly higher for non-EU born than for natives, particularly in Spain, Luxembourg, France, Sweden, Belgium, Cyprus, Italy, Greece, Denmark, the Netherlands, and Austria.

At EU level in 2019, the median income of people living below the AROP threshold was 24.5% lower than the threshold itself (Chart 5). The relative median at-risk-of-poverty gap is a measure of the intensity of poverty, but does not provide information about the distribution of income below the AROP threshold. In Romania, the median income of people at risk of poverty was 33.0% below the AROP threshold. By contrast, the median income of people at risk of poverty was only 14.1% lower than the AROP threshold in Czechia.

(Continued on the next page)

Box (continued)

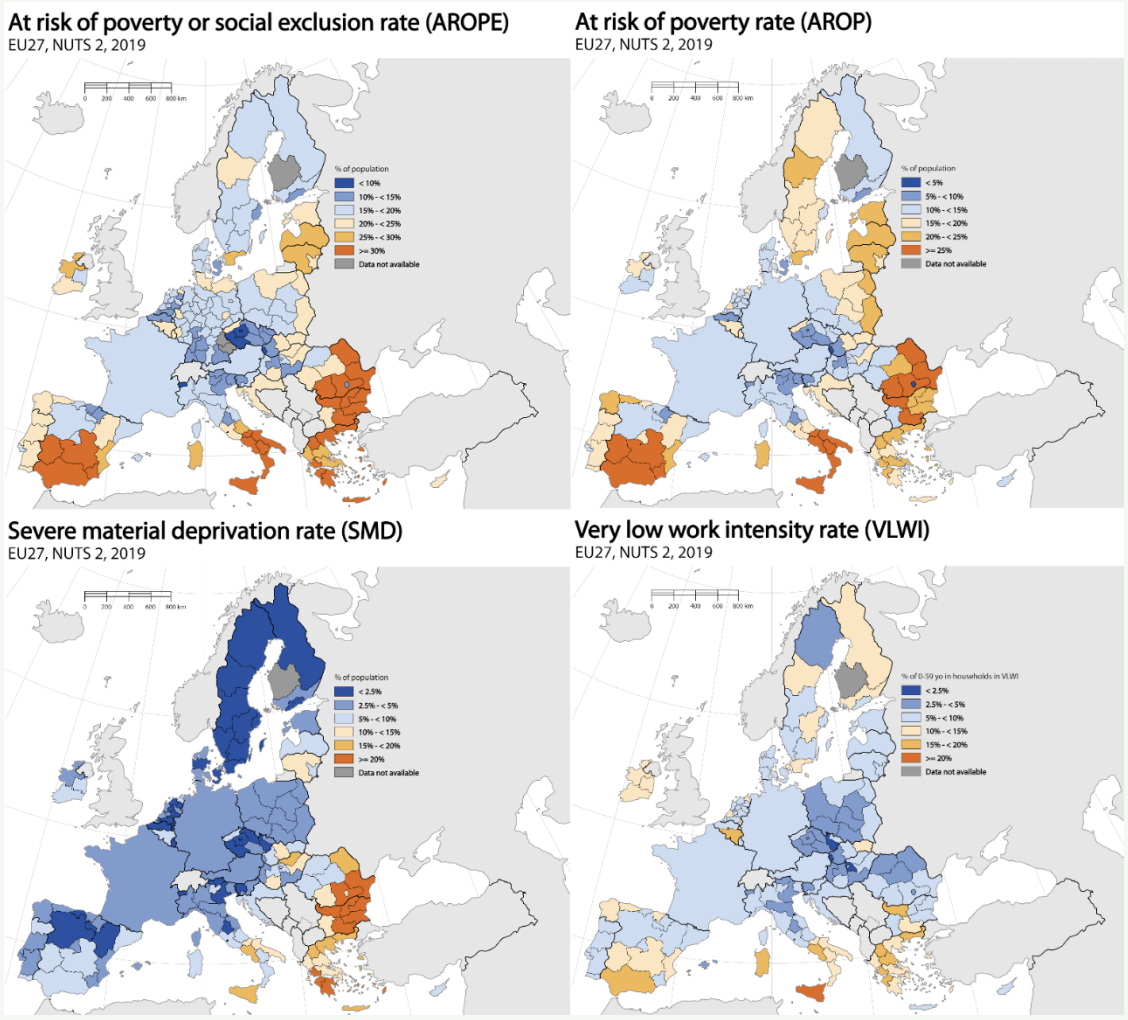
Large disparities in poverty and social exclusion pre-existed across EU regions

Large regional disparities remained in the at-risk-of-poverty-or-social-exclusion rate (AROPE) despite improvements between 2012 and 2019 in most Member States. The three components of the AROPE indicator have different geographical patterns. The at-risk-of-poverty rate (AROP) is the highest in southern Spain, southern Italy, eastern Romania and Bulgaria, as well as in eastern Poland, the Baltic States, some regions of Greece and Sweden, but to a lesser extent. Severe material deprivation (SMD) is concentred in eastern Romania, Bulgaria, and Greece, on top of some other regions. The proportion of people aged 0-59 living in households with very low work intensity (VLWI) is higher in Greece, southern Italy, southern Spain, southern Belgium, Ireland and some Scandinavian regions. European regions with a high share of people living in households at risk of poverty or social exclusion do not have the same challenges, some of them being affected more by low work intensity, while others face monetary poverty or material deprivation issues. (See Chapter 3 for further developments on inequalities at territorial level).

Chart 6

Components of AROPE (AROP, SMD and VLWI) have different geographical patterns

At-risk-of-poverty-or-social-exclusion rate, at-risk-of-poverty rate, severe material deprivation rate (% of population), very low work intensity rate (% of population aged 0-59 living households in VLWI), EU Member States, NUTS 2 level, 2019



Note: AROPE combines AROP, SMD and VLWI. The sum of components do not equal to the level of AROPE, because components overlap in AROPE.
The year refers to the EU-SILC survey year. AROP refers to the income year previous to the survey year.
AROPE, AROP, SMD: % of population; VLWI: % of population aged 0-59 living in households with VLWI.
NUTS 2 level, except for BE and PL (NUTS 1), DE, EE, FR, HR, CY, LV, LU, AT and MT (NUTS 0). DE at NUTS 2 for AROPE rates.

Source: Eurostat, EU-SILC, ilc_mddd21, ilc_lvhl21, ilc_li41 and ilc_peps11.
Administrative boundaries: © EuroGeographics © UN–FAO © Turkstat Cartography: Eurostat – IMAGE, 06/2021

(Continued on the next page)

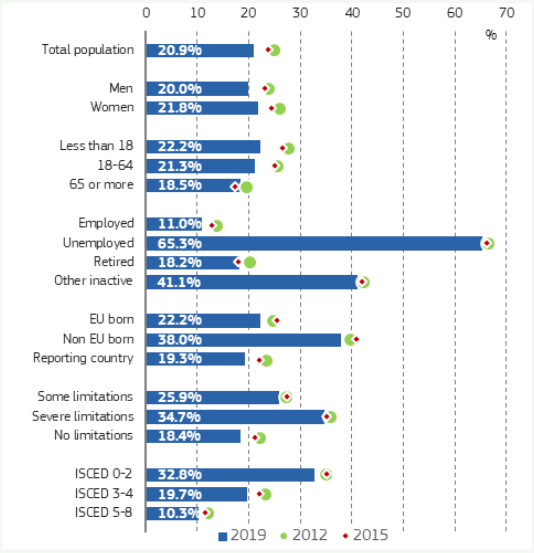
Box (continued)

Higher risk of poverty or social exclusion for vulnerable groups

Chart 7

The unemployed, inactive, non-EU-born, low-educated, and those with severe activity limitations are at high risk of poverty or social exclusion

AROPE by gender, age, labour status, country of birth, highest education level and activity limitations, 2012-2019



Note: By gender and age: total population.
By labour status and country of birth: population aged 18+.
By activity limitation: population aged 16+.
ISCED 0-2: Less than primary, primary and lower secondary education; ISCED 3-4: Upper secondary education and post-secondary non-tertiary education; ISCED 5-8: Tertiary education.

Source: Eurostat, datasets: ilc_peps01, ilc_peps02, ilc_peps04, ilc_peps06 and hlth_dpe010

Although almost all groups have experienced an improvement since 2012, some remain more at risk of poverty or exclusion. In 2019 the AROPE rate for the unemployed was 65.3% and inactive people other than pensioners had a rate of 41.1% (Chart 7). Work provided a certain protection against poverty but not a full one: employed people had an at-risk-of-poverty-or-social-exclusion rate of 11.0% and 9.0% of workers being below the monetary at-risk-of-poverty line (Chart 7 and Chart 4). Others at very high risk of poverty or social exclusion included people born outside the EU (38.0%), as well as people reporting activity limitations ([14]) in their daily lives, especially severe limitations (34.7%), and low-educated people (32.8%) (Chart 7). For non-EU-born people, the gains recorded in employment were only partially translated into a reduction of their AROPE rate. Decreases have been seen in Member States where the rate was previously very high (Belgium, Bulgaria, Denmark, Italy, Spain) but the rate has further increased in France, the Netherlands, Austria, and Sweden ([15]).

([14]) Activity limitation is a dimension of health/disability capturing long-standing limitations in performing usual activities (due to health problems). In EU-SILC, one question instrument – the Global Activity Limitation Instrument (GALI) - assesses the presence of long-standing activity limitations, asking 'For at least the past 6 months, to what extent have you been limited because of a health problem in activities people usually do? Would you say you have been ... severely limited / limited but not severely or / not limited at all?'

([15]) Only Member States where the non-EU-born represent a sizeable part of the population are mentioned (Eurostat, EU-SILC, [ilc_peps06]).

Higher social costs for vulnerable groups

Some population groups were already exposed to higher risks before the crisis. Among the vulnerable groups, notably people with disabilities, people with a minority racial or ethnic background such as migrants or Roma tend to find themselves at a disadvantage in the labour market and with regards to access to public services ([43]). Some may end up being excluded from access to housing and struggle to find employment, depriving societies of their full potential. In turn, accessing services remotely can be difficult and in the current crisis is also affecting older people, youth and some population in rural and remote areas with inadequate digital infrastructure. The inclusion in educational systems and in employment and the access to social services of those who are in a condition of disadvantage ([44]), as recognised in the European Pillar of Social Rights, is a key condition to ensure an inclusive recovery.

People with disabilities were more vulnerable to service disruption due to the lockdown, impacting at the same time their informal

([43]) See Box 1.3.

([44]) Principle 3 of the European Pillar of Social Rights: 'Regardless of gender, racial or ethnic origin, religion or belief, disability, age or sexual orientation, everyone has the right to equal treatment and opportunities regarding employment, social protection, education, and access to goods and services available to the public. Equal opportunities of under-represented groups shall be fostered.' And Principle 20: 'Everyone has the right to access essential services of good quality, including water, sanitation, energy, transport, financial services and digital communications. Support for access to such services shall be available for those in need.' https://ec.europa.eu/info/strategy/priorities-2019-2024/economy-works-people/jobs-growth-and-investment/european-pillar-social-rights/european-pillar-social-rights-20-principles_en

carers. Progress was made in the provision of care, and support for people with disabilities increased from the first lockdown to the second one ([45]). However, the situation remained unstable due to several challenges increasing the risk of discontinuity, in particular the financial stability of the sector (higher costs, lower income) and the accentuated staff shortages (higher absenteeism, staff departures, sick leave, and mental health difficulties) ([46]). Social and lifestyle habits, mental wellbeing and physical activity of people with disability were also impacted ([47]) alongside an increase in vulnerability to the virus (See Chapter 2 for further developments).

For informal carers, the disruption of health and social services, physical school closures and the confinement measures largely adopted across the EU led to an increase in the number of hours dedicated to care provision. Some of the informal caregivers started to provide care as a result of the lockdown measures. The outbreak of the pandemic negatively impacted informal caregivers in many aspects of their life, such as employment status, social participation, quality of life, access to health and social services and health status, including mental health. In a context of reduced support from health and social services or from family, friends and neighbours, the burden was heavier than before the pandemic, with an increase in the average of weekly hours of informal care provided and an intensification of the various care activities ([48]). This burden increased more for women – the majority of the caregivers – than men and in general the impact of the pandemic was more severe for female caregivers. While informal carers received some support from public or private professionals and were mainly supported by other informal carers in their private circle, most of them did not feel sufficiently supported, with consequences on employment. Caregivers reported difficulties to reconcile their paid work and their caring duties and had to use flexible working arrangements or leaves, which might have had, in some cases, a negative impact on income ([49]).

The deterioration in young people's mental well-being was more pronounced among those affected by a severe disruption in learning and working. A global survey on youth and COVID-19 found that young people whose education or work was either disrupted or stopped were almost twice as likely to be affected by anxiety or depression as those for whom it had not. Young people reported a limitation of their freedom of movement and of their social and political rights due to the measures taken during the pandemic ([50]). Young people were one of the groups impacted harder by the labour market deterioration as they are overrepresented among workers on temporary contracts (Section 3). Together with other initiatives of the European Commission, the recently adopted Reinforced Youth Guarantee is expected to help mitigate the impact of the crisis on young people ([51]).

Healthcare and long-term care and the reduction in social relations were of particular concern for the older population ([52]). Older people – among others – were affected by postponements and cancellations of COVID-19-unrelated medical appointments due to containment measures. The proportion of people reporting very good, good or fair health status was stable, as it was for depressive symptoms. However, in the hardest-hit countries, anxiety, loneliness, or sleep problems were more frequently reported, in particular for people taking multiple medicines ([53]) or chronically ill. Social relationships strongly focused on the nuclear family ([54]), with children helping their parents more regularly. Social contacts ([55]) were reduced, likely having negative impact on psychological wellbeing, since findings indicate the positive influence of social networks and face-to-face contact on personal wellbeing, contrary to electronic interaction ([56]). People not living in large urban areas were less depressed, especially those that were not living in single houses. The presence of a partner or other relatives in the same dwelling, or having children living very close, was a protective factor against mental and physical health

([45]) Exact periods differ across countries and therefore cannot be specified with precision.

([46]) EASPD (2020).

([47]) Lebrasseur, A and al. (2021).

([48]) Care activities cover emotional support, remote communication, practical help in person, care coordination and support and help with transportation.

([49]) EuroCarers (2021).

([50]) European Youth Forum (2020).

([51]) The reinforced Youth Guarantee, a part of the Youth Employment Support package, was adopted in October 2020 as the natural successor of the Youth Guarantee (April 2013). Member States committed to ensure that all young people under the age of 30 receive a good quality offer of employment, continued education, apprenticeship, or traineeship within a period of four months of becoming unemployed or leaving education. The reinforced Youth Guarantee steps up the comprehensive job support available to young people across the EU, now reaching out to a broader target group of 15 to 29 year-olds (previously 15-24 year-olds), at the same time as focusing on the activation of the hardest-to-reach – who may have been facing multiple obstacles for years – through tailored, individualised approaches. The Recommendation is backed up by significant EU financing under NextGenerationEU and the long-term EU budget.

European Education Area, the Digital Education Action Plan, EU equality strategies are other relevant initiatives of the European Commission that mitigate the impact of the crisis on youth.

([52]) See European Commission (2021c) for an extensive discussion of how the COVID-19 crisis has strongly affected long-term care systems, adding evidence to the urgency of strengthening them.

([53]) Indicator of multimorbidity. Multimorbidity is the coexistence of multiple health conditions in an individual.

([54]) Nuclear family can be defined as 'a group of people who are united by ties of partnership and parenthood and consisting of a pair of adults and their socially recognised children'. (Encyclopaedia Britannica).

([55]) Contacts with family, friends or neighbours, social activities like culture and sport, shopping, etc.

([56]) Digitalisation of services and products have an impact on the elderly that should be taken into account.

deterioration ([57]). Older people living in institutions were severely impacted by the crisis and concerns were also raised about their rights ([58]).

Poverty, poor housing conditions and overrepresentation of people with migrant background in contact-intensive jobs led them to a higher risk of COVID-19 infection. Multiple vulnerabilities are documented for the non-EU born population, especially disadvantaged labour market positions (poorer employment conditions, discrimination, work in sectors hardest hit by the pandemic, etc.) and worse living conditions than the overall population. On the education side, due to less supportive learning environment for children at home – and sometimes difficulties in speaking the host-country language – physical school closures and distance-learning measures disadvantaged children of immigrants. They are also more at risk of poverty and consequently of not having access to adequate IT equipment, an internet connection at home, or to have a quiet place to study, which are necessary to follow online lessons in good conditions ([59]). On the health side, evidence also starts to emerge of low COVID-19 vaccination rates in some migrant and ethnic minority groups in the EU and in general in disadvantaged groups of population.

Marginalised and segregated minorities suffered more than before from social exclusion and poverty. Findings from a report by the Fundamental Rights Agency ([60]) suggest that the measures taken against the pandemic disproportionately impacted marginalised and socially excluded Roma and Travellers. These groups are particularly sensitive to rapid negative changes in the labour market, since they are more engaged in precarious or informal work – the latter making it impossible to claim support and social benefits put in place to protect against income losses. Street vendors or travelling traders were not allowed to work due to lockdowns. At the same time, their lack of formal registration limited their access to welfare services. Without access – or with insufficient access – to the Internet or to IT equipment, many children from these minorities were unable to follow lessons online. They are more likely to live in inadequate housing conditions, thus increasing their risk of COVID-19 infection and making the enactment of stay-at-home measures more challenging.

Due to their living conditions, the homeless ([61]) were at higher risk of COVID-19 infection, while the lockdown hampered their access to hygiene and isolation spaces. Homeless have higher risk of poor health ([62]) or disability, and consequently with an increased likelihood of being seriously affected by the virus. Access to healthcare by the homeless is limited in usual times and the lockdown amplified their difficulties. Support and services were prone to experience disruption or instability. A lack in protective equipment, sanitation products, and testing materials was reported by shelters. Access to usual food supplies, washing facilities, safe places to stay, and services in general were negatively impacted by confinement measures. The homeless were required to follow restriction rules, even if they were not in a position to do so. They were more likely to suffer from isolation. At the same time vulnerable groups and informal workers were more likely to lose their income and become at risk of homelessness ([63]).

Social inequalities and living conditions are elements to take into account when establishing lockdown measures and mitigation policies. These developments show the importance of ensuring that the pandemic will not contribute to an increase in inequalities in the long run. The European Centre for Disease Prevention and Control (ECDC) has provided guidance to Member States, EEA countries and United Kingdom for the protection of medically and socially vulnerable groups ([64]) in July 2020.

Gender inequalities exacerbated by the crisis

The pandemic highlighted and reinforced long-standing gender inequalities ([65]). Women are over-represented in non-standard forms of work (self-employed, temporary, part-time workers and informal workers) and the hardest-hit sectors such as retail, accommodation, residential care activities, activities of households as employers of domestic personnel, or manufacturing of clothing apparel ([66]). However, in the whole economy, employment losses have not been greater among women than among men (*Section 3.1*) and the gender employment gap even slightly declined. Women constituted the majority of frontline workers ([67]) in healthcare. While the unpaid care burden increased for both women and men due to the physical closure of schools, childcare and other care services, alongside a decrease in informal help from family members, women continued to take on the

([57]) SHARE-COVID19 (2021).

([58]) To better monitor that everyone has the right to affordable long-term care services of good quality [European Pillar of Social Rights - Principle 18], comparative data is needed on affordability, social protection coverage and quality. Although progress is being made in developing common EU indicators on long-term care, important data gaps remain (AGE Platform Europe, 2020).

([59]) OECD (2020) and European Commission (2020a).

([60]) Fundamental Rights Agency Report (2020).

([61]) People sleeping rough or in temporary accommodation, including emergency accommodation.

([62]) With an especially high prevalence of respiratory disease.

([63]) FEANTSA (2020) and Chapter 2 for further developments.

([64]) https://www.ecdc.europa.eu/en/publications-data/guidance-medically-and-socially-vulnerable-populations-covid-19

([65]) European Parliament, FEMM Committee (2020) and EIGE (2021a).

([66]) See Section 3 and Chapter 2 for further developments.

([67]) 76 % of healthcare workers in the EU are women (LFS, 2020). Healthcare activities are defined as "the provision of health and social work activities. Activities include a wide range of activities, starting from health care provided by trained medical professionals in hospitals and other facilities, over residential care activities that still involve a degree of health care activities to social work activities without any involvement of health care professionals." (NACE rev. 2 classification).

largest share of caring responsibilities. In particular, many women faced serious challenges in balancing work and private life. COVID-19 confinement measures contributed to the spread of teleworking. A higher share of women than men are in teleworkable occupations, which may have helped many women to remain in employment despite the increase in caring duties. While telework could be an opportunity for gender equality, giving men the possibility to take over more housekeeping and care tasks at home, it is a challenge to the extent it may reinforce conventional gender roles ([68]). An intersectional approach shows that some groups of women living in situations of increased disadvantages relative to others faced a 'double-burden': intersectional inequalities were particularly high for low-income women, ageing women and single mothers ([69]).

Both mental and physical health of women have been impacted by specific factors. Recent research suggests that women's mental health was more strongly affected by the pandemic than men's mental health ([70]). Data show a spike in violence against girls and women ([71]), amplified by stress and psychological distress due to confinement measures, deteriorating socioeconomic situations, and job losses. Health services specific to women were impacted by disruption (like maternity care and contraception supply) or restricted (like abortion provision which was sometimes classified as non-essential ([72]).

Childcare facilities and schools were impacted by service disruptions, leading to an increase in duties for parents. Women spent more hours per week caring for children, especially single mothers with children under 12, compared with parents in other types of households. Online schooling solutions in primary and secondary education were not found to be satisfactory by most Europeans and the families' overall life satisfaction was lower than in households without children. This constitutes a reversal of the pre-crisis situation, suggesting a deterioration in the mental health of families, perhaps as a consequence of increased childcare and educational duties falling to parents ([73]).

4.4. Healthcare and ageing

COVID-19 has exposed latent health system fragilities that existed before the outbreak. In 2020 the virus spread rapidly across the EU, with Spain, France, and Italy each reporting over one million COVID-19 confirmed cases as of the end of 2020. The high number of cases led to excess mortality (*Chart 1.17*) but also to hospital saturation risks and an overall overload of our sanitary and social care systems. In this context, the costs of building more resilient health systems are low in comparison with the significant economic consequences of failing to do so ([74]), even if the risk of a health crisis will never disappear entirely. Older people have been more exposed to the risk of death or suffering a serious form of COVID-19, as they are likely to have previously developed illnesses and existing co-morbidities ([75]). Age is the first explanatory factor of death or long-term effects of COVID-19; indeed, among other factors, population age-structure is a key reason for the significant impact of the pandemic on Europe.

COVID-induced mortality reversed past longevity improvements and mortality reductions in old age. However, this trend is likely to be temporary since the losses are mainly due to deaths of older people and the life expectancy of younger cohorts should not be affected to a large extent. Life expectancy at birth declined in 2020 compared to 2019 in most of EU countries, both for men and women (*Chart 1.22*). Some studies found that those reductions, unprecedented in their global nature, were mostly attributable to an increased mortality in people aged over 60 years and in particular linked to identified COVID-19 deaths including in many EU countries for which there is available evidence ([76]). In general, life expectancy losses were highest for men than women in the EU. For the total population, the highest losses were recorded in Bulgaria (-1.5 years), Spain (-1.6 years), Lithuania, Poland and Romania (-1.4 years). Cyprus, Denmark, Finland and Latvia were the only EU countries to record no change or a small increase (+0.1 years). While the younger population is found to be at significantly lower risk of severe health risks and death from COVID-19, they may face significant longer-term effects ('long COVID-19'), for which little scientific knowledge is currently available.

([68]) EIGE (2021a).

([69]) See European Parliament, FEMM Committee (2021) for further analysis.

([70]) Maksimovic and al. (2021).

([71]) According to the World Health Organisation (WHO) - Europe, Member States are reporting up to a 60% increase in emergency calls by women subjected to violence by their intimate partners in April 2020, compared to the same month in 2019. https://www.euro.who.int/en/about-us/regional-director/statements-and-speeches/2020/statement-during-covid-19-pandemic,-violence-remains-preventable,-not-inevitable
See also EIGE (2021b) and European Parliament, FEMM Committee (2021).

([72]) The European Parliament (FEMM Committee) published a series of document on access to abortion services for women in the EU and the impact of the service disruption during the pandemic in this area. See https://www.europarl.europa.eu/committees/en/femm/supporting-analyses/latest-documents

([73]) Eurofound (2021). Results presented in this report are based on data from the EU survey on Income and Living Conditions (EU-SILC) and Eurofound's Living, working and COVID-19 e-survey, which was carried out to capture the implications of the pandemic on the way people live and work.

([74]) OECD and European Union (2020).

([75]) Due to close contacts, the risk was also higher for people living in old age homes and long-term care facilities.

([76]) Aburto and al. (2021).

Chart 1.22

Most of EU countries experienced life expectancy losses from 2019 to 2020

Changes in life expectancy at birth in years from 2019 to 2020 by sex

Note: Countries are sorted from largest losses to largest increases for men. No data for IE. Only data for total population for DE (-0.2 years). Data are provisional estimates.

Source: Eurostat, dataset: DEMO_MLEXPEC. EMPL calculations.

Click here to download chart.

Access to health care in COVID-19 times

Most EU countries have achieved universal coverage for a core set of health services, which is crucial to deal effectively with the COVID-19 pandemic. However, the range of services covered and the degree of cost-sharing vary substantially. Effective access to different types of care can also be restricted because of shortages of health workers, long waiting times or long travel distances to the closest health care facility. Only a small share of the population reported unmet needs for health care in most EU countries in 2019. Still, this proportion was nearly five times higher among low-income households than high income households across the EU as a whole. Further, the affordability of health services can be restricted when they involve high out-of-pocket payments. On average across EU countries, around one fifth of all health spending is paid out-of-pocket by households, but this proportion exceeds more than one third in Latvia, Bulgaria, Greece and Malta. In general, countries that have a high share of out-of-pocket spending also have a higher proportion of the population facing substantial out-of-pocket payments for health services, particularly among low-income groups ([77]).

Older people are more likely to live in rural areas that often suffer from a low provision of services. In combination with a greater risk of reduced mobility, illness or social exclusion, this situation can lead to health and social difficulties. In the EU in 2019, 22.1% of the 90.4 million people aged 65 years or more were living in predominantly rural regions, 39.7% in intermediate regions and 38.2% in predominantly urban regions ([78]). Living in rural areas can hamper access to health services. During the pandemic the proximity of health facilities and the availability and accessibility of intensive care units were severely reduced. However, in rural areas, due to a lower population density, social distancing was easier and the pandemic hit those regions to a lower extent. At the same time, many residential facilities, like old age homes or long-term care facilities, were strongly affected by the virus.

The COVID-19 pandemic stretched the resources of health systems. It highlighted the shortages of health workers in many countries, and the need for mechanisms to mobilise human resources quickly in times of crisis. The timing of lockdown measures was crucial at the beginning of the outbreak, since early measures restrained the rise in the number of cases ([79]). One of the many consequences of the rising number of cases and the consequent limitation of face-to-face care following confinement measures, was the implementation of a range of remote services delivered through digital means.

Availability and access to intensive care units (ICU) were key during the health crisis. The geographical access and the overall availability of ICU beds vary largely among EU countries. For example, in Germany there are 33.9 ICU beds per 100 000 inhabitants, compared with 7.8 in Ireland. Next to performant public health systems, beds in intensive care units were an important resource during the pandemic, but other types of beds were also mobilised. In 2018, 2.4 million hospital beds were available across all Member States ([80]), comprising mostly curative beds (almost three quarters), followed by beds for rehabilitative care, then by beds for long-term care and beds for other purposes ([81]).

([77]) OECD and European Union. (2020).

([78]) Eurostat (2020c).

([79]) Rocks and Idriss (2020).

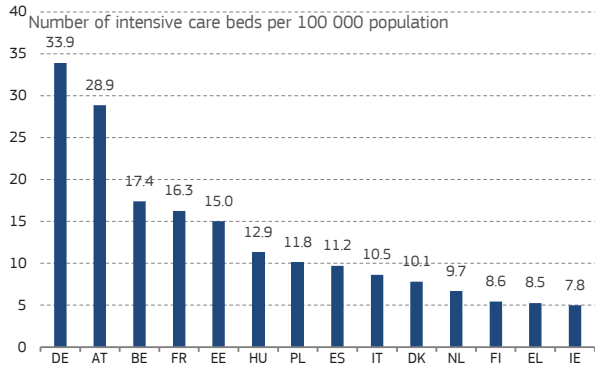
([80]) Eurostat, Healthcare resource statistics – beds, https://ec.europa.eu/eurostat/statistics-explained/index.php/Healthcare_resource_statistics_-_beds

([81]) Psychiatric care beds are included in the different categories of beds (curative, rehabilitative, long-term care, and other).

Chart 1.23

Huge variations in intensive care capacity

Intensive care capacity – ICU beds before the COVID-19 crisis, latest year available



Note: There may be differences in the notion of intensive care affecting the comparability of the data. Data refer only to adults in Belgium and Ireland, and to all ages in Germany and Spain. Data in France exclude beds in constant monitoring units and paediatric ICUs.

Source: Adapted from OECD (2020)
German Federal Statistical Office, Austrian Ministry of Health, Belgian Ministry of Health, French Ministry of Health, Hungarian National Health Insurance Fund, Polish Ministry of Health, Spanish Ministry of Health, Italy: (Remuzzi and Remuzzi, 2020[46]), Danish Society of Anesthesiology and Intensive Medicine, Dutch Intensive Care Society, Irish Department of Health.
DK: 2014; DE, ES: 2017; AT, FR, HU, NL: 2018; BE, EE, PL, FI, EL, IE: 2019; IT: 2020.

Click here to download chart.

On average, 538 hospital beds per 100 000 inhabitants were available in 2018, Germany recording the highest number (800 beds per 100 000 inhabitants), while Ireland ([82]), Spain, Denmark and Sweden had less than 300 beds per 100 000 inhabitants. Over the period 2013-2018, the number of hospital beds decreased by 2.5% in the EU ([83]). The situation was similar in most EU countries, with the largest contractions in the number of hospital beds recorded in Sweden, the Netherlands ([84]) (note that there is a break in the series), Lithuania, Denmark, and Finland. The number of hospital beds increased modestly in Spain, Romania, and Malta, and more rapidly in Bulgaria and Ireland ([85]). These changes can be analysed in relation to changes in the average duration of stay or increase in private hospital beds.

Many European governments have implemented policies to boost surge capacity in response to the pressure on hospitals, and particularly on ICU beds. For example, in Estonia, France, Hungary, Italy, Romania, Slovenia and Spain the military helped create field hospitals. Most European countries converted general purpose and other clinical wards into ICU wards. In addition, many countries postponed elective surgery to free up a maximum amount of hospital beds to deal with the pandemic.

The pressure on hospitals caused delays in providing services not related to COVID-19. Waiting times for elective surgery ([86]), which were on the rise even before the pandemic, are likely to increase further, as many elective surgeries were postponed in many countries. Furthermore, disruptions to cancer care have also been evident. Delays in cancer diagnoses and treatments are very likely to increase mortality due to cancer ([87]). The emerging evidence points to the risks of not giving sufficient weight to non-COVID 19 health care needs, resulting in urgent health problems remaining undiagnosed and exacerbated chronic illnesses.

Physicians and nursing staff were at the frontline of the fight against the pandemic. In 2018, there were approximately 1.7 million practising physicians in the EU-27 ([88]) and among them approximately 330 000 general practitioners. In the EU, Greece recorded the highest number physicians per 100 000 inhabitants (610 physicians licensed to practise), followed by Austria (524 practising physicians), Portugal (515 physicians licensed to practise), Finland (465 physicians licensed to practise), and Lithuania (460 practising physicians) ([89]). By contrast, there were fewer than 300 practising physicians per 100 000 inhabitants in Luxembourg and Poland (298 and 238 physicians per 100 000 inhabitants, respectively, in 2017). This ratio increased in all EU countries between 2013 and 2018. In the majority of EU countries, more than 50% of physicians were employed in hospitals ([90]). In 2019 the share of nurses and midwives in the total workforce was 2.2% in the EU-27, ranging from 3.4% in Germany to 1.1% in Bulgaria. 11 EU countries recorded shares of nurses and midwives of 1.5% or less in their total employment. In total, 4.45 million nurses and midwives (both professional and assistant) were employed in the EU in 2019, half a million more than in 2012 ([91]).

([82]) Other than psychiatric care beds, beds in the private health sector excluded.

([83]) To increase efficiency and reduce waiting times for selected procedures, in recent years many EU countries have shifted some medical services from inpatient to day care settings. High occupancy rates of curative (acute) care beds can be the sign of the pressure on the hospital sector, leading to potential bed shortages during a health crisis, like the COVID-19 pandemic. However, on the other hand, low occupancy rates point to underuse of hospital resources. There is no consensus about the "optimal" occupancy rate, but 85% is often seen as the highest occupancy rate to reduce the risk of bed shortages when a sudden increase in need for admissions happens (OECD and European Union (2020)).

([84]) Break in series.

([85]) Break in series.

([86]) Elective surgery or elective is surgery that is scheduled in advance because it does not involve a medical emergency.

([87]) OECD and European Union (2020).

([88]) Practising physicians are the ones providing services directly to patients. The figures include generalist and specialist practitioners. 2017 data for Luxembourg, Poland and Sweden; data for Slovakia refers to professionally active physicians; data for Greece, Portugal and Finland refers to physicians who are licensed to practise. The number of physicians licensed to practice is higher than the number of practising physicians.

([89]) Greece, Portugal and Finland: physicians licensed to practise. This figure stands higher than the real number of practising physicians.

([90]) Eurostat (2021), *Healthcare personnel statistics – physicians*, https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Healthcare_personnel_statistics_-_physicians

([91]) Eurostat (2020), *Number of nurses and midwives on the rise*, https://ec.europa.eu/eurostat/web/products-eurostat-news/-/edn-20200512-1

Many countries have sought to mobilise additional staff quickly during the pandemic, often by recalling inactive and retired health professionals and mobilising students in medical, nursing and other health education programmes nearing the completion of their studies. Some countries were also able to redeploy some of the staff from less affected regions to those that were more affected. The exceptional workload and psychological drain on health professionals led to a considerable mental health burden, with possible long-term effects for their well-being.

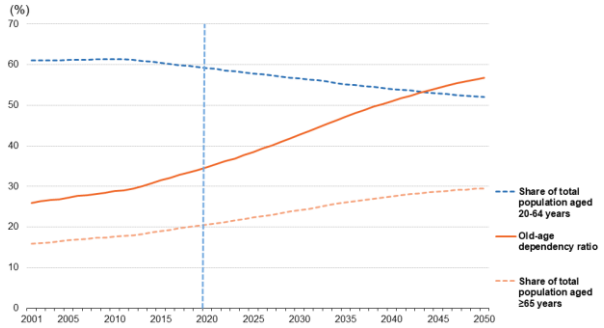
Ageing: a rapid transformation of society

Population projections for the near future foresee a further acceleration in the ageing of society, with an increase in the number and share of the eldest. This trend must be linked to both low fertility rates and an increase in life expectancy, which started to change the EU population structure several decades ago. Eurostat's projections, based on 2019 data, hypothesise that the number of people aged 65 years or more will reach 129.8 million by 2050 in the EU – an increase of 39.3 million (43.4%) from 90.5 million in 2019. The fastest growing group is expected to be the very old (aged 85 years or more). Their relative size will more than double (+113.9% by 2050, with 26.8 million people), and within this group, the number of centenarians is projected to grow close to half a million ([92]).

Chart 1.24

The old-age dependency ratio is projected to more than double over the period 2019-2050xxx

Population structure indicators, EU-27, 2001-2050 (%)



Note: Old-age dependency ratio = Number of people aged 65 years or more divided by the number of people aged 20-64 years, expressed as a percentage.
2008, 2010-2012, 2014-2015 and 2017: breaks in series. 2020-2050: population according to the 2019 Eurostat's projections, baseline variant (EUROPOP2019).

Source: Eurostat, dataset: demo_pjanind and proj_19ndbi. Ageing Europe - statistics on population developments (2020), https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Ageing_Europe_-_statistics_on_population_developments

Click here to download chart.

The ageing of European society raises questions about the sustainability and adequacy of our social security systems ([93]). In the timespan of 50 years, the ratio between people aged 65 years or more and those aged 20-64 (otherwise referred to as the 'old-age dependency ratio') is projected to rise from 34.1% in 2019 to 56.7% by 2050, meaning that there will be fewer than two persons of working age for each older person (*Chart 1.24*). The EU is the region of the world with the highest share of older people, besides Japan. Although this rapid ageing poses many challenges to the EU due, the silver economy can also offer opportunities.

([92]) Eurostat (2021).
Eurostat (2020c).

([93]) This issue was discussed in the previous editions of the ESDE annual review; in particular:
2020 edition, Chapter 3, Section 3 on inclusive growth;
2019 edition, Chapter 2, Section 4 on social sustainability and Chapter 4, Section 4 on investing in long-term care;
2017 edition, Chapter 2 on Intergenerational fairness and solidarity.
https://ec.europa.eu/social/main.jsp?catId=113#ESDE

Box 1.4: Life expectancy, subjective health and unmet need for medical care before the COVID-19 crisis

Life expectancy and subjective health

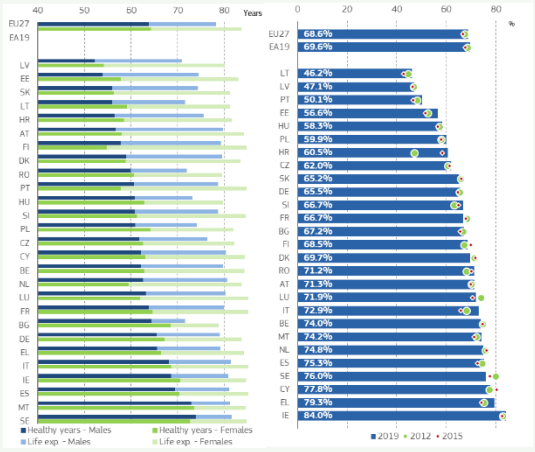
Older people are in greater need of medical and long-term care than the general population, and are less often in good health. The difference between healthy life years and life expectancy in the EU was 14.3 years for men and 18.9 years for women in 2019 (Chart 1). In general, women have an advantage in life expectancy over men, with a favourable difference of 5.5 years. Lithuania has the widest gap (9.6 years), and the Netherlands, the smallest (3.1 years). In most EU Member States, the female life expectancy is 80 years or higher. The differences are greater in countries with a lower life expectancy. These gaps tend to disappear when looking at the healthy life years (+0.9 years for women).

In most EU countries, perceived health indicators improved slightly before the pandemic. 68.6% of the population reported to be in good or very good health, ranging from 46.2% in Latvia to 84% in Ireland. This percentage drops to 40.4% for people aged 65 years and more.

Chart 1

Healthy life years are not automatically correlated to life expectancy at birth

Healthy life years and life expectancy at birth by sex in 2019 (left) and share of people with good or very good perceived health in 2012-2019 (right), EU



Note: Eurostat calculates information relating to healthy life years at birth using mortality statistics and data on self-perceived long-standing activity limitations. Mortality data come from Eurostat's demographic database, while self-perceived long-standing activity limitations data come from EU-SILC.
Information on self-perceived long-standing limitations in usual activities due to health problems is collected through the question 'For at least the past six months, to what extent have you been limited because of a health problem in activities people usually do? Would you say you have been: severely limited / limited but not severely / not limited at all?'

Source: Eurostat, dataset: hlth_hlye and SDG_03_20 / HLTH_SILC_10.

Unmet needs for medical care and health inequalities

Unmet needs for medical care decreased in most EU countries in 2019, although the health crisis will likely reverse this trend temporarily. Though the situation improved in many Member States and the overall level in the EU was low in 2019 (1.7%), the levels of unmet need for medical care due to costs, distance or waiting lists are concerning in some countries – especially in Estonia, where it has deteriorated (Chart 2). For older people (65+), the level of unmet need is slightly higher, at 2.5%. Health inequalities are particularly striking among older persons, as shown by the difference in outcomes and in unmet needs by income groups (Chart 3).

Many people in need of long-term care may not be able to access it. There are several reasons: lack of formal services and availability of beds, financial reasons, etc. Affordability is one of the main barriers. More than one third of households who need long-term care, without using professional homecare services, report financial reasons for this. Others might chose informal care by preference. On average in the EU, only one third of the people aged 65 or more with severe difficulty with personal care or household activities used homecare services in 2014. Those people might rely on informal care or have unmet care needs ([1]).

At EU level, the share of people aged 65 years or more reporting good or very good health is at 40.4%. In this age group, the difference between the first income quintile and the wealthiest one is 24.8 pp in favour of the latter (Chart 3). In 2019, the gap varied between 39.5 pp in Czechia to 13.6 pp in Luxembourg: a lower gap, though still very significant. 2.5% of people aged 65 or more reported unmet needs for medical care due to financial reasons, a waiting list, or distance. In many countries, this share is low and the inequalities across income groups are smaller than 2.0 pp. In other countries, however, the gaps between the poorest and the wealthiest are more concerning, most notably in Romania and Greece. The situation in Estonia should be highlighted too: the level of unmet need is high, standing at 17.8%, and is reported more often by those in the last quintile of income (23%) than in the first (17.0%). Lithuania is another country where the difference is in favour of the poorest.

([1]) European Commission (2021a).

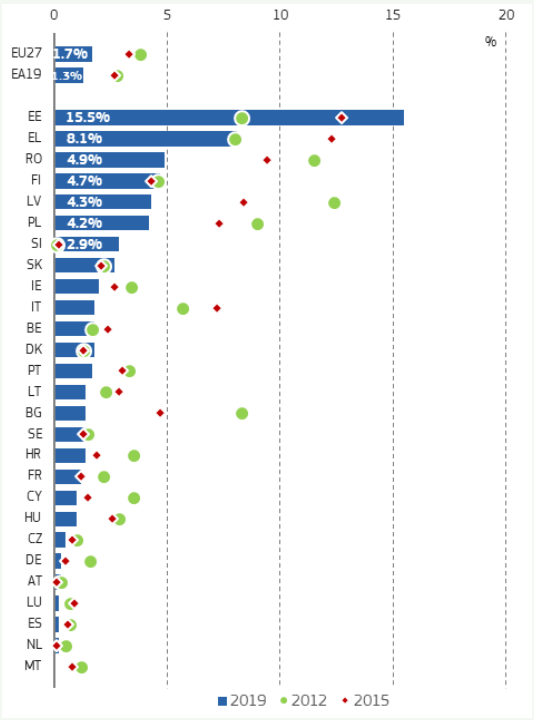
(Continued on the next page)

Box (continued)

Chart 2

Unmet needs for medical care decreased in most EU countries

Self-reported unmet need for medical care, EU27, 2012-2019



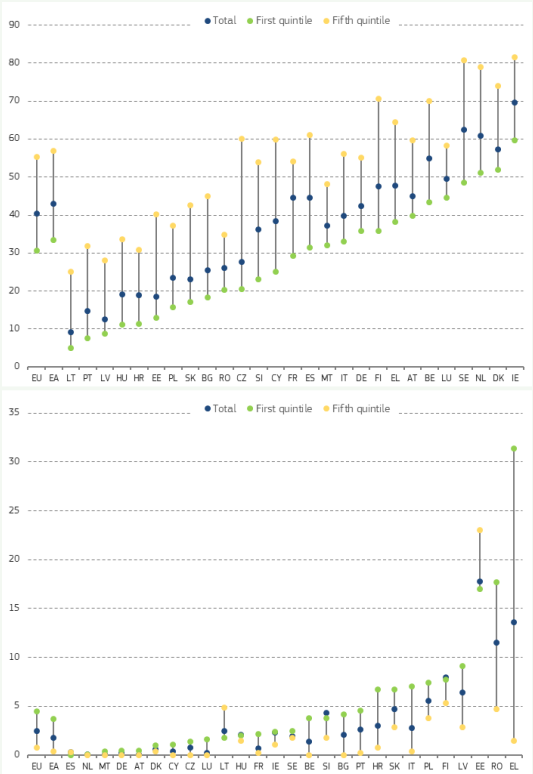
Note: Percentage of population aged 16 and over. The indicator measures the share of the population aged 16 and over reporting unmet needs for medical care due to one of the following reasons: 'Financial reasons', 'Waiting list' and 'Too far to travel' (all three categories are cumulated). Self-reported unmet needs concern a person's own assessment of whether he or she needed medical examination or treatment (dental care excluded), but did not have it or did not seek it.

Source: Eurostat, dataset: hlth_silc_08 and table sdg_03_60.

Chart 3

Substantial health inequalities at old age

Share of people aged 65 years or more with good or very good perceived health (top) and with unmet needs for medical care (bottom), by income quartile in 2019, EU



Note: Unmet need for medical care: The indicator measures the share of the population aged 16 and over reporting unmet needs for medical care due to one of the following reasons: 'Financial reasons', 'Waiting list' and 'Too far to travel' (all three categories are cumulated). Self-reported unmet needs concern a person's own assessment of whether he or she needed medical examination or treatment (dental care excluded), but did not have it or did not seek it.

Source: Eurostat, datasets: HLTH_SILC_10 (top) and HLTH_SILC_08 (bottom).

4.5. Energy poverty and housing conditions

Income losses during the COVID-19 crisis have likely impacted people's ability to cover housing-related expenses, among which those related to the ability to keep one's home warm are among the most relevant. The latest EU-SILC data show that countries differ in the evolution of indicators of energy poverty between 2012 and 2019 (*Chart 1.25*). The percentage of the population unable to satisfy heating needs ([94]) has been falling sharply (by 5 pp or more) in Bulgaria, Malta, Latvia, Italy, Cyprus, Hungary, Poland, Greece, Portugal, Lithuania and Romania (*Chart 1.25*). In the EU, 18.2% of people at risk of poverty were affected (compared with 4.6% for people living in households on 60% or more of the median equivalised income).

Arrears in the payment of utility bills decreased by 1 pp or more in 20 countries since 2012, especially in Romania, Hungary, Croatia and Latvia (*Chart 1.25*). However, the levels are still particularly high in Greece (32.5%) and in Bulgaria (27.6%). In 2019 in the EU, 14.9% of the people living in a household at risk of poverty had arrears on utility bills, compared to 4.5% of those living in the other households. Large families with dependent children or single parents were also more likely to have arrears on utility bills.

The most vulnerable people are less likely to live in an adequate environment and may have suffered more from the obligation to stay at home. For those who have experienced income losses despite the governmental mitigation measures broadly adopted across the EU, paying bills and rent on time became a greater challenge. Long-standing

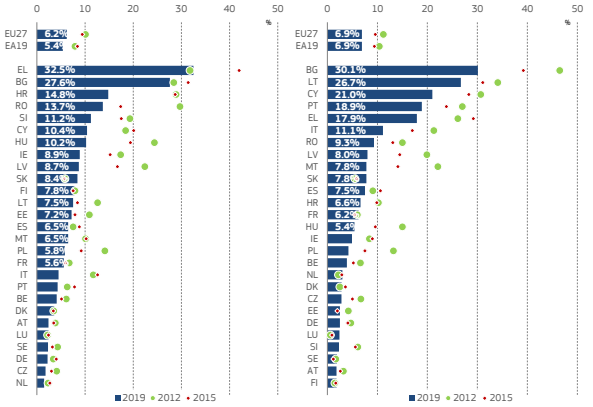
([94]) Similarly, households may face difficulties in keeping their dwellings cool during heatwaves too if the building insulation is not efficient enough or if their housing conditions are maladapted to the local climate. The increasing number of heatwaves and the heat island effect in urban areas will have a higher impact in the future due to climate change. People confined in apartments during the COVID-19 crisis may have suffered from heat, especially the most vulnerable, who have a higher probability of living in poor conditions.

marginalised and segregated communities, such as ethnic Roma, were hit hard by the pandemic and their situation is expected to worsen in regards to housing ([95]).

Chart 1.25

Indicators of energy poverty: positive evolution trends in most countries

Population unable to keep home adequately warm (right) and with arrears on utility bills (left), 2012-2019



Source: Eurostat, dataset: ilc_mdes01, ilc_mdes07 and table sdg_07_60.

Click here to download chart.

Almost 1 in 8 citizens in the EU were living in a dwelling with a leaking roof, damp walls, floors or foundation, or rot in window frames or floor in 2019. This situation affected 31.1% of the population in Cyprus, and had not improved since 2012. In the EU as a whole, the rate has fallen slightly since 2015, from 15.3% to 12.7% (*Chart 1.26*). Coupled with other measures of housing deprivation (no bath or shower and no indoor toilet, or a dwelling considered too dark) as well as overcrowding, it is estimated that 4.0% of Europeans were in a situation of severe housing deprivation ([96]). The rate was much higher than this in some countries, particularly Romania (14.2%) and Latvia (12.7%), despite their national rates decreasing (*Chart 1.26*).

Despite a decrease of 3.6 pp since 2012, severe housing deprivation is still highest for people in the lowest income quintile, standing at 8.8% in 2019. Large families (2 adults with three or more dependent children) as well as single-parent families were also at higher risk; their respective rates were 9.6% and 6.5%. Of children below the age of 18, 6.0% were in severe housing deprivation (down 2.2 pp from 2012). According to the 2019 Social Scoreboard, the severe housing deprivation rate in the EU was higher on average for tenants renting at market price (5.5%) than for owner-occupiers. This affected 9.5% of people below the poverty line, compared with 2.9% for those above.

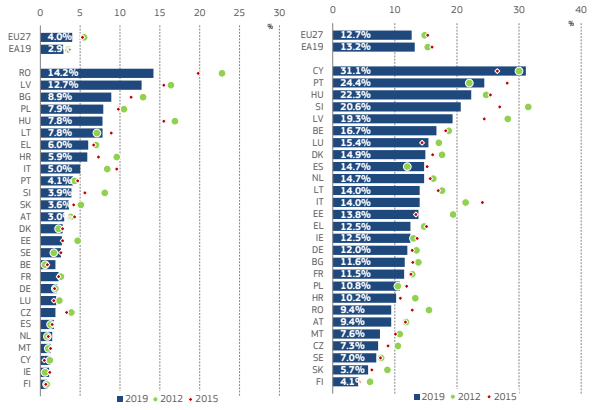
([95]) See Commission (2020c).

([96]) Alternative indicator for SDG 1.

Chart 1.26

Lower severe housing deprivation rates despite high levels of population living in a defective dwelling

Severe housing deprivation rate (left) and population living in a dwelling with a leaking roof, damp walls, floors or foundation, or rot in window frames or floor (right), 2012-2019



Note: Severe housing deprivation rate is defined as the percentage of the population living in a dwelling considered to be overcrowded, while also exhibiting at least one of the housing deprivation measures.
Housing deprivation is a measure of poor amenities and is calculated by referring to those households with a leaking roof, lack of bath or shower, or indoor toilet, or a dwelling considered too dark.

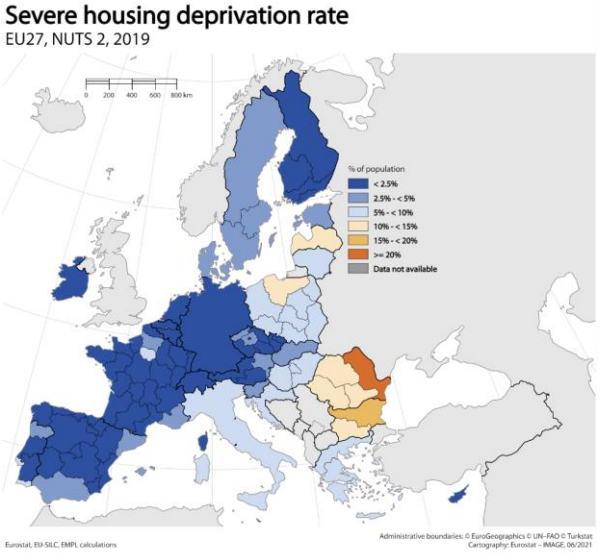
Source: Eurostat, dataset: ilc_mdho06a, ilc_mdho01 and table sdg_01_60.

Click here to download chart.

Chart 1.27

Severe housing deprivation is mostly concentrated in Eastern Europe and the Baltic States

Severe housing deprivation rate at NUTS 2 level, 2019



Note: Severe housing deprivation rate is defined as the percentage of the population living in a dwelling considered to be overcrowded, while also exhibiting at least one of the housing deprivation measures.
Housing deprivation is a measure of poor amenities and is calculated by referring to those households with a leaking roof, no bath or shower and no indoor toilet, or a dwelling considered too dark.

Source: Eurostat, EU-SILC, EMPL calculations.

Click here to download chart.

The highest rates of severe housing deprivation were recorded in some regions of Romania, Bulgaria, Latvia and Poland. Most of the regions in Germany, Spain, France, Portugal, Benelux, Finland and Czechia recorded rates below 2.5%, while most of regions in countries Italy, Greece, Croatia, Hungary and Poland had rates between 5% and 10%.

Box 1.5: Updated Social Scoreboard

The European Pillar of Social Rights, signed as an inter-institutional Proclamation by the European Parliament, the Council, and the Commission on 17 November 2017, remains the European social compass throughout the recovery as well as for the green and digital transitions. It identifies principles and rights in three areas:

- equal opportunities;
- fair working conditions; and
- social protection and inclusion.

The Pillar is accompanied by the 'Social Scoreboard', which monitors the implementation of the Pillar by tracking trends and performances across EU countries and feeds into the European Semester of economic policy coordination.

With the Action Plan for the implementation of the European Pillar of Social Rights, adopted in March 2021, the Commission proposed a revised Social Scoreboard. It will help to monitor the actions and policy priorities proposed to implement the Pillar principles, and support EU's efforts towards a strong Social Europe by 2030. The headline indicators of the revised Scoreboard were endorsed by the 14 June 2021 meeting of Employment, Social Policy, Health and Consumer Affairs Council, while negotiation on the use of the secondary Scoreboard indicators will continue in autumn 2021.

The updated Social Scoreboard is as follows (new or updated indicators are marked with **):

	Headline indicators	***Secondary indicators***	***SDG***
Equal opportunities	Adult participation in learning during the last 12 months** Share of early leavers from education and training Individuals' level of digital skills Youth NEET rate (15-29) Gender employment gap Income quintile ratio (S80/S20)	Tertiary education attainment Underachievement in education (including in digital skills**) Participation of low-qualified adults in learning ** Share of unemployed adults with a recent learning experience** Gap in underachievement between the bottom and top quarter of the socio-economic index (PISA)** Gender gap in part-time employment Gender pay gap in unadjusted form Income share of the bottom 40% earners (SDG)**	4. Quality education 5. Gender equality 10. Reduced inequalities
Fair working conditions	Employment rate Unemployment rate Long-term unemployment rate GDHI per capita growth	Activity rate Youth unemployment rate Employment in current job by duration Transition rates from temporary to permanent contracts Share of involuntary temporary employees** Fatal accidents at work per 100 000 workers (SDG)** In-work-at-risk-of-poverty rate	8. Decent work and economic growth
Social protection and inclusion	At risk of poverty or social exclusion rate (AROPE) At-risk-of-poverty or social exclusion rate for children (0-17)**	At-risk-of-poverty rate (AROP) Severe material and social deprivation rate (SMSD) Persons living in a household with a very low work intensity Severe housing deprivation (owner and tenant)	1. No poverty 3. Good health and well-being

(Continued on the next page)

Box (continued)

	Impact of social transfers (other than pensions) on poverty reduction Disability employment gap** Housing cost overburden** Children aged less than 3 years in formal childcare Self-reported unmet need for medical care	Median at-risk-of-poverty gap** Benefit recipients rate [share of individuals aged 18-59 receiving any social benefits (other than old-age) among the population at-risk-of-poverty]** Total social expenditure by function (% of GDP): Social protection, healthcare, education, long-term care** Coverage of unemployment benefits [among short-term unemployed]** Coverage of long-term care needs** Aggregate replacement ratio for pensions Share of the population unable to keep home adequately warm (SDG)** Connectivity dimension of the Digital Economy and Society Index Children from age 3 to mandatory primary school age in formal childcare** Out-of-pocket expenditure on healthcare Healthy life years at age 65: Women and men Standardised preventable and treatable mortality (SDG)**	

5. CONCLUSIONS

The outbreak of the COVID-19 pandemic, with the resulting health crisis and the necessary containment measures to curb the spread of the virus, led to a severe contraction of GDP in the EU (-6.1%) in 2020. The total hours worked dropped, almost as sharply as the economic activity. It is expected that, with the gradual rollout of vaccinations and the progressive lifting of restrictive measures, the EU economy will grow strongly in the second half of 2021 and in 2022, with GDP reaching pre-crisis levels by mid-2022.

The EU employment rate declined in 2020 by 0.7pp to stand at 72.4%, with substantial variation across Member States. The decline was similar between women and men at EU level, but had a greater effect on certain categories, such as young people, migrants, and workers on temporary and part-time arrangements. Absences from work of employed people also strongly increased in the first two quarters of 2020 to return to pre-crisis levels in the third quarter.

The EU unemployment rate increased in 2020 to 7.0% of the labour force, 0.3pp more than in 2019. Measures to protect employment helped cushion this increase, although the impact of the crisis on young people has been deep, with both youth unemployment and NEET rates rising strongly.

The COVID-19 pandemic pushed 1.8 million people into inactivity, especially in the first part of 2020. The activity rate declined especially for young people, with transitions to inactivity escalating during the first wave of the pandemic and reverting to pre-crisis levels in the second half of 2020.

Exceptional policy response to the COVID-19 crisis has countered the unprecedented labour-income loss. According to Eurostat's flash estimates, the median employment income for workers is estimated to have decreased by 7.2%. Losses are very unequally spread between countries and particularly strong for the most vulnerable sub-groups of the working population. However, the income support measures implemented in most Member States have managed to shield considerably the most vulnerable employment groups and this is confirmed by Eurostat flash estimates, which show a slight increase of 0.7% of median household income. Yet, there are risks that previous inequalities – beyond income – will deepen in the near future, if not aptly addressed. Further policy action needs to bolster a sustainable and inclusive recovery after the crisis that has recently hit EU economies and societies. In this respect, the EU and its Member States have been mobilising a wide range of measures to tackle and mitigate the impact of the crisis. At the EU level, this included the State Aid Temporary Framework, adopted in March 2020, the flexibilisation of fiscal rules, and of the use for the EU Cohesion Funds. An innovative instrument for 'temporary Support to mitigate Unemployment Risks in an Emergency' (SURE) was also adopted.

The major European Recovery Plan, which will boost the economic recovery and support the green and digital transition, involves the creation of a new instrument, 'Next Generation EU' which combined with the long-term EU budget amounts to EUR 1.8 trillion and represents the biggest financial stimulus package ever adopted at the EU level „. Further, the European Commission adopted a Recommendation on Effective Active Support to Employment following the COVID-19 crisis (EASE), which outlines a strategic approach to gradually transition between emergency measures taken to preserve jobs in the short term and new measures needed for a job-rich recovery.

COVID-19 has tested the resilience of health systems and placed strong pressure on health workers. The pressure on health systems caused delays in providing health services, adding to challenges in access to healthcare and impact the health status of the population. Especially, older people were the most impacted by the COVID-19, and suffered the majority of deaths, notably in the first part of the crisis when those living in old-age homes or long-term care facilities had the highest mortality rates. Furthermore, the pandemic showed that the social determinants of health are crucial. Disadvantaged groups are at higher risk of dying, to suffer chronic illnesses and to declare a worse health status than the general population. They also have a greater probability losing the job and to live in an overcrowded, inadequate or insecure housing and environment.

Despite the cushioning effect of public measures, the most disadvantaged or fragile still suffered severely from the pandemic. The confinement measures affected different population groups unevenly. The impact of the confinement measures on the labour market was particularly felt by young people - their employment rate dropped by 2.8pp in 2020 compared to 2019. Physical closure of schools, training centres and universities affected the life of children, young people and families (especially single partners), while the disruption of several health and social services significantly affected persons with disability, migrants and marginalised and segregated minorities (such as Roma), and the homeless.

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CHAPTER 2

A severe crisis affecting everyone: socio-economic impacts of the coronavirus pandemic

1. INTRODUCTION ([97])

The COVID-19 pandemic, whilst first and foremost a public health crisis, has triggered a socio-economic crisis of exceptional magnitude as was shown in Chapter 1. Its impacts cover nearly all aspects of Europeans' lives: their work, incomes, access to education and training, health care and social services, meetings with family or friends, including informal care for children or frail relatives. Moreover, in line with the exponential rise in COVID infections, many effects of the crisis were highly acute and causing a major socio-economic shock. While all Europeans have experienced negative impacts from the pandemic to some extent, there are concerns it may have widened pre-existing inequalities along several dimensions. Persons in fragile health are at higher risk of severe illness or even death as a result of COVID-19. People with limited resources are more likely to live in overcrowded homes and depend on public services and facilities. Under such circumstances, social distancing is much harder. Many of the heavily hit sectors have a high number of workers in non-standard forms of employment ([98]) and relatively low wages. Whereas many households used digital tools for home schooling, work or to keep in contact with family and friends during the pandemic, the most vulnerable were often less able to do so due to a lack of equipment, private internet connection or digital skills.

This chapter presents evidence on how different population categories have been affected by the crisis and its socio-economic impacts. The chapter provides first a detailed review of the effects on employment across different occupations and of the wages of critical workers. It then simulates the effect on incomes and the role of tax and benefit systems in mitigating the impact of the shock. Next, the chapter looks at the social effects of COVID-19 for a number of specific disadvantaged groups, in particular low-income and poor households, migrants, persons with disabilities and homeless persons. The final section draws conclusions.

2. THE EMPLOYMENT IMPACT OF COVID-19 ON DIFFERENT GROUPS OF PEOPLE, OCCUPATIONS AND SECTORS

The impact of the pandemic on the labour market varied greatly across different groups of workers. The second quarter of 2020 was the most severely hit by the outbreak of the pandemic. Hence, the analysis in this section shows data on employment changes between the second quarters of 2019 and 2020. The analysis also includes data on the respective fourth quarters (as Q4 of 2020 is the most recent quarter for which data are available), as well as annual data ([99]). The breakdown by characteristics shows that some groups experienced much higher falls in employment (*Chart 2.1*). The percentage change

([97]) Authors: Alessia Fulvimari, Katarina Jaksic, Argyrios Pisiotis and Tim Van Rie. Contributions by Sara Flisi, Giulia Santangelo, Michele Aquaro, Marco Colagrossi and the EUROMOD Team from the European Commission's Joint Research Centre.

([98]) Including workers on fixed-term contracts, part-time workers, self-employed and informal workers.

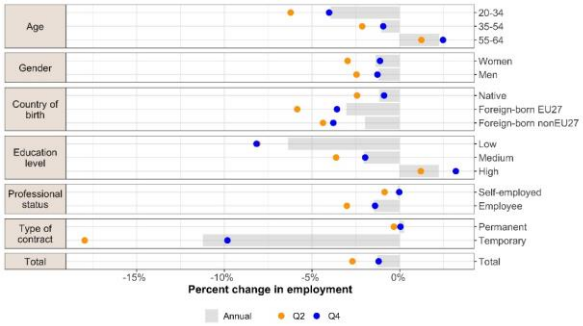
([99]) Changes in the design scheme in 2020 have led to a break in the time series for the German data of the Labour Force Survey. As a result, the LFS 2020 EU27 average is unreliable when disaggregated data are presented. For this reason it was decided to use the EU26 average (instead of EU27) when referring to 2020 LFS data. See *Box 2.3* for findings for Germany based on national data.

varied significantly across the categories defined by the main demographic characteristics, such as age, country of birth and educational level. In descending order, low educated workers, young workers and the foreign-born from other EU27 Member States were the groups most severely hit by the employment drop. These groups also were the least likely to remain in full employment and present at work in Q2 2020 compared to the same quarter in 2019, as shown in *Table 2.1* which presents the differences in labour market transitions between Q1 and Q2 2020 and 2019 for people employed in Q1 of the given year. More precisely the decline in probabilities of remaining in full employment is remarkable for workers born outside EU27 (20 pp), followed by low educated workers (19 pp) and younger people aged 14 to 29 (13 pp). Foreign-born outside the EU27 and low educated workers made more transitions from employment into inactivity in Q2 2020 compared to the year before. In addition, these two groups have also experienced higher than average transitions from full employment to employed, but absent from work, which reflects the large use of short time work schemes among low educated workers (+15 pp) and foreign-born outside the EU27 (+14 pp). Overall, labour market transitions suggest that the most vulnerable workers have been hit the hardest by the initial shock of the COVID-19 crisis.

Chart 2.1

Employment impacts of COVID-19 differ greatly across different groups of workers

Employment growth by socio-demographic characteristics and occupational status, Q2/Q4/annual level of 2020 compared to Q2/Q4/annual level of 2019 EU26



Note: Data refer to the age group 20-64. As explained in footnote 3, it was decided to exclude Germany from the analysis due to a break in the time series. Including Germany in the EU aggregate could change some of the employment growth impacts presented in *Chart 2.1*, particularly for gender, as it seems that men in Germany experienced a decline in employment in 2020, while the employment rate of women slightly increased.

Source: Calculations by the European Commission's Joint Research Centre, based on a Eurostat special extraction on EU-LFS data.

Click here to download chart.

Simultaneously, some groups even saw an increase in employment. This is the case for highly educated workers, for example (*Chart 2.1*). This could suggest an increase in the demand for these workers during the pandemic.

The employment impact of COVID-19 on gender is less straightforward to analyse. On the one hand, no substantial gender differences emerge in terms of employment losses (*Chart 2.1*). On the other hand, as pointed out in Chapter 1, women experienced a steeper fall in working hours than men did in Q2 of 2020. In addition, women experienced a stronger decline (13 pp) in probabilities of remaining in full employment in Q2 2020 compared to men (12 pp) (*Table 2.1*). Women also showed a higher transition from full employment to employed, but absent from work, compared to men (10 pp vs. 8 pp).

The decline in employment affected self-employed and employees equally (*Chart 2.1*). Focusing on employees, it is clear that the major drop in employment involved those on temporary contracts, who have been among the worst hit by the COVID-19 pandemic ([100]), while employees with permanent jobs saw rather stable employment levels ([101]). This is confirmed also by labour market transitions data (*Table 2.1*), which show a high drop in probabilities of remaining in full employment (15 pp) in Q2 2020.

Table 2.1

High transitions from employment to employment but absent from work at the outbreak of the COVID-19 pandemic (Q2 2020)

Difference in labour market transitions between Q1 and Q2 of 2020 and 2019 for people employed in Q1 of the relevant year, pp

	Employed	Employed, less hours	Employed, absent	Unemployed	Outside labour force
TOTAL	-12	1	10	1	1
Gender					
Women	-13	1	10	1	2
Men	-12	1	8	1	2
Age					
14-29	-13	0	10	1	2
30-54	-12	2	9	0	1
55-74	-11	0	8	0	2
Education level					
Low	-19	1	15	0	2
Medium	-13	0	10	1	1
High	-9	2	6	0	1
Type of Contract					
Permanent	-12	1	10	0	1
Temporary	-15	0	9	1	3
Country of birth					
Foreign-born nonEU27	-20	1	14	1	3
Foreign-born EU27	-16	2	10	0	1
Native	-11	1	9	0	1

Note: The methodology used by Eurostat is explained at https://ec.europa.eu/eurostat/web/experimental-statistics/labour-market-transitions

Source: Calculations by the European Commission's DG Employment, Social Affairs & Inclusion based on Eurostat experimental statistics on labour market transitions.

Click here to download table.

The change in employment by occupational groups (ISCO categories ([102])) deserves attention. Most occupational groups underwent a decline in the level of employment from 2019 to 2020, with a negative percentage change both in the second and fourth quarters of the year. Exceptions are professionals ([103]), whose employment rate increased in both quarters, and technicians and associate

([100]) European Commission (2021a), OECD (2020b).

([101]) For more details on the self-employed, see European Commission (2021b).

([102]) ISCO is the International Standard Classification on Occupations. It falls under the purview of the International Labour Organization (ILO) for organising jobs into a clearly defined set of groups according to the tasks and duties undertaken in the job. The ISCO classification is available at different levels of granularity. For the purpose of this edition of the ESDE report ISCO is used at 1-digit, 2-digit and 3-digit level.

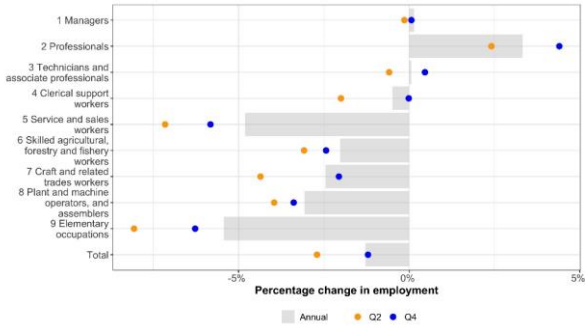
([103]) ISCO category 2, which includes professionals in the fields of science and engineering, health, teaching, business and administration and ICT.

professionals whose employment rate considerably recovered in the fourth quarter of 2020 (*Chart 2.2*). While the majority of the other categories experienced an employment drop, professionals saw an increase of 2.4 % and 4.4 % in Q2 2020 and Q4 2020 respectively. To some extent, this is consistent with a structural trend over the last ten years. In line with the overall trends described above, the decrease in blue-collar occupations was generally stronger in Q2 than Q4 of 2020, especially for craft and related trade workers, and elementary occupations. A similar pattern is found for service and sales workers. By contrast, the employment growth among professionals was higher in Q4 than Q2.

Chart 2.2

Most occupational groups, except for professionals, experienced a decline in employment due to COVID-19

Employment growth by occupational group, Q2/Q4/annual level of 2020 compared to Q2/Q4/annual level of 2019, EU26



Note: Data refer to the age group 20-64.

Source: Calculations by the European Commission's Joint Research Centre, based on a Eurostat special extraction on EU-LFS data.

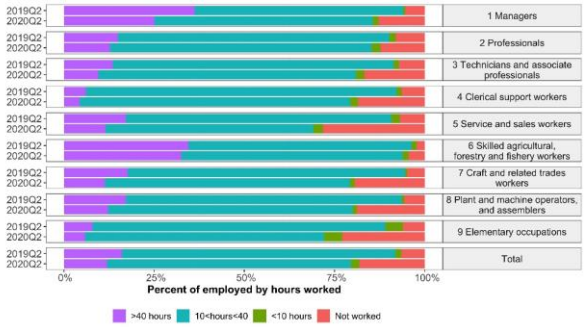
Click here to download chart.

The full impact of the pandemic on the labour market is visible not only in employment levels, but also in the drop of hours worked. In fact, during the pandemic many people were not working despite being formally employed. Especially in the first months, many countries adopted a range of measures to contain employment losses (including a ban on dismissals in some countries), leading to reduced working hours and furlough schemes (including zero working hours) rather than mass dismissals. Absences from work reached very high levels during the pandemic ([104]). This is due in particular to a peak in temporary lay-offs ([105]), mainly due to short time work schemes protecting workers from being dismissed (*Table A1.1 in Annex 1*). As a result, even though employment fell less than GDP, the decline in hours worked shows a more severe impact on the labour market and slack than suggested by aggregate employment figures ([106]). For all occupational groups, the share of individuals employed but not working at all during the reference week (light red bar in *Chart 2.3*) increased in Q2 of 2020 relative to the Q2 of 2019. The highest increases can be observed for the groups of service and sales workers and elementary occupations. These same occupational groups have thus reduced working hours by the maximum and have been effectively protected from unemployment.

Chart 2.3

Hours worked dropped even more than employment

Distribution of hours worked by occupational group, annual level of 2020 compared to annual level of 2019, EU26



Note: Data refer to the age group 20-64.

Source: Calculations by the European Commission's Joint Research Centre, based on a Eurostat special extraction on EU-LFS data.

Click here to download chart.

Similar to occupations, the COVID-19 pandemic has also affected different sectors to a varying degree. The highest decline in employment was registered in the sectors (NACE categories ([107])) most severely affected by the lockdown measures, such as accommodation, food, travel agency activities, activities of households as employers of domestic personnel (*Chart 2.4*), undoubtedly due to travel restrictions as well as other precautionary measures taken in response of the pandemic. On the contrary, manufacture of basic pharmaceuticals, insurance, computer programming and telecommunications are among the activities that experienced the highest percentage increase in employment in 2020 (compared to the previous year) (*Chart 2.4*).

([104]) As reported by Eurostat, 'the notion of temporary absence from work refers to situations in which a period of work is interrupted by a period of absence. This implies that persons are generally to be considered as having been temporarily absent from work and therefore employed, if they had already worked at their current activity and were expected to return to their work after the period of absence'.

([105]) An absence from work is classified as a 'temporary lay-off' if it is due to slack work for technical or economic reasons. Those for whom a written or unwritten contract of employment, or activity, has been suspended by the employer are also considered as employed and absent from work due to temporary lay-off if they have an assurance of return to work within a period of 3 months or receive at least 50 % of their wage or salary from their employer. While it is not straightforward to identify workers involved in schemes such as short-time work in the EU-LFS, this variable could be used as a possible way to capture such type of scheme.

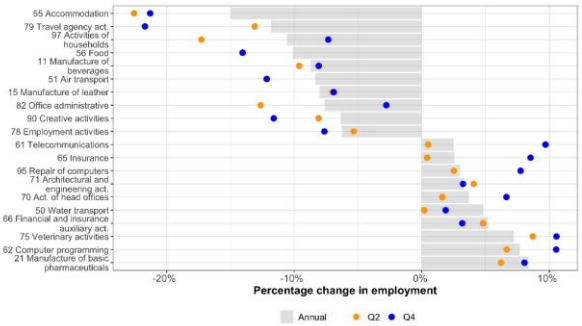
([106]) European Commission (2020).

([107]) NACE is the industry standard classification system used in the EU. Similar to ISCO it is available at different levels of granularity. For the purpose of this edition of the ESDE report NACE is used at 1-digit and 2-digit level.

Chart 2.4

Accommodation, food and travel agency activities are among the sectors most affected by COVID-19

Growth rate in employment in the EU26: top and bottom 10 sectors (NACE 2-digit), Q2/Q4/annual level of 2020 compared to Q2/Q4/annual level of 2019



Note: Data refer to the age group 20-64. Only sectors with an employment level above 100 000 individuals are considered. Top and bottom sectors are selected based on the annual change between 2019 and 2020.

Source: Calculations by the European Commission's Joint Research Centre, based on a Eurostat special extraction on EU-LFS data.

Click here to download chart.

Box 2.1: The US labour market in times of COVID-19

The United States (US) labour market differs considerably from those of the EU countries, with the latter generally having a higher degree of employment protection (both in terms of individual and collective dismissal), than the former.

In the US, unemployment initial claims went from about 250 000 in the second week of March 2020 to almost 3 million just one week later. By the beginning of April, claims reached a record-high figure of 6.1 million. Between March 14 and August 22, more than 58 million initial unemployment benefit claims were filed.

These figures hide important differences across socio-economic groups, sectors and areas. Compared to other recessions, which usually have a heavier toll on male employment than for female's, the drop in employment has been higher in sectors more affected by the social distancing measures, which have a higher proportion of women workers. ([1]) A similar mechanism is also behind the loss of employment among ethnic minorities. Black, Latin and Asian communities were disproportionately affected by the crisis compared to white Americans.

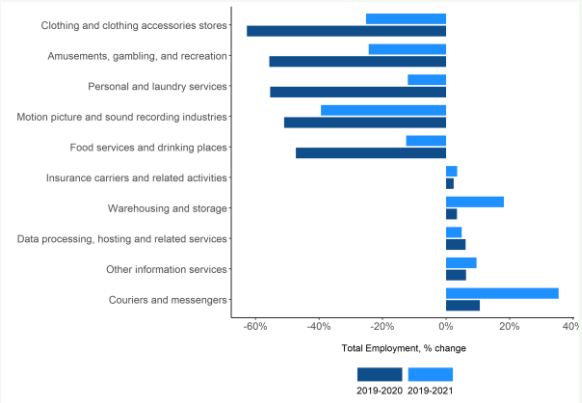
In addition, similarly to the EU, the impact has been heterogeneous across sectors. In the art, entertainment and recreations sectors, the workforce was reduced by more than half as 1.2 million people lost their jobs in April 2020, compared to a year earlier. A loss of about 45% in the total employment over the same period has also been recorded in the accommodation and food services industries, where about 6.5 million people were laid off. Conversely, the finance and insurance sector, characterised by a high degree of teleworkability, increased the number of people employed by about 135 000 jobs.

Chart 1 shows the sectors registering the highest decrease and increase in employment between 2019-2020 and 2020-2021. Among the most hit sectors, clothing and clothing accessories stores and amusement, gambling, and recreation industries lost, respectively, 62% and 55% per cent of their labour force from April 2019 to April 2020. In 2021, they are still lagging behind the 2019 levels by more than 20 percentage points. The motion picture and sound recording industries instead recorded a slightly lower drop (-50%), and still lag 40 percentage points behind 2019 values. On the other hand, other industries saw a considerable increase. In particular, the total employment of couriers and messengers increased by more than 10% at the beginning of the crisis. In March 2021 it records 280 000 more employed than in April 2019, an increase of about 35%. Similar dynamics can also be seen for employment in the warehousing and storage sector, reflecting the higher number of online purchases driven by the crisis. ICT-related jobs also show positive trends, recording a growth of more than 5% from April 2020 to April 2021.

Chart 1

Sectoral variation in the impact of COVID-19 on employment is high in the US, similarly to the EU

Total employment, year-to-year variation (%): top and bottom 5 sectors, excluding sectors employing fewer than 100,000 individuals (NAICS level 3).



Note: Data for 2019 and 2020 are from the month of April (seasonally adjusted). Data for 2021 are from the month of March (seasonally adjusted).

Source: US Bureau of Labor Statistics

([1]) Alon, T. M., Doepke, M., Olmstead-Rumsey, J., & Tertilt, M. (2020)

3. CATEGORISATION OF WORKERS

The impact of the crisis on employment depends on some key characteristics of occupations. This section analyses three characteristics of jobs in times of COVID-19: 1) critical vs. non-critical occupations, 2) technical teleworkability, and 3) social interaction. These aspects are analysed through indexes built on occupational groups defined at the level of detailed occupations (ISCO 3-digit level), allowing for identification of jobs that have been more at risk of disruption during the pandemic. This section first introduces the distinction between critical and non-critical workers (Section 3.1). It then presents aspects of technical teleworkability and social interaction (Section 3.2). Finally, it proposes a classification of workers in eight categories and shows both the distribution and size of employment in 2019, as well as changes in employment between 2019 and 2020 for those eight categories (Section 3.3).

3.1. Critical vs. non-critical jobs

Critical jobs can be defined as all those occupations that 'need to be performed even during a pandemic in order to keep citizens healthy, safe and fed' ([108]). In other words, critical occupations have played a key role during the COVID-19 pandemic, constituting those that perform essential activities. During the first lockdown phase, several countries strictly categorised sectors into essential and non-essential. Non-essential activities were formally shut down, unless they could operate remotely. Such provisions were relaxed in some phases (as the number of cases decreased) allowing non-essential activities to re-open.

Critical occupations are identified based on the Commission Communication on free movement of workers during the COVID-19 outbreak ([109]). The Communication defines a list of 'key workers' that should exercise their critical occupations without undue hindrance since they perform activities related to essential services. In line with the recent literature on the topic ([110]), the corresponding list of occupations has been translated into a list of ISCO 2 and 3-digit occupations. This categorisation provides a distinction between workers that were allowed to continue working while being physically present at the workplace even under the strictest containment measures, and those who were not ([111]).

The group of critical workers is very heterogeneous. It includes: professionals in health, information and communication, teaching and some fields of engineering and science; associate professionals in the fields above; personal care workers, agricultural, fishery and animal producers workers (skilled and not), drivers and mobile plant operators, elementary workers and refuse collectors.

3.2. Technical teleworkability and social interaction

Telework has played an important role during the COVID-19 pandemic. It has favoured business continuity, thus reducing potential risks of job disruption. The use of telework in the EU has been extensively analysed ([112]). The analysis in this section relies on a teleworkability index ([113]), which classifies jobs as either technically teleworkable ([114]) or not, based on the extent of physical interaction involved in a range of physical tasks.

Different occupations may require varying degrees of social interaction ([115]). The social interaction index ([116]) used in this section serves as an additional qualification of the assessment of technical teleworkability. Some occupations that do not require physical interaction with people or machinery (and are thus technically teleworkable) nevertheless involve a high degree of social interaction. In these cases, carrying out tasks remotely is still possible, but more difficult and it is probably associated with lower quality of the service provided when teleworking.

Both the technical teleworkability and the social interaction indexes range from zero to one. An

([108]) Basso et al. (2020).

([109]) Communication from the Commission (2020/C 102 I/03) available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020XC0330(03)&from=EN

([110]) Fasani and Mazza (2020).

([111]) Starting from this Communication, workers exercising critical occupations are identified as those working in the following ISCO 2- and 3-digit categories: 213 Life science professionals; 214 Engineering professionals (excluding electrotechnology); 215 Electrotechnology engineers; 22 Health professionals; 23 Teaching professionals; 25 Information and communications technology professionals; 31 Science and engineering associate professionals; 32 Health associate professionals (except 323 Traditional and complementary medicine associate professionals); 35 Information and communications technicians; 53 Personal care workers; 61 Market-oriented skilled agricultural workers; 62 Market-oriented skilled forestry, fishery and hunting workers; 63 Subsistence farmers, fishers, hunters and gatherers; 751 Food processing and related trades workers; 816 Food and related products machine operators; 83 Drivers and mobile plant operators; 91 Cleaners and helpers; 92 Agricultural, forestry and fishery labourers; 93 Labourers in mining, construction, manufacturing and transport; 96 Refuse workers and other elementary workers.

([112]) European Commission (2020), Labour Market And Wage Developments in Europe Annual Review.

([113]) Sostero et al. (2020).

([114]) Technical teleworkability is defined as 'not having to physically manipulate objects/people/machinery' in Sostero et al.(2020).

([115]) Social interactions tasks are: selling or influencing others, training and teaching others, assisting and caring for others, performing for or working directly with the public, coordinate the work and tasks of others. Social interaction is not exactly the same as physical proximity, which has been extensively analysed European Commission (2020). Physical proximity is relevant in view of the disease exposure (which is not the focus of this report). Social interaction uses more 'work activities' rather than 'work context' (the latter being the section of questions used for the physical proximity index). Using 'work activities' has a theoretical justification in the context of the tasks framework developed for occupational analysis.

([116]) Idem.

occupation whose technical teleworkability index value is higher than 0.4, is defined as technically teleworkable. If the social interaction index of an occupation is lower/higher than 0.5, the extent of social interaction required in that job is defined as low/high. These thresholds are used to transform the two indexes into binary or 'dummy' variables: occupation teleworkable or not; occupation with a low or high level of social interaction ([117]).

3.3. Categorisation of workers on the three indexes combined

A joint analysis of technical teleworkability and social interaction allows the classification of occupations into four categories. These are:

i. **Not teleworkable, high social interaction** (e.g. health professionals ([118]) and associate professionals, carers as well as service and sale workers);

ii. **Not teleworkable, low social interaction** (e.g. skilled agricultural, forestry and fishery workers; craft and related trade workers; plant and machine operators and assemblers; most elementary occupations);

iii. **Teleworkable, high social interaction** (e.g. managers; teaching professionals; business, administration, legal, social and cultural professionals and associated professionals);

iv. **Teleworkable, low social interaction** (e.g. clerical support workers and ICT professionals).

In addition, each of the above four categories is also divided into critical and non-critical occupations, generating eight categories in total. Crossing the technical teleworkability and social interaction indexes with the binary definition critical vs. not critical occupation, provides reconciliation for the two distinct aspects. On the one hand, critical occupations consist of jobs in essential sectors that were not shut down. On the other, teleworkable occupations are presumably less exposed to the consequences of the pandemic, since they could continue to operate despite the lockdown measures. The outcome of this classification is presented in *Chart 2.5* showing the distribution of employment across the eight categories in the year before the pandemic ([119]).

Each occupation is represented by a circle whose dimension is proportional to the number of individuals employed in that occupation in 2019. The first panel is clearly less populated, as few occupations were defined as critical. Looking at the positions of the circles in the two panels above, it emerges that for both critical and non- critical occupations there is a concentration of occupations at technical teleworkability index values close to zero, meaning that a high proportion of employment cannot be performed remotely at all.

Critical occupations tend to be less teleworkable than non-critical ones. *Chart 2.5* shows the occupations classified in the three dimensions. Many non-critical occupations could continue operating during the pandemic, thereby cushioning the adverse impact on employment. A distinction needs to be made between occupations requiring low and high social interactions, since teleworkable occupations with high social interaction can be performed remotely, but often with a loss of quality ([120]). This is clearly illustrated by teaching professionals in primary schools. Overall, critical occupations are found to be less frequently teleworkable.

([117]) Ibid.

([118]) While health professionals are considered an occupation that is not teleworkable for the purpose of this analysis, it should be noted that the use of telemedicine did increase substantially during the pandemic. Telemedicine allows health care professionals to evaluate, diagnose and treat patients at a distance using telecommunications technology.

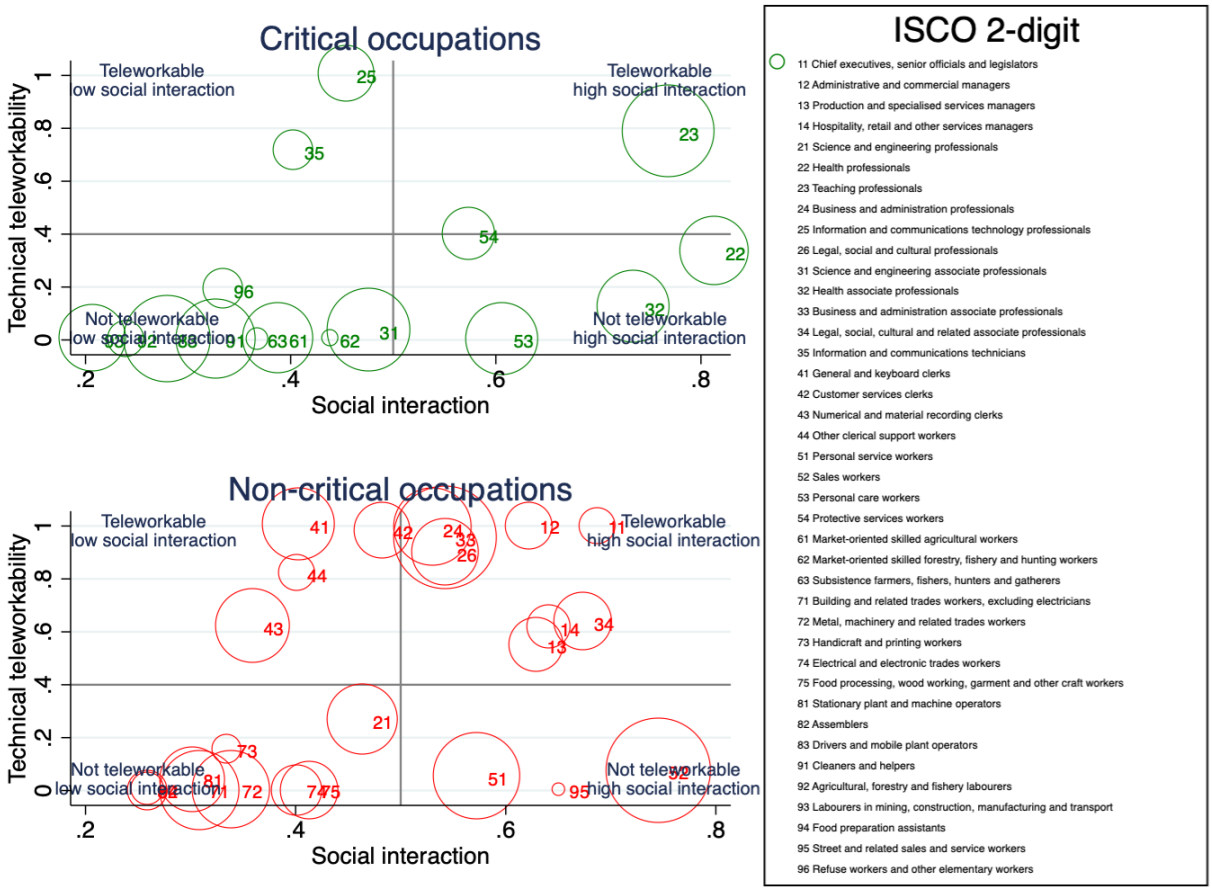
([119]) Sostero et al. (2020) provide indexes computed at the ISCO 3-digit level; these indexes were merged with information from both special extractions on EU-LFS provided by Eurostat for 2019 and 2020, and with EU-LFS microdata for 2019. This ISCO level is normally the level of disaggregation available in EU-LFS microdata and special extractions. In some cases, the indexes needed to be applied at a more aggregate occupation level due to lack of more detailed information, especially in the microdata (i.e. for MT, for which information is only available at the 1-digit level, and for BG, PL, SI, for which it is available at the 2-digit). In such cases, the technical teleworkability and social interaction indexes computed at the ISCO 3-digit level were aggregated to the 1- or 2-digit level based on the relative weight of employment in 3-digit occupations in each Member State in 2019, which is available from Eurostat special extractions. This procedure is in line to the one used by Sostero et al. (2020) to aggregate from 5-digit Codici Professionali into 3-digit ISCO categories.

([120]) Sostero et al. (2020).

Chart 2.5

Critical jobs are generally less teleworkable than non-critical jobs

Distribution of employment across different occupational groups, Q2 2019, EU27



Note: The top panel corresponds to critical occupations and the bottom one to non-critical occupations. Within each panel, the chart is divided into four quarters corresponding to the four categories defined in the chapter. The grey lines on the y and x axes represent the thresholds of the technical teleworkability and social interaction indexes. These thresholds allow the definition of four quarters. Critical occupations are identified based on the categorisation provided by the Commission Communication on Guidelines concerning the exercise of the free movement of workers during COVID-19 outbreak. The size of the bubble represents the size of employment in the corresponding occupation in 2019, based on data from a Eurostat special extraction. Data refer to the age group 20-64. Armed forces are not taken into account in the analysis.

Source: Calculations by the European Commission's Joint Research Centre, based on a Eurostat special extraction on EU-LFS data for 2019 and on indexes produced in Sostero et al. (2020).

Click here to download chart.

The eight categories show a very diverse evolution in employment between 2019 and 2020. This is what emerges from *Chart 2.6*, which shows the percentage change in employment in the second and fourth quarter of 2020 with respect to the corresponding quarter of 2019, as well as the overall annual change (2019-2020).

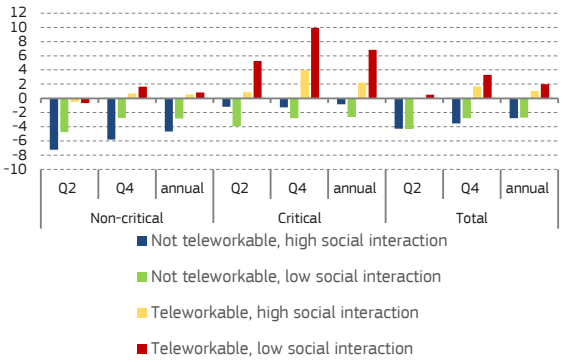
Occupations that are critical and teleworkable, and that require low social interaction, are the only ones with substantial positive growth rate in employment (red bars, right in *Chart 2.6* under critical). This is the case for the second and fourth quarter of 2020, and for the annual values, with the highest increase in the fourth quarter. The employment growth registered was driven by information and communications technology professionals (software and applications developers, and analysts and database and network professionals), though a smaller increase was registered also for Information and communications technology operations and user support technicians. The employment growth in this category can be explained by the fact that these occupations carry out essential activities whilst continuing to operate despite the lockdown measures. They can be performed remotely from a technical point of view and require a low level of social interaction, therefore implying a limited loss of quality in the tasks performed. These occupations might have also been in higher demand due to increased resort to telework during the pandemic.

Employment in non-critical occupations that are teleworkable and require low levels of social interaction remained relatively stable (red bars, right in *Chart 2.6* under non-critical). This group includes finance, legal, financial and mathematical professionals (which all registered an increase in employment between 2019 and 2020, between 2.5 % and 5.8 %, stronger in the second part of the year) and a variety of clerical support workers (from general office clerks and numerical clerks, for which employment was rather stable, to secretaries and customer services clerks, for which it decreased).

Chart 2.6

Diverse employment evolution of jobs in 2020 depending on their level of teleworkability, social interaction, and on whether they are critical or not

Employment change in Q2, Q4 and annual 2020 (compared to the same quarter in 2019) by occupational category, EU26



Note: Critical occupations are identified based on the categorisation provided by the Commission Communication on Guidelines concerning the exercise of the free movement of workers during COVID-19 outbreak. Data refer to the age group 20-64. Armed forces are not taken into account in the analysis. An absence from work is classified as a 'temporary lay-off' if it is due to slack work for technical or economic reasons.

Source: Calculations by the European Commission's Joint Research Centre, based on a Eurostat special extraction on EU-LFS data and on indexes produced in Sostero et al. (2020).

Click here to download chart.

Similarly, among teleworkable jobs with high social interaction only critical occupations experienced a positive employment growth rate (yellow bars, second from the right in *Chart 2.6*). These are jobs that can be defined as teleworkable from a technical point of view, but that suffer a loss in quality if performed remotely, due to the high social interaction required. This category includes mainly teaching professionals.

Non-teleworkable occupations – with both high and low levels of required social interaction – experienced instead a decline in employment (blue and green bars, left and second from left respectively in *Chart 2.6*), with a negative percentage change in both quarters and at annual level, and for both subcategories of critical and non-critical occupations. These indeed represent occupations that cannot be performed remotely. For critical occupations, the decline was less pronounced, especially for the first category.

Among non-teleworkable occupations that require high social interaction, critical ones showed a much smaller employment decrease than non-critical ones (blue bars, left, in *Chart 2.6*). Critical occupations in this group include among others, health professionals and associate professionals such as doctors and nurses, personal care workers, childcare workers. While personal care workers (which include childcare workers and teachers' aides, and personal care workers in health services) saw a decrease in employment of around 3.4% in 2020, health professionals overall saw an increase in employment of around 1%. These workers were at the frontline during the pandemic given that they performed essential activities that could not be done remotely and require high level of social interaction, thus exposing them to a higher risk of contagion than the average worker. Among non-critical occupations, the employment drop was stronger, with sales workers registering a decrease of nearly 3 % between 2019 and 2020, and waiters and bartenders decreasing by 16 %.

Non-teleworkable, non-critical occupations are not only the ones with the sharpest drop in employment, but also those with the highest incidence of absences from work due to temporary lay-offs (*Table A1.1 in Annex 1*). In particular, non-critical, non-teleworkable jobs requiring high levels of social interaction registered more than 19 % of this kind of absence in the second quarter of 2020, and an average annual value throughout 2020 of 7.7 %. Overall, individuals in non-critical occupations were twice as likely to be absent from work due to temporary lay-offs than those in critical occupations.

Overall, the strongest protection against job losses during the lockdown was teleworkability. Job losses concentrated on non-critical jobs, especially those that are not teleworkable and require high social interaction. Among critical occupations, teleworkable jobs have even increased, especially those requiring limited social interaction.

Box 2.2: Methodology of the multinomial logistic regressions

The analysis is based on a multinomial logistic regression, which allows predicting a nominal dependent variable with more than two categories, given one or more independent variables. This type of regression can be used, for instance, to estimate the relationships between individual choices or categorical placement, and independent variables, which serve as predictor variables.

In this case, the dependent variable is the occupation group consisting of the eight alternative categories defined by teleworkability level and critical occupations and described above. The independent variables include both individual socio-demographic and job characteristics. The individual socio-demographic characteristics are the following: gender (woman or man), age (classes 20-34, 35-54, and 55-64), country of origin (native, born in EU, born outside EU), and level of education (low, medium, and high). The job characteristics consist of contractual arrangements (employee with temporary contract, employee with permanent contract and self-employed) and working time arrangements (part-time and full-time). For each variable, one class is used as baseline that is as reference point to calculate the probability. Among the classes listed above, the underlined ones are those used as baseline, and hence not appearing in the list of characteristics in the charts.

The model allows to calculate the ratio of the probability - that is the relative risk or odds - of being in one category of the dependent variable over the probability of choosing another category. Based on the ratios, one can also estimate the predicted probability - that is the marginal effect - of being in each category of the dependent variable at each class of a given independent variable, holding all other independent variables in the model at their means. In the charts, marginal effects are shown. They represent the average change in the probability of being in each occupation category, associated to each class of socio-demographic and job characteristics, with respect to the baseline, omitted, class. For example, since males are the baseline class of the gender variable, the marginal effect represents the average change in the probability of being in each occupation category, for females with respect to males. All estimated marginal effects are statistically significant. Country fixed effects are also included in the model but not shown.

Multinomial logistic regression shows large differences in socio-demographic and occupational characteristics of workers belonging to the eight categories. Regarding critical workers, the characteristics associated with a higher probability of being in low-skilled ([121]) critical occupations ([122]) are identified as the following (orange dots in *Chart 2.7*): women (compared with men), migrant from the EU and outside the EU (compared with native), low and, – to a lesser extent – medium level of educational attainment (compared with higher education), being employed on a temporary contractual basis (compared with permanent workers), and part-time work (compared with full-time work). For example, low educated workers are approximately 42 percentage points more likely to work in a low skilled critical occupation, while medium educated workers are approximately 18 percentage points more likely to work in a low skilled critical occupation than those with higher education. The characteristics associated with a higher probability of being in medium-skilled critical occupations are (light blue dots in *Chart 2.7*): being male, having low and medium educational attainment in equal measure, and being self-employed. Finally, the characteristics that predict a higher probability of being in high-skilled critical occupations (green dots in *Chart 2.7*) are being native, highly educated and an employee with a permanent contract.

Hence, the probability of working at each skill level of critical occupations seems to be driven by education level, contractual conditions, country of birth and gender. Low-and medium-educated critical workers are more likely to be employed in low- and medium-skilled occupations. Migrants are more likely to work in low-skilled occupations than natives. Finally, women in critical occupations are more likely than men to work in low- and high-skilled ones.

([121]) The skill levels of the occupations are defined as follows. High-skilled occupations include ISCO 1-digit occupations at skill levels 3 and 4, i.e. 1 Managers; 2 Professionals; 3 Technicians and associate professionals. Medium-skilled occupations include jobs at skill level 2, that is 4 Clerical support workers; 5 Service and sales workers; 6 Skilled agricultural, forestry and fishery workers; 7 Craft and related trades workers; 8 Plant and machine operators, and assemblers. Low-skilled occupations are those at skill level 1, i.e. 9 Elementary occupations.

([122]) As a reference, low-skilled critical occupations are for example elementary occupations, while examples of those in high-skilled critical occupations are doctors.

Chart 2.7

Education level, contractual conditions, country of birth and gender drive the probability of working at each skill level of critical occupations

Socio-demographic and occupational characteristics of critical workers by skill level of the occupation, 2019, EU27

Note: Critical occupations are identified based on the categorisation provided by the Commission Communication on Guidelines concerning the exercise of the free movement of workers during COVID-19 outbreak. Data refer to the age group 20-64. Armed forces are not taken into account in the analysis. The skill levels of the occupations are defined as follows: High-skilled occupations include ISCO 1-digit occupations at skill levels 3 and 4, i.e. 1 Managers; 2 Professionals; 3 Technicians and associate professionals. Medium-skilled occupations include jobs at skill level 2, that is 4 Clerical support workers; 5 Service and sales workers; 6 Skilled agricultural, forestry and fishery workers; 7 Craft and related trades workers; 8 Plant and machine operators, and assemblers. Low-skilled occupations are those at skill level 1, i.e. 9 Elementary occupations.

Source: Calculations by the European Commission's Joint Research Centre, based on elaborations on 2019 EU-LFS microdata and on indexes produced in Sostero et al. (2020). The coefficients of the various classes of socio-demographic and occupational characteristics are estimated by a multinomial logit model (the baseline class being men, aged 35-54, native-born, with high level of education, working as full-time employee with a permanent contract) They represent the marginal effect, i.e. the average change in the probability of being at each skill level of critical occupations, associated to that class. For example, women are approximately 5 percentage points more likely than men to be in a low skilled critical occupation, and 9 percentage points less likely than men to be in a medium skilled one.

Click here to download chart.

An analysis of socio-demographic and occupational characteristics reveals that gender and education are the characteristics with the highest dispersion (*Chart 2.8*). The most distinct patterns are as follows:

For non-critical occupations:

– Characteristics associated with a higher probability of being in the 'Not teleworkable, high social interaction' category are being a woman, aged 20-34, self-employed and having a low and medium level of educational attainment. For example, self-employed workers are approximately 12 percentage points more likely than employees to be in non-critical occupations of this category. For employees on temporary contracts, no relevant difference can be observed compared to those with open-ended contracts.

– Characteristics associated with a higher probability of being in the 'Not teleworkable, low social interaction' category are being male, having a low and medium level of education, and a full-time job.

– Characteristics associated with a higher probability of being in the 'Teleworkable, high social interaction' category are being native and having a high level of education.

– Characteristics associated with a higher probability of being in the 'Teleworkable, low social interaction' category are being a man, native, and having a high level of education.

For critical occupations:

– Characteristics associated with a higher probability of being in the 'Not teleworkable, low social interaction' category are being male and/or a migrant, having a low and medium level of education, and – to a lesser extent – being on a temporary contract.

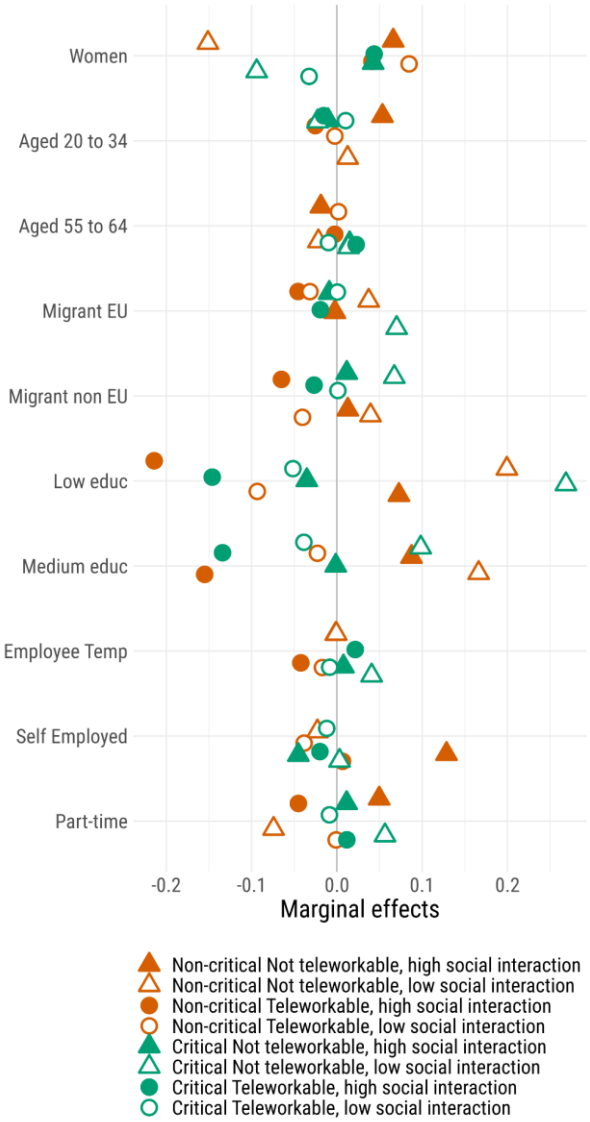
– Characteristics associated with a higher probability of being in the 'Teleworkable, high social interaction' category is: having a high level of education.

– **Overall, the level of education, country of birth and gender are the most relevant characteristics for predicting who is more or less likely to be in a teleworkable occupation.** Age and contractual conditions do not seem to play a major role. This is particularly true for non-critical occupations, which were the worst affected by a decline in employment in Q2 of 2020 compared with Q2 of 2019. Women are less likely than men to work in non-teleworkable occupations requiring low social interaction, which were severely affected during the pandemic. Non-native as well as low- and medium-educated workers, on the other hand, are more likely to be employed in these occupational groups. Low- and medium-educated workers are less likely to work in critical teleworkable jobs, which were the only ones that displayed growth between 2019 and 2020.

Chart 2.8

Gender and education are the characteristics with the highest dispersion among the eight occupational groups

Socio-demographic and occupational characteristics of individuals employed by category and critical versus non-critical occupations, 2019, EU27



Note: Critical occupations are provided by the Commission Communication on Guidelines concerning the exercise of the free movement of workers during COVID-19 outbreak. Data refer to the age group 20-64. Armed forces are not taken into account in the analysis.

Source: Calculations by the European Commission's Joint Research Centre, based on elaborations on 2019 EU-LFS microdata and on indexes produced in Sostero et al. (2020). The coefficients of the various classes of socio-demographic and occupational characteristics are estimated by a multinomial probit model (the baseline class being men, aged 35-54, native-born, with high level of education, working as full-time employee with a permanent contract). They represent the marginal effect, i.e. the average change in the probability of being at each skill level of critical occupations, associated to that class. For example, women are approximately 15 percentage points less likely than men to be in non-critical occupations of the category 'Not teleworkable, low social interaction', and 9 percentage points more likely than men to in non-critical occupations of the same category.

Click here to download chart.

Box 2.3: The impact of the COVID-19 crisis on the German labour market – national evidence

Whereas the preceding analyses do not include data for Germany, several national analyses point towards patterns that are largely consistent with the findings based on the EU Labour Force Survey.

• In Spring 2020, just under 20% of the working population in Germany were working reduced hours (on "short-time work") and some 35% were working partially or completely from home. ([1])

• Workers with higher incomes and a higher level of education were more likely to use the opportunity to work from home, whereas those with a lower level of education were more likely to be on short-time work. ([2])

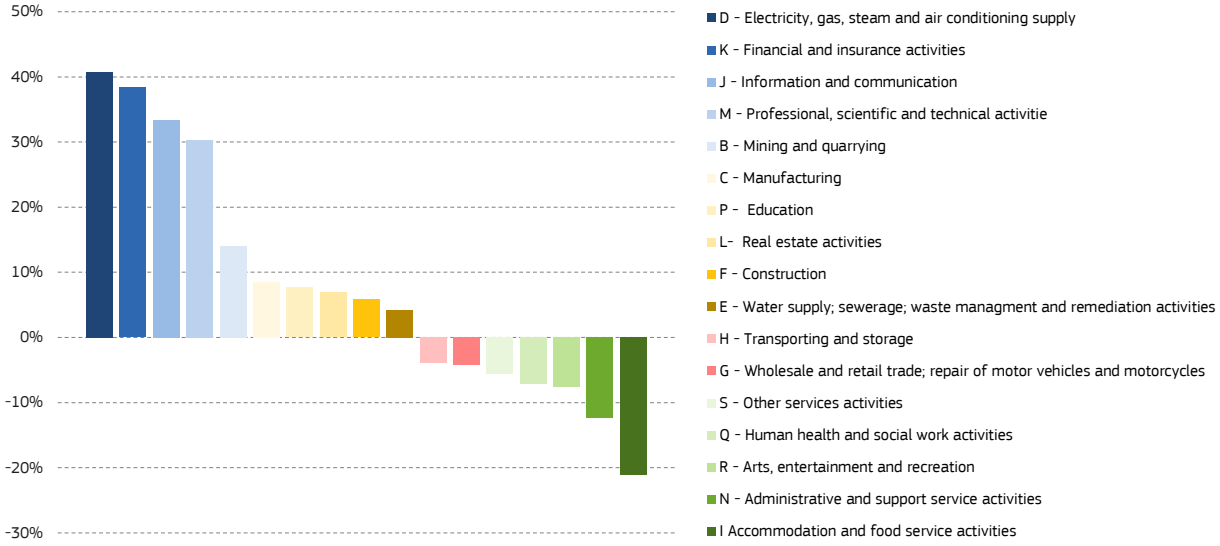
• Sectors with a high share of workers on 'Minijobs', such as catering and the event industry, have been strongly affected by job losses related to the COVID-19 crisis. In June 2020, there were 85 000 or 12% fewer such workers compared to one year earlier. This reduction since the crisis contrasts with the strong expansion of Minijobs between 2003 and 2019. ([3])

([1]) Schröder et al. (2020).
([2]) Möhring et al. (2021), Schröder et al. (2020).
([3]) Grabke et al. (2020)

Chart 2.9

Some of the low-paid sectors, such as 'accommodation and food service activities', have been among the most hit by the COVID-19

Wage gaps compared to median wage at NACE 1-digit level, EU, 2019



Note: Monthly wages in full-time equivalents are used to compute wage gaps. 2014 data have been uprated to 2019 by using the labour cost index by NACE (lc_lci_r2_a). Sectoral wage gaps are calculated as the difference between the sectoral median wage and the overall median wage, divided by the latter

Source: Calculations by the European Commission's DG Employment, Social Affairs & Inclusion based on Eurostat estimations of sectoral median wages on 2014 Structure of Earnings Survey data.

Click here to download chart.

4. AN ANALYSIS OF WAGES IN THE MOST AFFECTED SECTORS AND OCCUPATIONS IN THE LIGHT OF COVID-19

Low-paid sectors have been among those most hit by the COVID-19 shock. For instance, workers in the 'accommodation and food service activities' (which include hotels, restaurants, beverage service activities and event catering) used to earn a median wage 21 % below the EU27 median wage even before the pandemic (*Chart 2.9*). Lower wages compared to the median are also found in the 'arts, entertainment and recreation' sector (negative wage gap of 8 %) which has also been strongly impacted by the containment restrictions imposed across the EU. This evidence is based on pre-COVID-19 data (2019). Given the liquidity constraints that many firms in these sectors have been facing since the start of the pandemic, the negative wage gaps are likely to remain at the same level and even exacerbate.

Among low-paid activities, some played a crucial role in the management of the COVID-19 pandemic. For instance, 'human health and social work activities', which is a sector composed of critical workers by 74 %, is also characterised by a wage that is 7 % below the median wage ([123]). Similarly, 'transport and storage' a sector that was considered essential to deliver basic goods and was, in some areas, kept open and running as usual despite difficulties (e.g. postal and courier activities, land transport and transport via pipelines) and in other areas suffered a strong reduction in demand (e.g. air transport). Its 2019 wages are approximately 4 % below the median.

By contrast, some activities that showed resilience during the COVID-19 pandemic are characterised by wage premia. This is the case for 'electricity, gas, steam and air conditioning supply' a sector that leads in terms of high wages, with a positive wage gap of 41 %, also due to the high level of skills required. Likewise, 'financial and insurance activities' and 'information and communication' have a wage premium of 38 % and 33 % respectively.

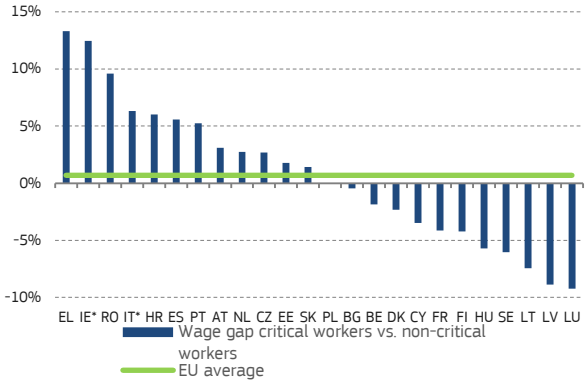
Given the highly diverse composition of critical workers, assessing the wage gap between critical and non-critical workers is not straightforward. *Chart 2.10* shows that for the EU average critical workers have a median hourly wage almost equal to the median hourly wage of non-critical workers (with non-critical workers earning 0.1 % less on average). Nevertheless, in some Member States such as Greece, Romania, Croatia, Spain and Portugal, critical workers earn a significantly higher median hourly wage compared with those in non-critical occupations. The opposite situation is true in Luxembourg, Latvia, Lithuania, Sweden and Hungary.

([123]) The 'human health and social work activities' (sector Q according to NACE 1-digit definition) comprises 42 % health professionals and associate health professionals (which is an important ISCO 2-digit category among the group key workers). Personal care workers (another ISCO 2-digit category included among key workers) account for 21 % of all employees in this sector. Overall, all categories of 'key workers' represent 74 % of the workforce in 'human health and social work activities'.

Chart 2.10

Wage gaps of critical workers are very different across Member States and at EU level they are almost equal to the median hourly wage of non-critical workers

Wage gap of critical workers (compared with non-critical workers), 2019



Note: Median hourly wages are used to compute the wage gap. The wage information in EU-SILC is available at annual level. Hourly wages are calculated as annual wages divided by annual hours worked. Annual gross wages are available in the survey (variable PY010G), while annual hours worked are derived as total weeks worked per year (variables PL073 and PL074) multiplied by total hours worked per week (variable PL060). Data for DE, MT and SI are not available at ISCO 2-digit level, therefore no information is available for these Member States. Data for IT and IE refer to 2018.

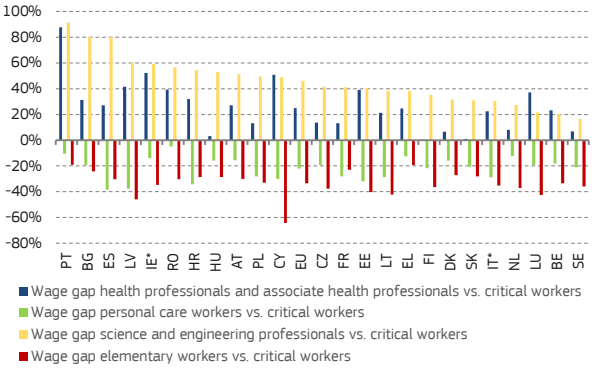
Source: Calculations by the European Commission's DG Employment, Social Affairs & Inclusion based on EU-SILC 2019 and 2018 users' database.

Click here to download chart.

Chart 2.11

Among critical workers, some are low-paid (e.g. elementary workers) and others are highly paid (e.g. engineering professionals)

Wage gap for selected categories (ISCO 2-digit) of critical workers compared to all critical workers, 2019



Note: Median hourly wages are used to compute the wage gap. The wage information in EU-SILC is available at annual level. Hourly wages are calculated as annual wages divided by annual hours worked. Annual gross wages are available in the survey (variable PY010G), while annual hours worked are derived as total weeks worked per year (variables PL073 and PL074) multiplied by total hours worked per week (variable PL060). Data for DE, MT and SI are not available at ISCO 2-digit level, therefore no information is available for these Member States. Data for IT and IE refer to 2018.

Source: Calculations by the European Commission's DG Employment, Social Affairs & Inclusion based on EU-SILC 2019 and 2018 users' database.

Click here to download chart.

Within the group of critical workers, there are very low-paid workers and higher-paid ones. Workers in elementary occupations (such as cleaners and helpers) and those in personal care (like childcare workers and teachers and personal care workers in health services) earn respectively 34 % and 22 % less than the rest of critical workers at EU level (*Chart 2.11*). On the other hand, science and engineering professionals and workers in healthcare occupations have wage premia of 46 % and 25 %, respectively, compared to all critical workers at the EU level. In some Member States, the wage disparities among critical workers are much higher than the EU average. In Portugal, for example, science and engineering professionals earn 91 % more than the median hourly wage of all key workers together, and personal care workers have a wage premium of 88 %. Wage premia are also above 60 % for science and engineering professionals in Bulgaria and Spain, while in Cyprus elementary workers have wages more than 60 % below the median ([124]).

([124]) European Commission (2020) presents an interesting and complementary analysis classifying occupations by their physical proximity, ability to telework and pay.

Box 2.4: Methodology for the EUROMOD simulations

The simulations based on EUROMOD ([1]), employ aggregate labour statistics on the share of workers experiencing transitions to either unemployment or monetary compensation ([2]) schemes to mimic the labour market conditions of 2020 in the underlying EU-SILC 2018 data. ([3])

The simulation compares two alternative versions of the 2020 income distribution; one in which labour market transitions to unemployment and/or temporary lay-offs did not occur and one in which they occurred and monetary compensation schemes were implemented (and are therefore simulated using EUROMOD). Holding policies constant, this comparison allows to focus on the extent to which 2020 policies protected the incomes of the households that underwent these labour market changes.

First, the simulation compares market incomes and disposable incomes of the "baseline" (2020 tax benefit systems without labour market changes) to the "shock" (2020 tax benefit systems with labour market changes). Second, the Income Stabilisation Coefficient (ISC) is calculated, in the spirit of Dolls et al. (2012). ([4])

$$ISC=1-(\sum \Delta Y^D)/(\sum \Delta Y^M))$$

Where $\sum \Delta Y^D$ indicates the aggregate (country level) difference in disposable income and $\sum \Delta Y^M$ indicates the aggregate difference in market incomes. ([5])

The Income Stabilisation Coefficient (ISC) indicates the share of a shock that is absorbed by the tax-benefit system. An ISC=100 indicates no change in disposable income despite a change in market income. An ISC=0 indicates that disposable income changed exactly as much as the market income, hence the shock is fully transmitted to disposable income without any absorption. In addition, the ISC can be disaggregated to study the stabilising properties of various tax-benefit instruments, namely taxes and social insurance contributions, monetary compensation schemes, unemployment benefits, other benefits and pensions. Moreover, disposable income in the "shock" distribution can be analysed in further detail to assess the role that each tax-benefit component plays in the formation of the household disposable income in the aftermath of the pandemic. ([6]) Finally, the simulations provide at-risk-of-poverty rate estimates (both those fixing poverty lines to their "baseline" values; and those with a "floating" poverty line based on the newly simulated income distribution) and Gini coefficients of income inequality.

A number of caveats should be kept in mind when interpreting these modelling outcomes. First, in most of the countries, the statistics used to simulate transitions into monetary compensation schemes refer to the first three quarters of 2020 (two quarters for self-employed workers), although data might cover different time-periods in some countries. Second, the level of disaggregation of these statistics differs across countries, implying that the granularity of the simulation of labour transitions related to the pandemic may vary across countries. ([7]) Third, the simulations randomly identify workers within socio-demographic groups to undergo labour market transitions. This adds uncertainty to the distributional findings of the model, especially in the case of transitions to unemployment, since the relevant statistics are only available with a high level of aggregation. Ideally, this issue would be alleviated by basing the identification of observations transiting into unemployment (or monetary compensation schemes) on characteristics highly correlated with household income. Finally, a problem of over-simulation of monetary compensation amounts might arise because of the interaction between EU-SILC data and country-specific rules simulated in EUROMOD. For instance, in cases where a minimum monetary compensation amount is determined by law and is based on the minimum wage, this could lead to over-simulating the compensation for individuals that in EU-SILC are observed to earn less than the minimum wage. Furthermore, the simulations may not be able to fully account for lower social protection coverage of certain categories of non-standard workers, thereby overestimating monetary compensation received by these workers. Finally, the model does not take into account the redistributive impact of in-kind benefits, including healthcare. ([8])

([1]) EUROMOD is maintained and updated by the JRC in collaboration with EUROSTAT. This analysis is based on tax-benefit rules in place in 2020. Since the underlying data refer to 2017 incomes, monetary values of non-simulated tax and benefit instruments are uprated to the relevant years, making use of specific uprating factors. In addition, the microdata have been adjusted to account for the significant changes in the labour market conditions that occurred during 2020 because of the COVID-19 pandemic.

([2]) These schemes mainly include job retention schemes for employees, including short-time work, and monetary support for the self-employed.

([3]) Labour market transitions are modelled using two main sources of data: administrative data collected by EUROMOD national teams and developers, and data provided by Eurostat.

([4]) Dolls, M., Fuest, C., & Peichl, A. (2012). Automatic stabilizers and economic crisis: US vs. Europe. Journal of Public Economics, 96(3-4), 279-294.

([5]) The coefficient is reported in percentage terms (ISC*100).

([6]) All these indicators are provided for the entire population and by income quintile, fixing the quintile to which each household belongs to the "baseline" value (2020 without labour market changes).

([7]) See Christl et al. (2021) for more details.

([8]) See Expert Group on Health System Performance Assessment (2021) which explores the possible scenario of including the analysis of the redistributive impact of in-kind health benefits in EUROMOD.

5. THE CUSHIONING EFFECT OF TAX-BENEFIT SYSTEMS IN THE COVID-19 PANDEMIC

Regarding the socio-economic impact of the pandemic, European welfare states have played an important role in stabilising incomes. The policy effects include both those operating through the pre-existing tax-benefit systems and discretionary measures introduced by governments to address the exceptional socio-economic situation. The next section provides simulations of this stabilising effect, including the distributive impact ([125]). As such, it provides further detail compared to data presented in Chapter 1, notably in disaggregating the effect of different taxes and benefits on different parts of the income distribution, following the pandemic. The approach differs from the flash estimates presented in Chapter 1. Whereas the flash estimates aim at establishing expected trends between 2019 and 2020, the analysis presented in this section focuses on identifying the effects of the COVID-19 related shock in 2020.

Across Member States, households have faced major losses in market incomes during the pandemic ([126]). The market income reduction simulated across the EU amounted to 5.1 %. While all Member States experienced declines, these ranged from 20 % in Ireland to 1 % in the Netherlands (*Chart A2.1 in Annex 2*).

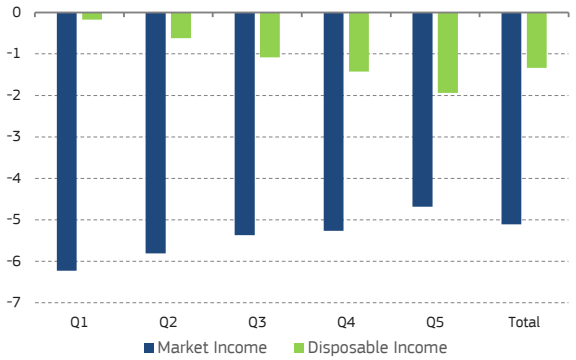
In general, the EUROMOD simulations suggest that low-income groups have faced relatively larger losses in market income. The reduction in market income generally shows a regressive pattern, with larger earning losses in the lower part of the income distribution than in the upper part. This is shown for the EU aggregate in *Chart 2.12*. The regressive pattern is less clear-cut in several Member States where total income reductions are relatively mild compared to the EU average (such as the Netherlands, Bulgaria, and Romania), but also in Greece, Croatia and Portugal, where the total income reduction is more severe than the EU average (*Chart A2.1 in Annex 2).*

Tax-benefit systems have protected households from disposable income losses during the pandemic, albeit to a different extent across Member States. The simulations suggest that the tax-benefit systems absorbed nearly three quarters (73.7 %) of the market income shock on average in the EU. At national level, the effect ranges from 46 % in the Netherlands (where more than half of the – comparatively minor – labour market shock was transmitted to disposable household incomes) to 93 % in Denmark (where the tax-benefit system provided nearly full protection to disposable household incomes from the shock).

Chart 2.12

Lower-income households faced the largest losses in market income, but relatively smaller losses in disposable income

Change in market and disposable incomes by income quintile (%)



Note: Quintile points are fixed to their baseline level.

Source: Calculations by the European Commission's Joint Research Centre using EUROMOD I3.0+, see Christl et. al (2021).

Click here to download chart.

Monetary compensation schemes played the main role in stabilising incomes, followed by reductions in taxes and social insurance contributions. Monetary compensation schemes absorbed the largest share of the market income shock (35.2 %). Reductions in taxes and social insurance contributions absorbed a further 28.3 %. The stabilisation provided by unemployment benefits is significant but smaller than that of monetary compensation schemes ([127]). This is in line with the smaller number of transitions from work to unemployment compared to transitions from work into monetary compensation schemes. Other benefits and pensions play a relatively minor role according to the simulations (see *Chart 2.13*).

Monetary compensation schemes play a larger role in protecting low incomes, whereas reductions in taxes and social insurance contributions mainly stabilise higher incomes. This pattern is due to benefit ceilings or lump sum components in monetary compensation received, as well as progressivity in the tax system. The role of 'other benefits' is larger at the bottom of the income distribution because of means-tested benefits, which are by definition targeted at low income households.

Overall, tax-benefit systems have stabilised the incomes of poorer households more than those of richer ones. The decomposition of the income stabilisation coefficient (ISC) by income quintile

([125]) This section is extracted from Christl, M, De Poli, S., Figari, F., Hufkens, T., Leventi, C., Papini, A.and Tumino, A. (2021) 'The cushioning effect of fiscal policy in the EU during the COVID-19 pandemic' JRC Working Papers on Taxation and Structural Reforms 2-2021. See the paper for details on the methodology employed and detailed results by Member States.

([126]) See Chapter 1 for analyses based on national accounts and ad-hoc surveys.

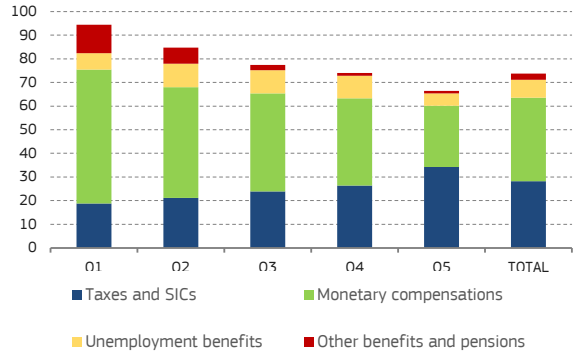
([127]) This is due to the effect of the job retention schemes. Short time working schemes need to be accompanied by income transfers (to avoid large declines in incomes).

confirms this. In several Member States ([128]), the ISC for households at the bottom of the income distribution exceeds 100 %, indicating a certain degree of overcompensation for the market income loss. This is driven by generous monetary compensation schemes (often with lump-sum components) which are in some cases exempt from social insurance contributions and/or personal income taxes or are not taken into account in the means testing of benefits.

Chart 2.13

Taxes and benefits played an important role in stabilising incomes, particularly at the bottom of the distribution

Income Stabilisation Coefficient by income quintile (%)



Note: Quintile points are fixed to their baseline level. 'SICs' refer to social insurance contributions.

Source: Calculations by the European Commission's Joint Research Centre using EUROMOD I3.0+, see Christl et. al (2021).

Click here to download chart.

Inequality in disposable income appears to have remained broadly stable during the pandemic, or even slightly decreased. The simulated Gini coefficients on disposable income decreased in most Member States. They remained stable in seven Member States (Austria, Bulgaria, Cyprus, Denmark, Finland, Germany, Slovakia and Sweden). Hungary is the only Member State where the simulations point to a slight increase in income inequality (*Chart A2.2 in Annex 2*) .

The simulated at-risk-of-poverty rates remain broadly stable or decrease slightly in the majority of Member States, partially in light of the decline of poverty lines ([129]). The simulated income at-risk-of-poverty rate for the EU decreases from 16.3 % to 15.9 %. Changes in AROP rates range from +0.2 pp in Latvia to -3.5 pp in Ireland. Seventeen Member States record decreases, five Member maintain stable rates, while five see small increases in poverty risk. This effect is partly linked to the decline in the median income and mainly to the strong income compensation at the bottom of the distribution (*Chart A2.3 in Annex 2*).

At-risk-of-poverty rates increase when using poverty thresholds fixed to pre-crisis levels. Simulations using a fixed poverty line lead to income poverty increasing on average from 16.3 % to 16.6 % in the EU. Changes in AROP rates range from +2.1 pp in Ireland to -0.7 pp in France. Simulated AROP rates with a fixed poverty line decrease in two Member States remain stable in one and increases in 24 Member States. The increase mainly reflects the drop in income levels related to the shock, whilst retaining a poverty line that reflects pre-crisis standards (*Chart A2.3 in Annex 2*).

Overall, the simulations suggest that tax-benefit systems substantially alleviated or offset the regressive nature of the shock. In sum, the simulations show a significant drop in market incomes due to the pandemic, with poorer households hit the hardest. However, the tax-benefit systems of 2020, which included additional discretionary fiscal measures to protect household incomes during the COVID-19 crisis, have partially cushioned the income drops and contained the regressive effect of the losses. Monetary compensation schemes played a key role in cushioning the effect of the crisis. For most Member States there is no evidence of (substantial) changes in income inequality. The simulations show slight increases in AROP rates following the shock when using baseline poverty lines. There are small decreases in income poverty when using the updated income thresholds, i.e. poverty lines based on the income distribution after the shock. However, several caveats apply (*Box 2.4*). Even if the initial impact of the crisis has been contained by the tax and benefit systems, further increases in income inequality might materialise when exceptional income support will be wound down.

6. Disadvantaged groups

Given the impact of the crisis across many different socio-economic dimensions, changes in the income situation of households due to the shock do not inform on any non-monetary poverty or exclusion they may be facing under these exceptional circumstances. The next section widens the scope of analysis to such impacts.

Specific groups encountered difficulties that were not directly related to income or the labour market. For older people, health care and social isolation were major concerns. For segregated minorities such as Roma, the pandemic exacerbated exclusion from education and social services. The pandemic also highlighted and reinforced pre-existing gender inequalities, including unpaid work and informal care (see Chapter 1).

The next sections focus on the impact of the COVID-19 pandemic on specific vulnerable groups and notably on low-income households and non-EU-born migrants, people with disabilities, and the homeless. Without aiming at exhaustiveness, the sections discuss ways in which the pandemic has had a disproportionately higher negative impact on these groups, both in terms of the direct impact of the COVID-19 virus via

([128]) Slovenia, Romania, Malta, Lithuania, Hungary, Croatia and France. See Christl. at al. (2021).

([129]) Where the poverty lines are based on updated median income following the shock.

infection, illness or death and secondary effects linked to measures to contain the spread of the virus. Finally, this section surveys, where possible, the measures adopted to cushion the negative impact of the crisis on each of these specific groups as well as the lessons learnt for policy intervention in the future.

6.1. Low-income and poor households

While providing useful insights, the employment situation and income distribution do not give the full picture of the socio-economic impact of COVID-19. Many impacts of the crisis pertain to social aspects, including health, which cannot be captured by employment and income indicators. In the context of the pandemic and the mitigation measures, certain pre-existing inequalities in living conditions become more cumbersome, such as poor housing conditions or lack of digital access. Even if they did not suffer job loss or income reductions during the pandemic, low-income households often faced more difficulties on these fronts. Moreover, specific groups that have been strongly affected by the pandemic such as homeless persons or those living in institutions are not covered in income; living conditions and labour surveys.

Low-income and poor households were more likely to live – and have to confine in – overcrowded homes or poor housing conditions. In 2019, 27 % of the population at-risk-of-poverty lived in overcrowded housing, compared to 16 % in the overall population ([130]). Relatively more poor households live in homes with a leaking roof, damp walls, floors or foundation, or rot in window frames or floor. In 2019, these issues affected 20 % of the income-poor households in the EU, compared to 13 % of the total population. In both cases, there is a steep gradient by income quintiles (*Table 2.2*). For other housing conditions, such as noise or darkness, the income gradient is less steep, but still present. These issues become more problematic in a context of confinement, with much more time spent in a home that serves multiple functions, such as the place to telework (if tasks allow) or a classroom for children and pupils. Moreover, the risk of contagion is significantly higher in crowded housing.

Table 2.2

Households with lower incomes are more likely to experience housing issues

Housing issues by income quintile, EU25, 2019

	Q1	Q2	Q3	Q4	Q5
Overcrowding	26	17	14	12	8
Leaking roof, damp walls, floors or foundation, or rot in window frames or floor	20	14	12	9	7
Noise from neighbours or from the street	22	19	18	17	16
Too dark, not enough light	8	6	5	4	3

Note: Income quintiles based on national income distributions. Ireland and Italy not included.

Source: Calculations by the European Commission's DG Employment, Social Affairs & Inclusion based on EU-SILC 2019 users' database.

Click here to download table.

Poor and low-income adults had less access to the digital world, and hence fewer opportunities to overcome challenges of social distancing. Among EU adults in 2019, 15 % had no access to a personal internet connection at home, either via computer, tablet or smartphone. Among those at risk of poverty, this rate was substantially higher, 28 % There is a steep income gradient, as in the top income quintile, only 4 % lack such access ([131]). The reasons for the lack of access vary; they may be related to a lack of affordability (particularly for low-income groups), connectivity of the living area or personal preference. What is clear, however is that households that were not connected prior to the outbreak of the pandemic will have found it more difficult to adapt, including for telework, home schooling or the other services that relied on digital means.

Poor households' lack of private resources, including for transportation, may have posed additional challenges. During the pandemic, some households reduced their use of public transportation and preferred private cars instead, to lower the risk of infection. However, more than one third of income-poor households (35 %) do not have a private car, compared to 14 % among those that are not income-poor ([132]).

6.2. Migrants (mainly non-EU-born)

COVID-19 has so far hit migrant workers born outside the EU harder than native and EU mobile workers ([133]). This section reviews the health and labour market impacts of COVID-19 on migrants

([130]) These data refer to private households only, thereby do not inform on difficulties for persons living in institutions or other collective households where social distancing was a specific challenge.

([131]) Source: Calculations by the European Commission's DG Employment, Social Affairs & Inclusion based on EU-SILC 2019 users' database. EU weighted average, income quintiles based on national income distributions. Ireland and Italy not included.

([132]) Source: idem.

([133]) For the purposes of this chapter, the terms 'extra-EU-born' and 'non-EU(-born) migrants' are used synonymously to denote all persons born outside the borders of EU27, regardless of their legal migration status or nationality. 'Native-born' or 'natives' include all persons born in the reporting Member State, regardless of the country of birth of their parents or of their nationality. 'EU-mobile' denotes the people born in an EU Member State other than the reporting one. These categories correspond respectively to the Eurostat codes 'NEU27_2020_FOR,' NAT' and 'EU27_2020_FOR' in EU-LFS data sets.

through a literature survey and own calculations based on LFS (quarterly and annual) data.

6.2.1. Primary impacts: health

Weaker health, socio-economic conditions and occupations with physical contact have resulted in higher infection risk among migrant and EU-mobile workers. Although, on average, non-EU migrants and the EU-mobile are younger than the native-born population (ca. 8 % vs. 12 % of 75-year-olds in the EU), some may have a poorer health record than their native-born peers upon arrival at their destinations, due to poorer healthcare conditions in their home countries or difficult conditions during transit ([134]). In addition, migrants with irregular residency or irregular or temporary employment status and/or lacking proficiency in the language of the host country may be less inclined to seek healthcare treatment in general ([135]). In the context of COVID-19, they may also be inadequately informed to seek a test or timely hospitalization. More importantly, migrants, and in particular those born outside of the EU, are overrepresented among groups faced with socio-economic disadvantages and are therefore more likely to live in conditions that both affect their overall health negatively and increase the risk of COVID-19 infection ([136]). This is also true for mental health ([137]). Furthermore, migrants are more likely to experience relative poverty (almost a 10 pp differential with natives) and to live in substandard accommodation, overcrowded dwellings and in higher-density housing infrastructure and neighbourhoods ([138]). Beyond that, migrant and EU-mobile workers tend to be disproportionately concentrated in occupations that cannot be undertaken from home (e.g. through the use of ICT) and therefore in less safe occupations (i.e. occupations that expose them to a higher risk of contagion) than natives ([139]). In 2018, migrant and EU-mobile workers accounted for one quarter of all workers in the hospitality sector in the EU and for a fifth of all workers in security and cleaning services – sectors with primarily high-contact occupations ([140]). Events during the first COVID-19 lockdown in the EU provided examples of the often difficult and unsafe working conditions of migrant and EU-mobile workers, notably in the meat-processing industry ([141]).

The health impact of COVID-19 on migrants born outside the EU can be discerned with more certainty through mortality rates than through infection data. Many Member States' authorities do not inquire about country of birth or nationality information when registering COVID cases or any other disease. The few data and other sporadic information that became available during the pandemic usually show a significant over-representation of migrants in the incidence of COVID-19 ([142]). Concerning COVID mortality, some Member States, such as France, the Netherlands and Sweden, which have recent data by place of origin but not by cause of death, observed uneven excess mortality by country of birth. In France, between March and April 2020, excess mortality – the difference in mortality compared with the same period in 2019 – among non-EU-born was twice that of native-born. The migrant groups that were most affected by excess mortality compared with the same period in 2019 were from North Africa (+54 % deaths), sub-Saharan Africa (+114 % more deaths) and Asia (+91 % more deaths), compared with 22 % excess mortality for the native-born ([143]). Higher excess mortality for migrants was even observed among the youngest cohorts. Non-EU migrants' excess mortality remained twice to four times higher than that of the native-born population, even when taking into account that non-EU-born are more likely to live in densely-populated areas that were more affected by the pandemic. In Sweden, the share of the deceased born outside the EU, varied between 12 % and 14 % over the 2015-19 period, reaching 16 % in March-April 2020. The number of deaths among persons aged 40-

([134]) This is highly time- and country-specific as the countries of origin of migrants are very heterogeneous. Nonetheless, WHO (2019) generalizes a higher likelihood of migrants and refugees to be healthy upon arrival. Nonetheless, living with poor sanitation and contaminated water before or during the migratory journey increase the risk of infections while the prevalence of certain diseases such as tuberculosis in migrants and refugees is likely to reflect rates in the host country.

([135]) In national systems where welfare and healthcare entitlements depend on regular(ised) residency status in addition to job-linked contributions, migrants may have more limited access to healthcare in comparison to natives; see Avato et al. (2010) and Fasani and Mazza (2020c).

([136]) The negative effect on overall health refers to potential co-morbidities, i.e. diseases or medical conditions that are simultaneously present with another (in this case COVID-19) or others in a patient. The WHO Bureau for Europe (2018) found evidence of a higher risk of certain diseases among the refugee and migrant population in Europe (ischaemic heart disease and stroke, diabetes).

([137]) For evidence of an increase in mental health problems due to the disruption of legal proceedings as well as evidence of difficulties in providing mental health treatment to migrant non-accompanied minors in France during the pandemic, see the report by Medecins Sans Frontieres (2021).

([138]) OECD/European Union (2018). A study by the University of Bielefeld (2020) found that, compared with other forms of housing, collective housing for asylum seekers and refugees increased the risk of COVID-19 transmission in case of a first positive diagnosis by 17 %. See also Brun and Simon (2020).

([139]) See Basso et al. (2020), who calculate that the share of migrants able to telework is at least 5 percentage points below that of their native counterparts.

([140]) According to OECD (2020e), migrants account for more than half of all domestic services workers in Southern European countries, Israel and Canada.

([141]) Reid, Alison, et al. (2021). describe cases in meat processing in Germany, Ireland and Spain, working with subcontractors from Eastern Europe or (mostly undocumented) non-EU-born workers as well as agricultural workers in Germany, France, Italy and Spain, with limited workers' rights and no protection, living in cramped shared accommodation.

([142]) This was the case, for instance in Sweden, where 32 % of cases were migrants (who constitute 19 % of the population) as well as in Denmark, where migrants from lower-income countries and their native-born children account for 18 % of the infected – twice as many as their share of the Danish population. In the Lisbon Metropolitan Area, migrants account for 11 % of the population but for 24 % of COVID-19 infections by the third quarter of 2020. See OECD (2020f)

([143]) Papon and Robert-Bobée (2020).

years-and-over born in countries from which many refugees have migrated to Sweden in the last decades (Syria, Iraq and Somalia) was 220 % higher in March-May 2020 compared with the average in 2016-19. In contrast, the respective increase during these three months was only 18 % for those born in Sweden, the EU or North America, despite an older age composition ([144]). In the Netherlands, death statistics by parental place of birth for March and April 2020 show that deaths were 47 % higher than usual for migrants from lower-income countries and their children, 49 % higher for migrants from high-income countries and their descendants, and 38 % higher for native-born with Dutch parents ([145]).

6.2.2. Secondary impacts: labour markets

Several reasons make migrants (especially the extra-EU-born) particularly vulnerable to economic downturns. Firstly, newly arrived migrants tend to have lower seniority in their workplaces. In addition, as they often face linguistic and – in particular those born outside the EU – institutional barriers to access occupations, migrants are generally more likely to hold non-standard or informal contracts, shorter job tenures and to be employed in occupations below their skill level and educational credentials ('brain waste') than comparable natives ([146]). These disadvantages make migrants' employment status sensitive to cyclical fluctuations including severe economic downturns such as that triggered by COVID-19 ([147]). Secondly, their higher concentration in low-paying jobs (in proportion to native workers) results in relatively low earnings. Transfers abroad of a significant share of these earnings through remittances result in typically low savings held in their host countries, undercutting migrants' ability to sustain long periods of unemployment when shocks strike. While migrant workers usually can move flexibly between sectors in response to a shock, the broad impact of the COVID-19 crisis limits this possibility ([148]). In fact, limitations to migrants' mobility with a view to take up work opportunities elsewhere during the pandemic has been found to have a strong negative impact not only on migrant workers' income in the EU host countries, but also on livelihoods – and in some cases, even on the economies of their countries of origin, such as parts of Africa, which is projected to last well into 2021 ([149]).

Migrants tend to be over-represented in low-skilled jobs and among the 'key', 'frontline', or 'essential' workers. This category was defined by governments in the wake of the COVID-19 outbreak. On average, migrants hold over one in four low-skilled jobs in the EU. This figure rises to over 40 % in Austria, Germany and Sweden and over 60 % in Luxembourg. Migrants are over-represented in the lowest income decile in virtually all Member States. Forming a significant proportion of so-called 'essential' workers, non-EU migrant and EU mobile workers have contributed to maintaining critical systems since the start of the pandemic across the EU and elsewhere ([150]). On the one hand, the disproportionate representation of migrants among 'key' workers implies stronger protection from employment loss. On the other hand, research has shown that, within the 'key' worker category, migrants tend to have a disproportionately higher risk of losing their jobs than natives ([151]).

In the decade before the pandemic, the labour market outcomes of migrants born outside the EU were poorer relative to native and EU-mobile people. In most Member States, the pre-COVID-19 unemployment rates of non-EU migrants aged 15 to 74 lagged behind those of natives. In some Member States – most notably in the South – this gap had widened over the last decade (*Chart 2.14*) ([152]). Employment rates (in the 20-64 age bracket) exhibited a similar lag. Whereas in 2008 the EU employment rate of the non-EU born was 4.2 pp lower than that of natives, in 2019 the difference has widened to 9.5 pp. This stands in contrast to the employment rate evolution of the EU-mobile, the differential for whom narrowed in relation to natives in the same period. In 2008 the employment rate of the EU-mobile was 0.5 pp lower than natives' rates, whereas by 2019 their employment rate was 1.4 pp higher than that of natives (*Chart 2.14*) ([153]).

([144]) Hanssonet al. (2020).

([145]) Kunstet al. (2020).

([146]) Kerrand Kerr (2011) and De la Rica et al., (2015)

([147]) Dustmann et al.(2010). and Orreniusand Zavodny(2010).

([148]) Borjas and Cassidy (2020). For the global perspective, see ILO (2020a), and de Lange et al. (2020).

([149]) This risk is higher in economies with high dependency on remittances; for instance, that dependence amounts to roughly 35 % of GDP in South Sudan, 21 % in Lesotho, 16 % in Gambia, 14 % in Zimbabwe and over 10 % in a number of West African nations. See https://www.statista.com/statistics/962877/remittances-to-sub-saharan-africa-share-gdp-by-country/ as well as Naudé. (2010), andMigration Data Portal (2021).

([150]) Fasani and Mazza (2020c) and Reidet al. (2020).

([151]) Fasani and Mazza (2020b).

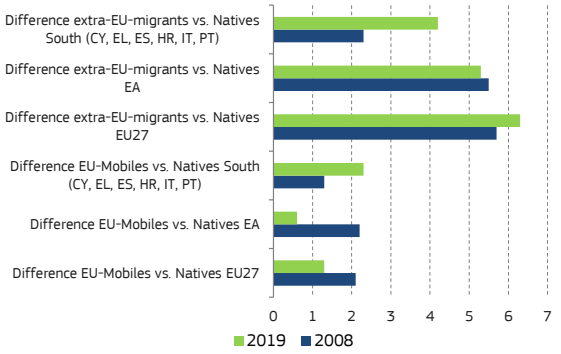
([152]) Source: Calculations by the European Commission's DG Employment, Social Affairs & Inclusion based on EU- Labour Force Survey data (lfsq_urgacob).

([153]) Source: Calculations by the European Commission's DG Employment, Social Affairs & Inclusion based on EU- Labour Force Survey data (lfsa_ergacob).

Chart 2.14

Even before the COVID-19 outbreak, migrants born outside the EU had had higher unemployment rates than both natives and the EU-mobile, a gap which has widened in the South since the crisis of 2008-9

Unemployment rate differentials between Natives, EU Mobile and Extra-EU-born, pp



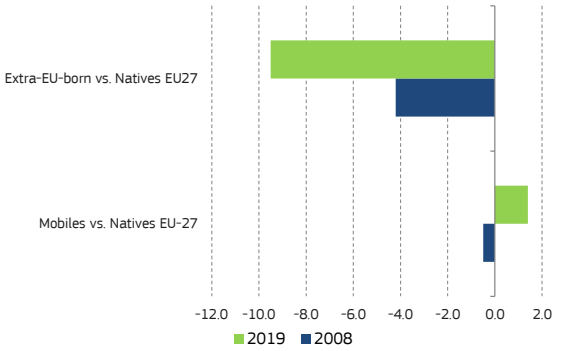
Source: Calculations by the European Commission's DG Employment, Social Affairs & Inclusion based on EU- Labour Force Survey data (lfsa_urgacob)

Click here to download chart.

Chart 2.15

Before the COVID-19 crisis, the employment gap between extra-EU migrants and natives had widened in the EU, in contrast to the performance of the EU-mobile

Employment rate differentials between Natives, EU Mobile and Extra-EU-born, pp



Source: Calculations by the European Commission's DG Employment, Social Affairs & Inclusion based on EU- Labour Force Survey data (lfsa_ergacob).

Click here to download chart.

Preliminary evidence shows the disproportionate toll of COVID-19 on the labour market outcomes of migrant and EU-mobile people in terms of rising unemployment and inactivity. This is suggested by self-reported impacts on access to work and income by migrants and refugees ([154]) as well as by EU-Labour Force Survey data.

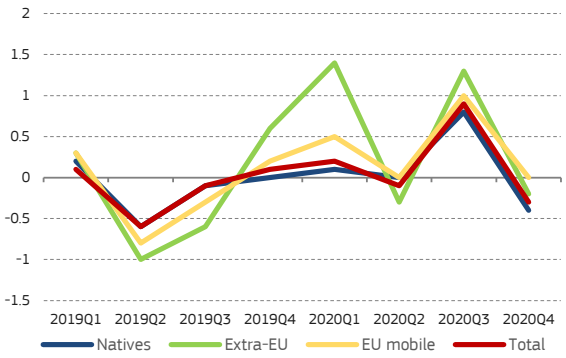
The rise in the unemployment rate of non-EU migrants is substantially higher than that of other groups. Data show a sharp rise in the unemployment rate for the total population as of the third quarter of 2020. While the increase in unemployment rates of natives (0.8 pp) tracks closely and is in fact somewhat lower than the change in the total unemployment rate (0.9 pp), the increase was slightly higher for EU mobile people (1 pp). The increase in the unemployment rate of extra-EU migrants stands out as substantially higher than that of other groups (1.3 pp). The unemployment rate of extra-EU migrants also shows in general a higher cyclical volatility than that of other population groups.

([154]) WHO (2020).

Chart 2.16

Rising unemployment due to the COVID-19 crisis takes a higher toll on extra-EU migrants

Unemployment rate by country of birth, EU27, difference in pp



Source: Calculations by the European Commission's DG Employment, Social Affairs & Inclusion based on EU- Labour Force Survey data (lfsq_urgacob).

Click here to download chart.

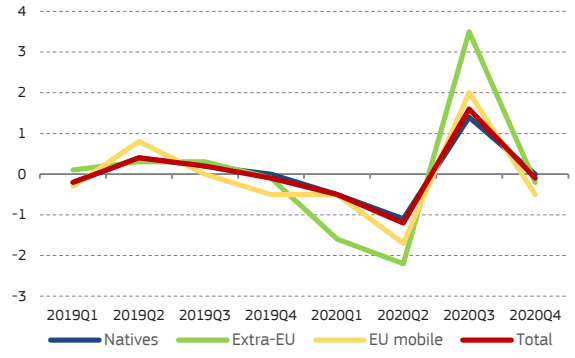
The activity rate of extra-EU migrants receded more than that of other population segments As discussed in Chapter 1, up to the end of the second quarter of 2020, a rise in inactivity – rather than unemployment – highlighted the distinct global nature of the COVID-19 crisis when compared with previous economic downturns ([155]). The case of non-EU migrants confirms this, too. Moreover, the decline in the activity rate in the second quarter of 2020 relative to the previous quarter was considerably more marked for non-EU migrants. The decrease in their activity rate (2.2 pp) was twice as high as that of the native population (1.1 pp). The activity rate of the EU mobile declined less (1.7 pp) than that of extra-EU-born migrants but more than that of the total population (1.2 pp). This depression of the activity rate was followed by a substantial recovery in the third quarter of 2020. The decline in activity in the fourth quarter of 2020 due to the renewed tightening of lockdown measures, albeit less pronounced than that of the second quarter, exhibited the same pattern in terms of the relative places of the native, EU mobile, extra-EU-born and general populations.

([155]) This is valid worldwide, too, as discussed in ILO (2020b) and ILO (2021).

Chart 2.17

The COVID-19 crisis affects the labour force participation of non-EU migrants more strongly than of other groups

Activity rate by country of birth, EU27, difference in pp



Source: Calculations by the European Commission's DG Employment, Social Affairs & Inclusion based on EU- Labour Force Survey data (lfsq_argacob)

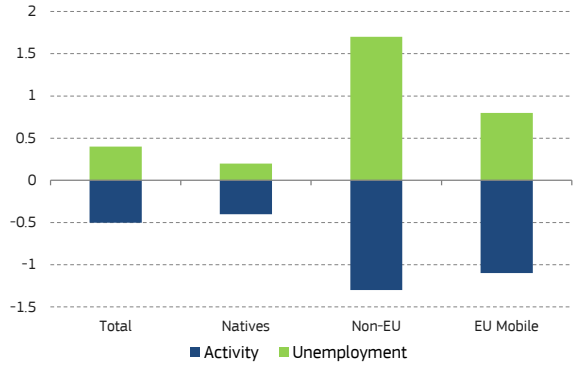
Click here to download chart.

The evolution of unemployment and labour force participation since the COVID outbreak suggests a higher impact on migrants. A comparison of the difference in the activity and unemployment rates of natives, the EU mobile and the non-EU migrants between 2019 and 2020 confirms that the impact on unemployment was mitigated through short-time work schemes and through the decline in activity rates. However, the comparison also reveals that extra-EU migrants were hit harder on both the unemployment and activity fronts than all other population groups (defined in terms of country of birth). Albeit smaller than that of non-EU migrants, this dual impact on the EU mobile population was also markedly higher than the one on natives or the population as a whole.

Chart 2.18

Extra-EU migrants hit harder than other population segments by the rising inactivity and unemployment brought about by COVID-19

Unemployment and inactivity by country of birth, difference in pp, 2019-2020.



Source: Calculations by the European Commission's DG Employment, Social Affairs & Inclusion based on EU- Labour Force Survey data (lfsa_argacob).

Click here to download chart.

6.2.3. *Secondary impacts: education and skills*

Disruption in education and training services due to the pandemic are likely have had more adverse effects on households of non-EU migrants. During the economic lockdowns, which were at least partly accompanied by school closures, the Member States' education systems applied remote learning solutions such as online teaching and computer-assisted learning ([156]). Migrants born outside the EU are at greater disadvantage in terms of their ability for online learning necessitated in certain school systems following the pandemic-induced lockdowns. The main reason for this are lower overall resources for e-connectivity (finance, devices, internet-connection service) of low-income households (among which extra-EU-born migrants are overrepresented). In turn, given the crucial importance of host-country language learning for the labour market integration of migrants, this connectivity disadvantage of migrant households may have repercussions that outlast the pandemic and the accompanying closure of learning facilities based on physical presence.

The impact of the COVID-19 crisis on education outcomes remains uncertain. However, a small number of studies point to a certain loss of cognitive skills in the short-term, commensurate with the duration of the suspension of in situ classes ([157]). There is still little evidence as to the impact on children of migrants in this respect. Moreover, it is still unclear to what extent the distribution of computers to pupils in need has counterbalanced the negative effect of online-based schooling on disadvantaged groups such as children of migrants. First evidence on the impact of the suspension of final examinations on children of migrants shows divergent influences. Research from the Netherlands, a country with tracking in school, suggests that the suspension of central examinations at the end of primary school as well as at the end of the secondary education may have increased the numbers of children with migrant background rather than native parentage who graduated due to the absence of a central examination ([158]). Conversely, the long-term impact of the interruption of teaching in-person may be greater than the potential short-term learning losses. The transmission channels of such negative long-term impacts on children of migrants are linked to the higher probability of their belonging to disadvantaged households in weaker socio-economic groups. These are lower overall educational aspirations, disengagement from the school system and potentially adverse effects on the social networking and psychosocial development of pupils. For instance, school disengagement by children of migrants following the pandemic was widely reported in France ([159]). Without targeted policies, interruptions to teaching in-person might therefore widen the gap between pupils of migrant parentage and their peers of native parents despite progress made in several countries prior to COVID-19 ([160]).

([156]) OECD (2020g).

([157]) This is the conclusion, for instance, of a study about schools in the Netherlands by Arenas et al. (2020).

([158]) Swartet al. (2020a and 2020b).

([159]) OECD (2020g) and Bude (2021).

([160]) OECD/European Union (2018).

6.2.4. Policy responses

Member States enacted measures to counteract the impacts of COVID-19 on migrants, starting with access to healthcare. Free emergency treatment regardless of status, was possible in principle before the outbreak in Belgium, Finland, France, Germany, Hungary, Luxembourg, Portugal and Spain, so it could be expanded to COVID-19 related measures (such as testing and emergency treatment) in some Member States. Portugal temporarily regularised migrants in irregular situation to ensure full access to the health care system. Similarly, Spain suspended the obligation to have valid documents in order to continue receiving aid covering basic needs. In Greece, access is available for minors, and for adult migrants in case of emergency. In Czechia, migrants in an irregular situation might have to reimburse their treatment later. A number of countries also launched specific information campaigns for migrants. Improving the COVID-19 vaccination uptake among migrants and other difficult-to-reach populations is a challenge as there is emerging evidence of low COVID-19 vaccination rates in some migrant and ethnic minority groups in the EU/EEA ([161]).

Member States have loosened conditions for residency status in the aftermath of COVID-19. Migrant workers who lose their jobs often struggle to comply with the conditions of their residency permits. In response, several Member States have extended permits or removed obligations to leave, to prevent legally staying migrants from falling into an irregular situation. Spain, Greece, Czechia and Germany, for example, did not withdraw permits for migrants who lost their job during the pandemic. Other countries including France, Slovenia, Estonia, Italy, Ireland, Poland, and Portugal automatically extended or renewed permits, in some cases until after the end of emergency, in other cases until a pre-defined date, or, as Austria did, loosened income requirements for the validity of certain work permits ([162]). In several Member States, changes introduced have allowed for overstay on a temporary visa, without any negative consequences for future visa applications ([163]).

Some Member States eased restrictions on migrants' work rights, facilitated recognition of qualifications and provided faster access to labour markets. The COVID-19 crisis has led some Member States to ease restrictions on work permits to a specific sector or employer ([164]). For instance, migrant workers who lost their job in Czechia could receive an authorisation to change employer and/or sector. In Finland, foreign workers with valid residence permit were allowed to change their employer or field of employment until October 2020. In other Member States, measures extended the work rights of certain migrant groups, such as students and asylum seekers. Asylum seekers in Belgium hosted by the employer were allowed to work immediately. Spain took the same measure in relation to young third-country nationals aged 18 to 21, Ireland, France and Belgium allowed international students to work more hours. To cope with the health emergency, Member States like Italy, Spain, Belgium, Germany, France, Ireland and Luxembourg, facilitated the recognition of qualifications of foreign health professionals already residing in the country and/or their recruitment in the national health services ([165]). In other sectors, such as agriculture and domestic care, migrant workers, including those with irregular status, became eligible for regularisation following the COVID outbreak. Targeted support measures for migrant entrepreneurs were implemented in Germany.

([161]) ECDC (2020).

([162]) EMN/OECD (2020b).

([163]) OECD (2020h) and EMN/OECD (2020a).

([164]) EMN/OECD (2020a). See also European Commission (2021a) for seasonal workers in agriculture.

6.3. Persons with disabilities

During the pandemic, persons with disabilities ([166]) have been exposed to particular challenges, both those related directly to the risk of contracting the virus and linked to confinement measures.

Certain disabilities entail a greater risk of contracting COVID-19 or experiencing worse outcomes if infected. In particular, those persons with physical disabilities related to medical conditions that affect the immune system, lung function or other related factors that can put them at higher risk for serious complications.

Persons with disabilities living in care homes and other institutional settings have faced high risks of transmission and infection. The highest rates of infections have been recorded in such institutional settings at least in the early stages of the pandemic ([167]).

Persons with disabilities face specific challenges related to hygiene measures to prevent COVID-19 infections. They may have limited access to hygiene facilities such as basins for hand washing. They have an increased need for physical contact with handrails in order to get around; or for close contact with carers, personal assistants or assistants in shops, transport settings and other facilities. This applies particularly where there is no or limited access to personal protective equipment or the protective equipment is not adequate. Some persons with disabilities were unable to comply with guidance about wearing facemasks (e.g. because of breathing

([165]) OECD (2020i).

([166]) Persons with disabilities are a heterogeneous group. The different nature and intensity of physical, mental intellectual or sensory impairments, and the existence of 'invisible disabilities' (physical and psychological conditions that are not immediately apparent) define a complex and heterogeneous group. Identifying the size and composition of people with disabilities depends on the definitions used and their application to a diverse population.

([167]) Comas-Herrera et al. (2020).

difficulties) or physical distancing (e.g. because systems depend on floor markings that are not accessible for persons with certain disabilities), thereby increasing the risk of contamination. Furthermore, persons with intellectual disabilities may have difficulties in understanding the care and hygiene information provided. Persons with sensory impairments may also face barriers to access the information if this is not made available adequately (e.g. sign language, 'Easy Read' format, braille versions etc.).

The COVID-related confinement measures have had a disproportionate indirect impact on persons with disabilities. This concerns areas of access to healthcare and support services, employment and working conditions, education but also access to information. This has been exacerbated by the limited accessibility of online solutions including teleconferencing systems and on line services for persons with disabilities.

The COVID-19 pandemic could imply further limitations in access to healthcare for persons with disabilities. The restrictions imposed to contain the spread of the virus had an impact on many health services, including rehabilitation. Postponement of treatment due to healthcare system saturation and fear of infection can have unfavourable long-term effects on the health status of the population, and particularly so for persons with disabilities or with chronic conditions. This can further exacerbate the existing inequalities whereas already in 2019 around 4.0 % of persons with disabilities in the EU 27 reported unmet needs for medical care due to costs, distance or waiting lists compared to 0.9 % for persons without disabilities. Further fears of discrimination including discriminatory criteria in general access to healthcare but also testing and vaccination have been voiced by certain NGOs. ([168]).

Confinement also resulted in limited access to other support services. Due to the COVID-related confinement of the staff or limitation of contacts, the provision of personal assistance, community support and assistive technology could be more limited. Among those regularly receiving home care before the pandemic, about 18.5 % declared that they faced more difficulties in getting the amount of home care needed between June and August 2020, mainly as carers could not come to their home ([169]).

Access to information about the virus and prevention is hampered if not delivered in accessible format, including online. This can particularly affect blind persons, deaf, hard of hearing and deaf-blind people but also persons with intellectual disabilities.

A prompt transition to online schooling can be particularly challenging for pupils and students with disabilities. Access to inclusive and quality education was limited for many persons with disabilities even before the pandemic. Online schooling has been introduced by most Member States at some point of the pandemic. Persons with disabilities are more likely to require additional support (personal, class assistant, interpreter) which is difficult to ensure in tele schooling. These factors combined can result in amplifying the existing inequalities in access to education of this group and represent an additional strain on parents of pupils and students with disabilities.

In the context of the pandemic, pre-existing limitations in access to employment are aggravated. Transitioning to teleworking was more challenging for persons with disabilities due to lack of appropriate equipment and connection as well as possible additional accommodations and support needed including due to limited accessibility of the systems. While telework might be a possibility for some, certain professions require on-site presence. Persons with disabilities might be less inclined to use public transport and rather resort to other means of safe and accessible transport to work. Such transport needs to ensure adequate accessibility and health standards.

6.3.1. Addressing uneven impacts on persons with disabilities: policy responses and pointers for further action

A number of services for disabled persons that were closed during the first wave of the pandemic reopened in autumn. These comprise of residential care, homecare, day care, respite care, work integration enterprises and other services ([170]).

Several Member States have adopted labour market measures targeted at persons with disabilities. In some Member States, the support provided was differentiated according to the type or intensity of the impairment (such as Portugal) or level of risk if infected based on the pre-existing health status. Job creation and retention measures comprised exceptional support to employers for recruitment of workers with a disability (e.g. France) sometimes coupled with vocational training and transitional support (e.g. Portugal). Poland, Malta and Slovenia increased wage subsidies aimed at employing or retaining workers who are at a higher risk of absence during the pandemic. Support for employee retention has also been introduced or reinforced in a number of Member States. These measures range from issuing guidance, providing paid absence from work (e.g. Denmark, Germany) or ensuring better protection at the workplace, including provision of additional accommodations (e.g. Lithuania, France) or job

([168]) European Disability Forum (2021).

([169]) Survey on Health Ageing and Retirement (SHARE) COVID-19 survey.

([170]) European Association of Service providers for Persons with Disabilities (2020).

reintegration after COVID-19 related short time work (e.g. Italy, Lombardy). In certain Member States subsidies for self-employed with a disability were made more accessible (e.g. Austria, Lithuania).

Several Member States introduced measures to facilitate travel to work for persons with disabilities. These ranged from promoting save public transport (e.g. the Netherlands), to travel allowances for people with disabilities for whom the use of public transport was discouraged (e.g. France).

Various Member States introduced initiatives to bridge the digital divide for people with disabilities. A number of initiatives facilitated training as well as participation in the labour market, through the ability to telework. Such a legislative measure was introduced in France, offering up to EUR 500 towards the capital expenditure necessary to continue their distance training programme (from March 2020 to February 2021) ([171]). Another exceptional measure, also in France, provided support to employers of a person with disabilities for whom teleworking is newly set up in the context of the pandemic and where activities would not resume on the premises for the duration of the pandemic. It covers the cost of computer equipment, office chair, transport costs, internet connection, etc. ([172]). The updates to the state of emergency imposed in Portugal included a special provision for workers with disability or impairment from September 2020 making telework mandatory when requested by workers and listing those with specific health conditions and disability as a priority group ([173]). Similar measures were enacted in Greece where initiatives were also taken by enterprises and organizations to support their workforce with disabilities. These range from re-orienting the economic activity, digital and other equipment necessary for effective telework, protection equipment, specialized transport services, hygiene and safety measures, online training ([174]).

The new use of technology prompted by the pandemic could improve quality of life and participation for people with disabilities. For instance, the expansion of telework may facilitate the integration into the labour market of some people with disabilities for several reasons, such as removing the need for difficult, time-consuming and sometimes physically risky transportation to the place of work. However, it might exclude others for example due to lack of accessibility of the online systems. For future structural telework provisions to be disability-inclusive and accessible and active engagement of persons with disabilities will be required in their design and implementation.

([171]) Eurofound (2020a).

([172]) Eurofound (2020b).

([173]) Eurofound (2020c).

([174]) ILO (2020c).

Additional one-off targeted financial support was provided to persons with disabilities in some Member States. This includes additional support for persons with disabilities on low incomes (e.g. Slovenia), while other Member States temporarily increased personal-assistance budget of persons with disabilities (e.g. Belgium). Financial support was also available to people on disability pensions in certain Member States (e.g. Lithuania). In addition, extension and increase of existing disability benefits was provided in Greece and France.

Addressing the challenges faced by people with disabilities in the COVID-19 crises can lead to a more inclusive society. A better labour market inclusion of people with disabilities entails multiple positive outcomes such as improved income, life quality, social inclusion and opportunities for people with disabilities ([175]). A more inclusive labour market also leads to a more effective and efficient use of (often untapped) talent and skills and lower public cost for service provision and welfare as well as a higher tax base.

The main areas of concerns relate to:

- measures needed to ensure the protection and safety of persons with disabilities in risk of humanitarian emergencies (Article 11 of the Convention on the Rights of Persons with Disabilities),
- to provide accessible information and communication, including technologies (Articles 9 and 21),
- to involve persons with disabilities through their representative organisations in all matters concerning them (Article 4.3), and
- to ensure equality (Article 5) ([176]);
- to address inadequate public support to guarantee the financial sustainability of the sector due to increased costs, diminished income and the pre-existing difficulties and
- accentuated staff shortages due to increased absences from work, staff departures, sick leave and mental health difficulties ([177]).

Considerable progress is reported in the provision of care and support for persons with disabilities in the

([175]) Broad definition, following Article 1 of the 2006 United Nations Convention for Persons with Disabilities (UNCRPD): 'Persons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others' as the definition for employment.

([176]) E.g. European Disability Forum.

([177]) European Association of Service providers for Persons with Disabilities. (2020).

Box 2.5: How many citizens are experiencing homelessness in the European Union?

The extent of homelessness is difficult to assess as there is no agreed unified definition at the EU level. FEANTSA proposed a framework towards a common definition, however approaches in Member States' data collection and estimates vary. Most commonly, the homeless are identified as those living rough, living in emergency accommodation and living in accommodation for the homeless. ([1]) FEANTSA estimates that there are around 700 000 homeless people currently sleeping rough or living in emergency or temporary accommodation across the EU. This represents an estimated 70% increase in the period of 10 years. According to the OECD housing database, the share of population experiencing homelessness ranged from 0.01% in Croatia to 0.44% in Germany at different points between 2013 and 2019. ([2])

The homeless are an increasingly heterogeneous group. Although the prevailing groups of people experiencing homelessness have been identified as people with mental illness and/or addiction issues, men between 40 and 60 years old and increasingly families (usually single mothers with several children) ([3]), homelessness today affects all ages (including a growing proportion of young people and children), all genders (including an increasing number of women) and all nationalities (including a rising number of asylum seekers and refugees).

([1]) Additional categories include in FEANTSA's ETHOS LIGHT typology include: people living in institutions; people living in non-conventional dwellings due to lack of housing; people living in conventional housing with family and friends.

([2]) www.oecd.org/els/family/HC3-1-Homeless-population.pdf data collected in different years and definitions differ across countries – not directly comparable.

([3]) https://eurocities.eu/wp-content/uploads/2020/11/EUROCITIES-report-EPSR-principle-19-on-housing-and-homelessness.pdf

second wave compared to the first, with most services restored, including in person ([178]).

6.4. Homeless persons

Before the COVID-19 pandemic, the homeless ([179]) were already one of the most vulnerable groups in the population as homelessness represents the most extreme case of housing deprivation and social exclusion. Over the last decade, it has become increasingly difficult for millions of people in Europe to access housing. This inaccessibility has been identified as a result of increases in housing costs, combined with insufficient social reforms and limited rental security. Social exclusion, inadequate housing and homelessness have gained momentum over the last few years, with available data showing dramatic increases in extreme housing deprivation. People are also experiencing longer periods of homelessness.

6.4.1. Primary impacts: vulnerability of homeless persons in the domain of health

The COVID-19 pandemic hit the population experiencing homelessness particularly hard through numerous channels, with the direct impact on health being the most visible. Housing and health are intrinsically linked. In times of a pandemic, the homeless people are directly impacted through a greater exposure to the virus due to the inability to isolate. Similarly, access to sanitary facilities, including public toilets has been closed, limiting the ability for homeless people to protect themselves. A study by Médecins sans Frontières in different sites in Paris and Saint Denis in October 2020 showed high sero-prevalence of SARS-CoV-2 antibodies among people living in precarious situations, notably individuals living in workers' residences, in emergency shelters or those present at food distribution sites ([180]).

Homeless people are also exposed to a greater risk of health complications in the case of infection as they have poorer health than the average population. The rates of respiratory diseases, which is a major risk factor for COVID-19 patients, are particularly high among this population, making it more exposed to severe illness. For example, a study that observed a hospital in Washington found that 32 % of those hospitalized for respiratory diseases were homeless, compared with 6.5 % of all patients hospitalized. If homeless people are infected by the virus they are more likely to die: for instance, in London, the coronavirus mortality rate of homeless people living in emergency accommodation has been recorded to be 25 times higher than that of the general adult population.

Many of the containment measures to limit the spread of the pandemic cannot be realistically or consistently applied to people experiencing homelessness. The inability to practice social distancing, particularly in homeless encampments, shelters and other forms of temporary accommodation represents a unique challenge to facilities that aim at accommodating the maximum number of people in the limited space available. There

([178]) Idem.

([179]) According to the European ETHOS typology developed by FEANTSA, a homeless person is in absence of adequate dwelling (or space) over which a person or their family can exercise exclusive possession (physical domain); being able to maintain privacy and enjoy social relations (social domain); and having legal title to occupation (legal domain). https://www.feantsa.org/download/ethos_faq-18107446974200637605.pdf

([180]) Roederer et al. (2020).

is a clear difficulty for the homeless to self-isolate in case of positive tests, hence to prevent a further spread of the virus and access to healthcare in case of aggravated symptoms. Therefore protecting people experiencing homelessness is an important element of managing the wider public health crisis.

Access of homeless people to healthcare is in general more limited than that of the general population. This further aggravates the already poor health state more likely to occur in this segment of the population. Due to confinement measures and lack of volunteers, the access of this group to healthcare has been further limited during the pandemic.

6.4.2. Secondary impacts: vulnerability of homeless persons in relation to social inclusion

The situation of homeless people has further deteriorated during the COVID-19 pandemic, also due to the lack of stable shelter available. In particular, the following factors have been identified as potential drivers for further complications of the homeless' situation.

- **Access to food.** Many food assistance providers have switched to providing food parcels rather than on-site meals. In some countries, the closure of restaurants and catering facilities has additionally restricted services providing food to homeless and vulnerable people. With the closing down of different facilities providing food to the homeless, food vouchers were introduced or community centres set up.

- **Access to information** about the virus, the possibility to access healthcare and other social support services that are paramount for addressing the multiple difficulties encountered in relation to social inclusion (for example housing, job seeking, rehabilitation) is limited due to the frequent changes in the provision depending on the real-time epidemiological situation and limited access to digital technologies.

- **Access to temporary or emergency accommodation** (e.g. shelters) puts the homeless at risk of infection; therefore they might have preference to sleeping rough, which in turn exposes them to additional risks, such as adverse weather conditions especially in winter months.

- **Greater scarcity of volunteers** on which homeless shelters heavily rely on for service provision. The main reasons are quarantines and legitimate fears of infection through interaction with people who do not practice distancing. Further, a lack of volunteers results in suboptimal provision of care and support services that are essential for the homeless such as distribution of food, hygiene kits, information or even closure of shelters and service delivery.

- **Increased risk of becoming homeless.** Due to a decrease in labour market income caused by the long duration of lockdown measures and the closure of a number of economic sectors, vulnerable households risk accruing arrears on mortgages or rent. In the worst-case scenario, this can result in evictions. This puts affected households or individuals at risk of becoming homeless if compensation measures are not taken.

No specific effects on the homeless have been identified in relation to income replacement benefits to compensate workers in sectors where activity was suspended. Such replacement benefits are directly dependent on the employment status; therefore, the impact of such benefits depends on the working arrangements of homeless people. Given the traditionally identified weak attachment of this group to the labour market, the likelihood of homeless people receiving such replacement benefits is small.

6.4.3. Addressing uneven impacts on homeless persons: policy responses and pointers for further action

Measures to mitigate the direct and indirect impact of COVID-19 on the homeless ([181]) move from actions in terms of health protection to housing provision. Some Member States have made testing of homeless people a priority and access to healthcare is then more available to them. For instance, mobile medical teams have been set in place to reach out to those in need (e.g. Dublin, France). Health staff has also been deployed to facilities providing the services to the homeless. In this context, testing and vaccination campaigns can also be organised (e.g. discussions in Berlin, Brussels) ([182]). In terms of housing, several local authorities have used self-contained units, such as vacant tourist accommodation, social housing, public buildings or student housing. Such examples have been recorded in Barcelona for homeless families based on short-term rental contracts.

Limiting a further widespread of the disease is also crucial. To support households, a number of measures have been taken including moratoria on rental evictions (e.g. Hungary, Germany, France, Belgium, Austria, Ireland, Italy, Croatia, Luxembourg); moratoria on mortgage/rent payments or suspension of social housing rents (e.g. Austria, Portugal, Germany, Ireland, Belgium, Spain); and measures to top up household incomes and provide financial assistance for the payment of rent (e.g. Greece, Ireland, the

([181]) This overview of measures targeting the homeless is a compilation of measures identified by FEANTSA, Housing Europe, and Eurocities.

([182]) https://www.rtbf.be/info/regions/bruxelles/detail_coronavirus-les-personnes-sans-abri-ou-sans-papiers-seront-elles-vaccinees-comment-proceder?id=10713694; Barnett, Ganzerla, Couti and Molard (2020).

Netherlands, Luxembourg, Berlin, Spain). Many countries have also altered landlord-tenant relationships, allowing for automatic contract extensions or renewals. Tax authorities have also introduced payment deferrals or relief measures for mortgage-holders and coverage and generosity of housing benefits were broadened (e.g. Ireland, Luxembourg) ([183]). Some of these are part of a broader set of measures related to housing costs, not necessarily primarily targeted at preventing or tackling homelessness.

It is also important to acknowledge that homeless people and especially those sleeping rough cannot comply with strict confinement measures or a curfew. Collaboration between homeless services, police and civil protection can ensure that the homeless are protected from punitive enforcement measures.

Finally, ensuring safe homeless services and protecting workforce of the homeless sector is of utmost importance. In order to ensure that services to the homeless can continue to be provided, shelters for homeless people were identified as 'essential services' in a number of Member States and this allowed a distribution of protective equipment or additional funding to extend opening hours and intensify the support ([184]). Measures have been taken to facilitate social distancing in temporary reception centres (e.g. Brussels, France), including the facilities where those with symptoms or who have tested positive are 'confined'. Concrete measures entail: re-enforced hygiene measures; reserving/procuring housing units for isolation; extra capacities to relieve crowding; 'full board' arrangements in shelters for especially vulnerable users; information and advice for service users; hospitalisation protocols; 24/7 opening of night shelters. The pre-condition for the provision of services is that appropriate measures are taken to protect staff and volunteers working with homeless people at risk of contracting COVID-19. The sector is deploying risk management measures (reducing circulation of staff, remote working for relevant functions, preparing and implementing plans to reduce services, re-enforced hygiene measures, access to equipment, reorganisation of work, centralised staff lists etc.).

The policy response during the pandemic has shown that solutions to address rough sleeping and protect vulnerable households from housing exclusion can be successfully implemented in the short term. The European Pillar of Social Rights Principle 19 on housing and assistance for the homeless calls for access to social housing or housing assistance of good quality shall be provided for those in need; vulnerable people have the right to appropriate assistance and protection against forced eviction; and adequate shelter and services shall be provided to the homeless in order to promote their social inclusion. The above-mentioned examples indicate that many targeted measures to protect the homeless against the cumulative risks they face in the pandemic have been implemented in an integrated manner in different Member States, regions or municipalities. At the same time, protective measures have been taken to limit vulnerable households from housing exclusion.

([183]) OECD (2020).
([184]) EAPN (2020).

7. CONCLUSIONS

During the pandemic, health risks and socio-economic impacts did not affect all groups to the same extent. Specific groups facing increased health risks during the pandemic – for different reasons – include migrants, people with chronic conditions or disabilities and the homeless. Persons with disabilities have faced issues due to both pre-existing health conditions and limitations in daily activities that make it harder to follow preventative measures. Homeless persons have faced specific hurdles in social distancing and hygiene measures for lack of private space. More generally, low-income and poor households often lack key resources that helped many Europeans to cope with challenges of social distancing, such as digital connectivity. Income-poor households were also more likely to live in poor housing conditions, which made confinement more challenging.

While employment has been strongly supported by short-time work schemes, some groups were particularly affected by job loss. Workers on temporary contracts, workers with low educational attainment and youths were the groups most severely hit by the fall in employment, in particular during the second quarter of 2020. The sharpest decline in employment was registered in the sectors severely affected by the lockdown measures, such as the hospitality sector, gastronomy, and travel agency activities. Some of these sectors are low-paid sectors, notably 'accommodation and food service activities'.

The need for social interaction and the ability to telework played a key role in the labour market, along with the essential nature of some activities. All non-teleworkable occupations experienced a decline, while some teleworkable occupations registered a significant increase in employment. Among the occupations that cannot be performed remotely, the decline was less pronounced for those that require high social interaction and are critical, such as doctors, nurses, as well as personal care and childcare workers, all categories that were at the front line during the pandemic. Only occupations that are critical and teleworkable, and require low social interaction showed a positive growth in employment. This group includes information and communication technology professionals and technicians, life science technicians, and all occupations that implement essential activities and at the same time can easily continue to operate remotely.

Policies played a key role in alleviating adverse effects on vulnerable groups and will be key to ensuring an inclusive recovery. Workers that had relatively low wages prior to the crisis generally suffered most from cuts in employment or self-employment income. Tax-benefit systems contained or even offset the regressive impact that the COVID-19 crisis had on market incomes. In light of the particular difficulties that the pandemic presented for vulnerable groups, many crisis-related initiatives were taken by Member States to support them. As the EU economy and the Member States recover, these initiatives could serve as building blocks to ensure that the recovery is inclusive. The monitoring of the medium-term impacts of the pandemic will be of utmost importance. These include jobs and incomes lost after the initial shock, as exceptional support measures are gradually wound down.

Annex 1: Employment and absences due to temporary lay-off by occupational category and quarter

Table A1.1

Employment and absences due to temporary lay-off by occupational category and quarter, EU26

		2019Q2			2019Q4			2019 (annual)			2020Q2			2020Q4			2020 (annual)					
Categories	Critical occupations	Employed (000)	of which absent due to temp. lay-off (%)		Employed (000)	of which absent due to temp. lay-off (%)		Employed (000)	of which absent due to temp. lay-off (%)		Employed (000)	of which absent due to temp. lay-off (%)		Employed (000)	of which absent due to temp. lay-off (%)		Employed (000)	of which absent due to temp. lay-off (%)		Change Q2 (%)	Change Q4 (%)	Annual change (%)
Not teleworkable, high social interaction	Non-critical	18679	0	u	18664	0.19	u	18656	0		17332	19.52		17586	6		17789	7.72		-7	-6	-5
Not teleworkable, high social interaction	Critical	17851		c	18095		c	17934	0	u	17655	4.16		17870	0		17786	1.38		-1	-1	-1
Not teleworkable, low social interaction	Non-critical	30085	0		29812	0.23		29927	0		28682	9.88		28996	1		29084	3.54		-5	-3	-3
Not teleworkable, low social interaction	Critical	32519	0		32458	0.22		32450	0		31237	7.36		31551	1		31604	2.72		-4	-3	-3
Teleworkable, high social interaction	Non-critical	21341	0	u	21260	0.21		21248	0		21248	7.76		21404	2		21365	3.12		0	1	1
Teleworkable, high social interaction	Critical	9450		c	9422		c	9328	0		9527	3.51		9800	1		9533	1.73		1	4	2
Teleworkable, low social interaction	Non-critical	16520		c	16463		c	16422	0	u	16414	6.98		16738	1		16559	2.58		-1	2	1
Teleworkable, low social interaction	Critical	4002		c	4049		c	4005	0	u	4216	2.98		4452	1	u	4279	1.27		5	10	7
Not teleworkable, high social int.	Total	36530	0	u	36759	0.13		36590	0		34986	11.77		35455	3		35574	4.55		-4	-4	-3
Not teleworkable, low social int.	Total	62605	0		62271	0.23		62377	0		59919	8.56		60547	1		60688	3.11		-4	-3	-3
Teleworkable, high social int.	Total	30791	0		30682	0.2		30576	0		30775	6.44		31204	2		30898	2.69		0	2	1
Teleworkable, low social int.	Total	20522		c	20512		c	20427	0		20630	6.17		21189	1		20838	2.31		1	3	2
Non-critical	Total	86625	0		86200	0.19		86253	0		83676	10.77		84724	2		84797	4.12		-3	-2	-2
Critical	Total	63822	0		64024	0.17		63717	0		62634	5.58		63673	1		63202	2.09		-2	-1	-1
Total	Total	150447	0		150224	0.18		149970	0		146310	8.55		148396	2		147999	3.26		-3	-1	-1

Note: Critical occupations are identified based on an extended version of the categorisation provided by the Commission Communication on Guidelines concerning the exercise of the free movement of workers during COVID-19 outbreak. Data refers to the age group 20-64. Armed forces are not taken into account in the analysis, therefore overall totals do not exactly match those presented in the table. An absence from work is classified as a "temporary lay-off" if it is due to slack work for technical or economic reasons. 'c' refers to confidential data, 'u' to unreliable data.

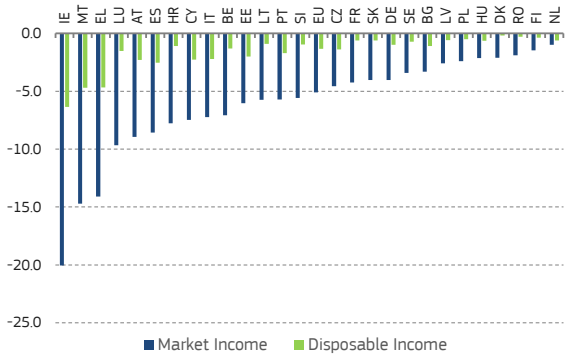
Source: Calculations by the European Commission's Joint Research Centre, based on a Eurostat special extraction on EU-LFS data and on indexes produced in Sostero et al. (2020).

Click here to download table.

Annex 2: EUROMOD charts by EU Member States

Chart A2.1

Change in market and disposable incomes from baseline scenario (%) – EU Member States

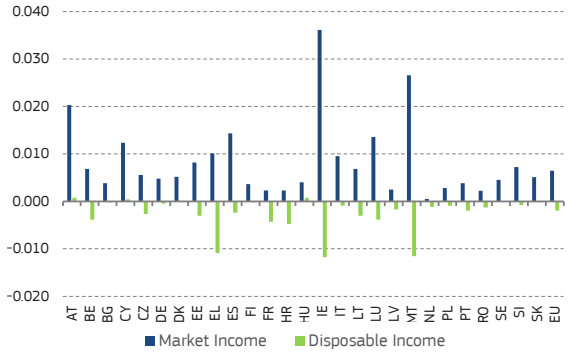


Source: JRC's calculation using EUROMOD I3.0+, Christl et. al (2021).

Click here to download chart.

Chart A2.2

Changes in Gini coefficient of disposable income from baseline scenario– EU Member States

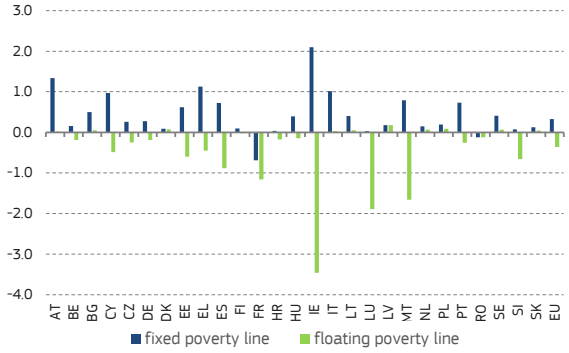


Source: JRC's calculation using EUROMOD I3.0+, Christl et. al (2021).

Click here to download chart.

Chart A2.3

Changes in at-risk-of-poverty rates from baseline scenario – EU Member States, percentage points



Source: JRC's calculation using EUROMOD I3.0+, Christl et. al (2021).

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CHAPTER 3

Spatial impacts in a crisis context: promoting inclusive recovery and structural changes

1. Introduction ([185])

The COVID-19 crisis is having heterogeneous territorial impacts. The effects of the COVID-19 crisis on people's lives and livelihoods depend on regional and even local factors, as argued in various recent studies and forecasts. Regional factors, such as the age distribution, access to healthcare, and exposure to air pollution affected COVID-related health risks in different ways ([186]). In turn, the economic repercussions of the health crisis at the local level, as well as the speed of the recovery, also depend on structural factors, such as the structure of the local economy (e.g. the reliance on tourism industry), occupational structure, workforce characteristics (i.e. the potential for teleworking and level of education, the capacity of local economy to adapt to changes in demand patterns triggered by the pandemic), and local policies ([187]).

The geographically uneven impact of the crisis has often implied greater variation within countries, especially in larger ones, than between them. In Europe, a small fraction of the 500 NUTS 3 regions account for the majority of COVID-19 deaths ([188]). The economic impacts are also unfolding unevenly between EU regions. Thus, the current crisis is undoubtedly also a regional one, with important consequences for local economies, well-being, transportation, and everyday life. A regional analysis is therefore essential to fully understand and manage the unequal impacts of the current pandemic. The territorial impact mainly depends on regional features and local restrictions in terms of both social and economic limitations. Some regions, given their economic structure and the magnitude of the pandemic, have shouldered a heavy part of the burden of the COVID-19 crisis: large parts of population perceive their income and future prospects to be at risk, generating negative sentiment regarding own situation (see *Box 3.2*). Such regional specificities concerning the sentiment reflect significant differences in terms of both the current impact of the crisis and expectations on its development at territorial level. But what are the regional impacts of the pandemic? And what does drive the different reactions to the shock?

Against this background, the chapter focuses on regional and territorial perspectives in terms of past trends, current effects of the COVID-19 crisis and future challenges. In doing so, it explores challenges and opportunities related to structural changes. The chapter is structured in three main sections: the first section reviews regional evolution prior to the COVID-19 crisis; the second section discusses the impact of COVID-19 and regional reactions to the shock; and the final section assesses future scenarios in the short run at both national and regional level. The chapter investigates these issues based on available evidence and sheds light on future territorial trends in the face of current challenges.

([185]) Authors: Petrica Badea, Stefano Filauro, Alessia Fulvimari, Endre Gyorgy, Gabor Katay, Jorg Peschner and Giuseppe Piroli. Contributions from the European Commission's Joint Research Centre are gratefully acknowledged.

([186]) See OECD (2021) for an overview of the territorial impact of the COVID-19 crisis in a variety of domains: health, economic, social and fiscal and the policy implications for multi-level governance and local policies.

([187]) Ibid.

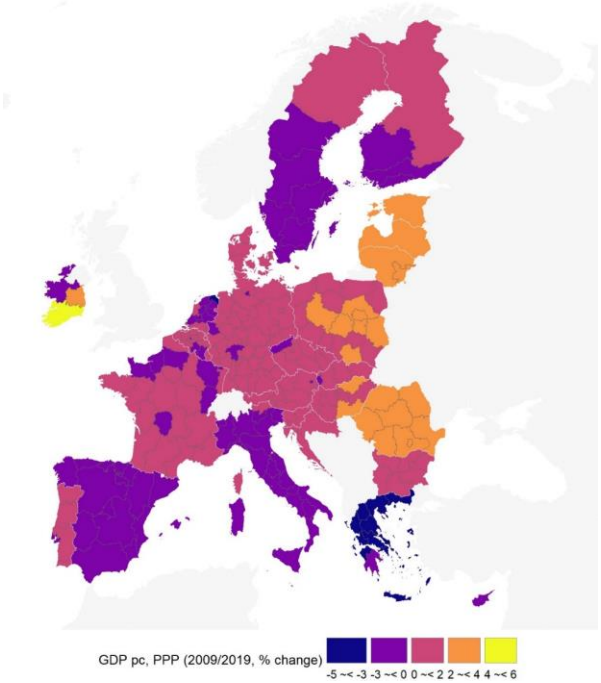
([188]) See Guibourg (2020). Findings based on a subset of the total 1345 NUTS 3 regions. See also Chapter 1.4 for an assessment of excess mortality at NUTS 3 level.

2. THE SOCIO-ECONOMIC EVOLUTION IN REGIONS BEFORE THE COVID-19 CRISIS ([189])

European regions and their labour markets are undergoing profound transformations. Globalisation, which brought the offshoring and outsourcing of several manufacturing activities, has increased automation, labour mobility and competition across regions ([190]). These long-term trends resulted in divergent regional economic dynamics and were further exacerbated by the 2008-09 crisis ([191]).

GDP trends were highly heterogeneous across EU regions between 2009 and 2019. The annual average change in GDP per capita between 2009 and 2019 provides indication of a lost decade for some regions, mostly concentrated in Southern Europe (*Figure 3.1*). Italian and Spanish regions show a slight decline in their GDP per capita following the 2009 crisis, while some Greek regions show a more severe decline. More sustained growth is instead visible in most Central and North European regions. Conversely, most Eastern European regions achieved annual growth rates that increased their GDP between 2% and 4%, which can largely be attributed to their respective economic catch-up phases following EU accession.

Figure 3.1
Real GDP per capita, Purchase Power Parity (PPP). Average annual change 2009-2019, NUTS- 2 level



Source: European Commission's Joint Research Centre based on ARDECO, ROVGD
Click here to download figure.

The GDP dynamics at regional level are mostly mirrored in employment (*Figure 3.2*). Regions exhibiting declining or weak economic growth also experienced a contraction – or at best weak growth – in the total number of employed individuals. Best performing regions instead show different patterns. Central and North European regions largely show positive employment dynamics – this particularly holds true for Southern Germany, Northern Germany and most Belgian and Dutch regions. Conversely, several Eastern European regions (notably in Poland, Romania, and Bulgaria) witnessed a more negative development: some regions recorded annual average loss of total employment around 1%. This development is rooted in increasing labour mobility across EU regions from East to West rather than in unfavourable cyclical conditions or an increase in unemployment or inactivity ([192]).

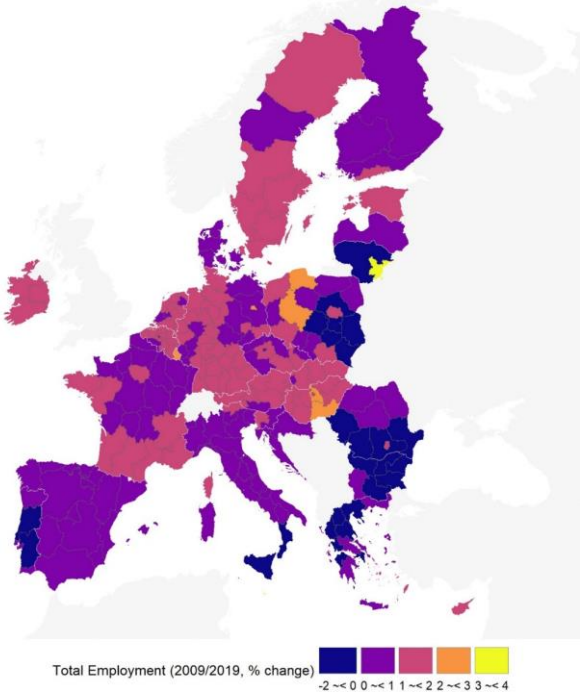
([189]) This section benefits from contributions provided by Marco Colagrossi, Sara Flisi and Giulia Santangelo (European Commission's Joint Research Centre).

([190]) Capello, R., Fratesi, U. and Resmini, L. (2011). Globalization and regional growth in Europe: Past trends and future scenarios. Springer Science & Business Media.

([191]) In this respect, a recent study analyses the risk of development traps for different EU regions; how to measure the regional development trap and discusses the need for policies to end regional development traps (Iammarino et al. 2020)

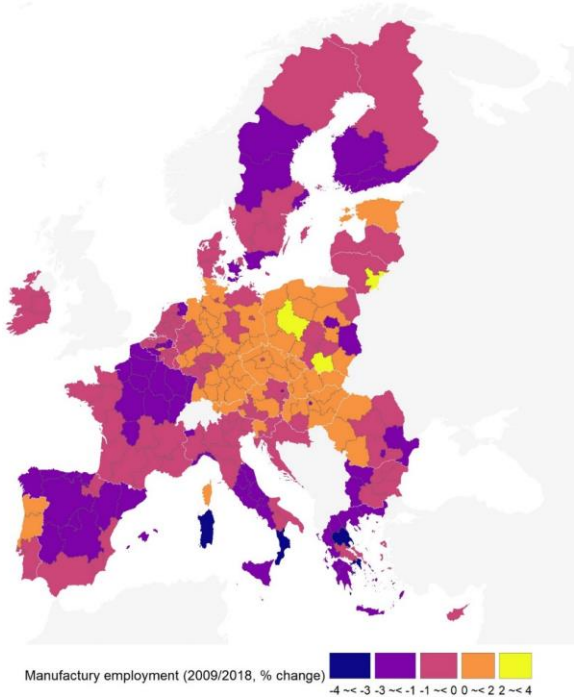
([192]) Countries of origin especially in Southern and Eastern Europe already experienced population declines. Most notably, the population in Bulgaria and the Baltic States declined by between 16% and 26% over the past 25 years (European Commission, 2021a).

Figure 3.2
Total Employment. Average annual change 2009-2019, NUTS- 2 level



Source: European Commission's Joint Research Centre based on ARDECO, RNETD
Click here to download figure.

Figure 3.3
Employment in the manufacturing sector (NACE B-E). Average annual change 2009-2019, NUTS -2 level.



Source: European Commission's Joint Research Centre based on ARDECO, RNETZ
Click here to download figure.

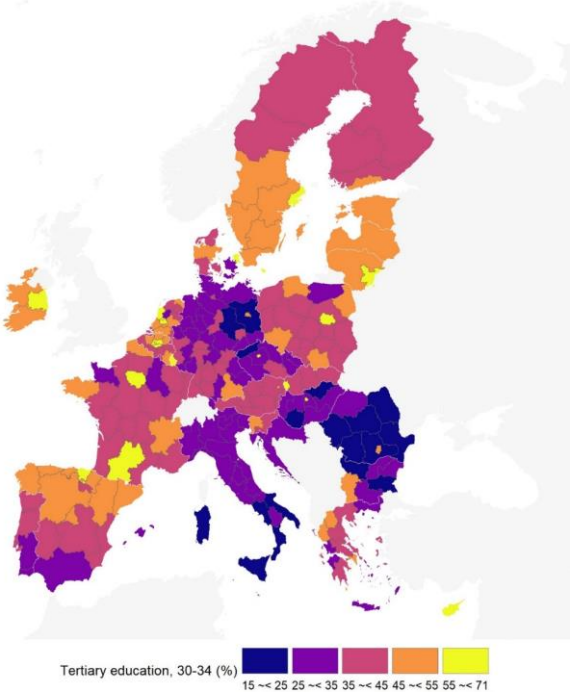
The sectoral composition of regional economies remained rather stable despite diverging trends for the manufacturing sector. In particular, non-financial services sectors in Western European regions employ the largest share of the labour force. Most Western, Southern and Northern European regions have continued to register a decline in total employment in the manufacturing sector, as manufacturing activities were either outsourced to Eastern Europe or to countries outside the EU (*Figure 3.3*). As jobs in the manufacturing sector are typically middle-income jobs ([193]), this had important (and mostly negative) consequences on the middle classes of these countries. Germany, however, displayed an average increase in employment of about 6% over ten years thanks to its high value-added manufacturing sector. Among the largest regions, only the Düsseldorf region showed a negative pattern (-5%). Even more positive developments can be found across Eastern European Regions. However, the trends are more scattered across regions. For example, the Polish regions of Wielkopolskie and Małopolskie have been among the best performing regions in Europe (+43% and +25%, respectively over ten years), while the capital region of Warszawski Stołeczny registered a 20% decline.

In a context of rapidly evolving labour market conditions, the availability of educational opportunities gives access to a broader range of jobs. The Europe 2020 strategy had set the target of increasing the share of Europeans aged 30-34 having completed tertiary education by 2020 to at least 40%. While the target has been met on average, regional differences are still stark (Social Scoreboard, *Figure 3.4*) ([194]). This is true both for regions in countries having a lower-than-average share of tertiary-educated individuals (such as those of Bulgaria, Germany, Portugal and Romania); and those who were starting from a higher-than-average situation, such as in France and Ireland.

([193]) OECD (2019).

([194]) The indicators from the Social Scoreboard of European Pillar of Social Rights by NUTS 2 are available at: https://ec.europa.eu/eurostat/web/european-pillar-of-social-rights/indicators/data-by-region

Figure 3.4
Share of tertiary education (ISCED 5-8), individuals aged 30-34, 2019, NUTS -2 level



Source: European Commission's Joint Research Centre based on Social Scoreboard - European Pillar of Social Rights

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2.1. Income trends and inequality at territorial level

Already before the pandemic, regional disparities and rural-urban cleavages were visible territorial challenges. The territorial lens has become increasingly important in explaining rising inequalities in the creation of added value, the world of work and the resulting redistributive role of local, national or EU policies. According to a consolidated body of research, the EU is currently dealing with a widening urban-rural gap ([195]), with notably urban regions displaying higher rate of GDP per capita increase (though with increasing inequalities within urban areas) and rural regions lagging behind. This widening gap is the result of a profound economic transformation driven by globalisation, technological change and the progressive economic integration with global markets, which substantially altered dynamics in spatial development ([196]). Trends such as the agglomeration of high value-added economic activities and the knowledge economy in big cities contrasted with ageing, depopulation and outward migration in rural areas have been increasingly identified as key drivers behind the territorial inequality of outcomes and opportunities.

Regional economic disparities in GDP per capita increased over the past 15 years in the majority of EU countries. Within-country differences in regional GDP per capita have increased more markedly in Ireland, France and Denmark. Conversely, in some countries the variation of GDP per capita across regions slightly declined (Portugal, Austria, Latvia and Finland). In some instances, growing regional disparities resulted from rising gaps between urban and non-urban regions as growth was generally sluggish in regions far from metropolitan areas. Although annual GDP-per-capita growth in metropolitan regions has been slow in the last 15 years (1.15%), remote regions and regions close to small or medium cities have been growing at an even-lower rate (0.9%) ([197]). These differences in GDP per capita across regions translate into differences in household disposable income.

The large variation in household incomes, especially between urban and rural areas, risks undermining inclusive growth. The level and distribution of household incomes, earnings and wealth varies substantially within countries – across regions, municipalities and neighbourhoods, and between urban and more rural areas. These geographic disparities risk compromising inclusive growth if they exclude people from opportunities, and hence from the benefits of economic growth, by preventing access to good-quality infrastructure, such as education and child care, health care, transportation, and digital services. For instance, the access to healthcare in rural areas is a challenge in many Member States. The availability of health services is limited mainly due to shortages of medical professionals, insufficient incentives for doctors and nurses to settle their practice in rural areas ([198]).In turn, these disparities further decrease development chances and wellbeing, and fuel political discontent especially in areas that are lagging behind.

The at-risk-of-poverty rate is reasonably heterogeneous within countries. In 2019, the proportion of population whose disposable income is below 60% of the national median income varies greatly across regions, especially in Member States with deep-rooted regional disparities such as Italy and Spain (*Figure 3.5*, left panel). The risk of poverty is highly heterogeneous across regions also in Romania, Poland and Sweden. This highlights potentially divergent income developments across regions.

([195]) See Eurofound (2019) and OECD (2018), with a focus on policy response to address this gap. For a contrasting view see Holzhausen and Wochner (2019).

([196]) See Rodriguez-Pose (2013) for a landmark study on the role of public institutions in addressing regional policies and development gaps in the light of these megatrends.

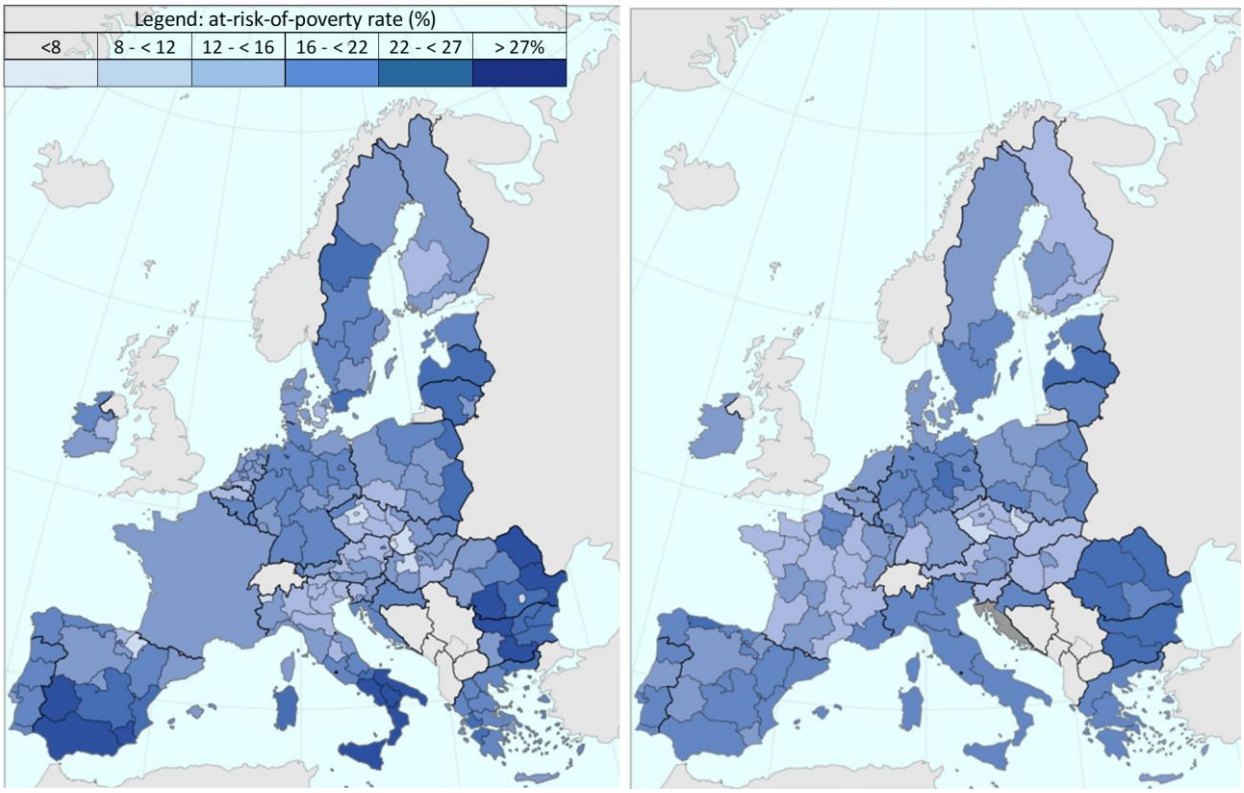
([197]) See Königs and Vindics (forthcoming).

([198]) See Eurostat (2021).

Figure 3.5

Regional differences in the risk of poverty are more pronounced under a national poverty line

At-risk-of-poverty rate by NUTS 1/ NUTS 2. % of population below 60% of the national median income [left] and below 60% of regional [NUTS 1] median income [right], 2019



Note: DG-EMPL calculations and Eurostat [ilc_li41] ; SOEP data for Germany

Source: Calculations for Germany were provided by Virmantas Kvedaras (European Commission's Joint Research Centre)

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However, when regional poverty is assessed against regional poverty lines, within-country divergences are less pronounced (*Figure 3.5*, right panel). Income poverty is primarily assessed at the national level as tax-benefit systems – the main instruments in tackling income poverty – mainly fall within the competence of each Member State. The structure and characteristics of tax-benefit systems are influenced by national preferences and are heterogeneous across Member States. Nonetheless, as income developments may continue to diverge within countries, people could be more inclined to compare their economic wellbeing in relation to the average income of their region, especially in countries with large income disparities.

Hence, in countries such as Italy and Spain, the risk of poverty is lower in relatively poorer regions (e.g. Andalucía, Southern Italy) when assessed under a regional poverty line as opposed to a national one. At the same time, the proportion of households at risk of poverty is higher in richer areas when assessed under regional poverty lines as it reflects generally higher median incomes and higher income inequality ([199]). Thus, income developments have a regional dimension, which shows upon closer inspection that increasing population segments within richer regions may not benefit from the economic prosperity of the region.

Many Member States are characterised by marked income differences between regions, at NUTS 3 level ([200]). Income trends can be analysed at a deeply granular subnational level thanks to administrative data – albeit currently available only for a subset of EU countries. Recent administrative data, derived mainly from tax registers and harmonised by the OECD, illustrate territorial income disparities and their evolution over time ([201]). Differences in disposable income between the highest- and lowest-income regions are around 25% of national median disposable income in countries such as Austria and Sweden. For different income concepts such as household gross income or employment income, differences in median incomes across regions appear larger, especially in Italy and Belgium (*Chart 3.1*). Capital regions have much higher incomes than the national average in Portugal and Sweden, while in Belgium the capital region has relatively low median incomes and surrounding areas have higher incomes (see Annex I).

([199]) See *Chart 3.2* and *Chart 3.3* for an assessment of how richer regions, especially metropolitan ones, are those with higher inequality levels.

([200]) The following analyses adopt as geographical unit of interest the OECD metropolitan/non-metropolitan typology for small regions (henceforth, TL3 level). Small regions are classified as "metropolitan" if more than half of their population lives in a Functional Urban Area (FUA) of at least 250 000 inhabitants and as "non-metropolitan" otherwise. The non-metropolitan can be further broken down into three categories depending on whether functional urban areas are accessible by the population living in each region - up to a one-hour drive (Fadic et al. 2019).

([201]) However the income concept differs across countries as highlighted in the different charts.

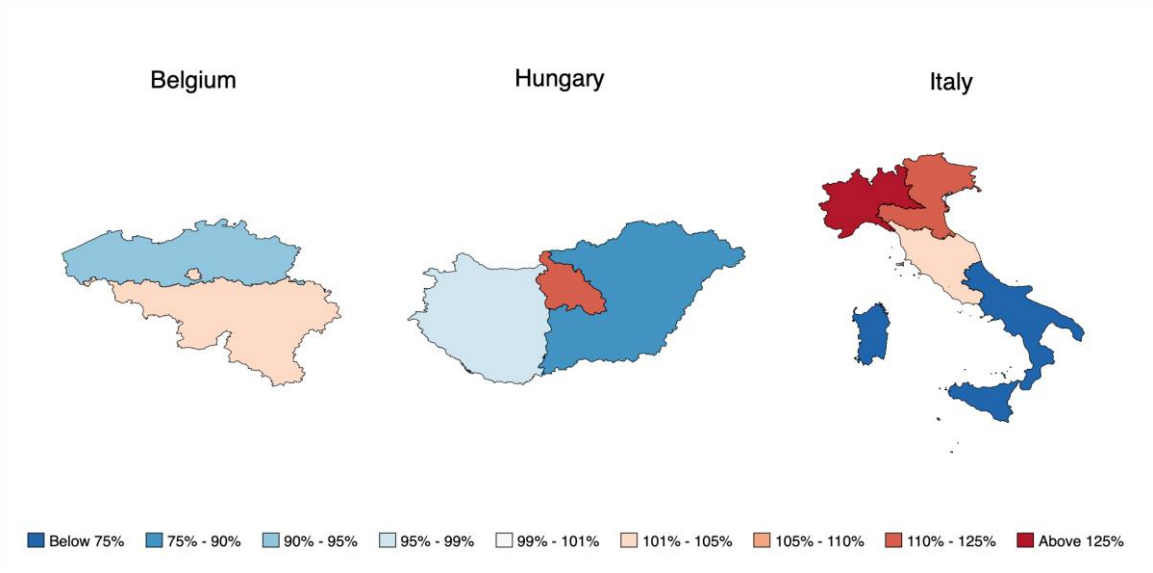
Box 3.1: Regional variations in poverty based on an absolute measurement approach

Differences in households' minimum needs and the cost of living across regions can have considerable implications for the purchasing power and the welfare of households. Standard monetary measures of poverty and social exclusion, such as the "at-risk-of-poverty (AROP)" indicator, tend to disregard this consideration when used for regional analysis. Sub-national poverty estimates are therefore often biased for sampling and non-sampling reasons alike.

The pilot initiative "Measurement and monitoring of absolute poverty (ABSPO)" can make substantial contributions to improving poverty measurement at local, regional, national, and European level ([1]). The ABSPO project explores the feasibility of developing a sound methodology for cross-country comparable absolute poverty measurement in the EU. These absolute poverty indicators are meant to contextualise and complement existing poverty indicators and provide a larger assessment of poverty in Europe, including absolute indicators ([2]).

The ABSPO project uses a mix of reference budget techniques and survey-based statistical methods to model individuals' and households' minimum financial needs. The main advantage of this so-called absolute approach to poverty measurement is that horizontal differences in individuals' minimum financial needs can be appropriately reflected in the resulting set of customised poverty lines. Individual characteristics (such as age, gender, or health status), household size and composition, as well as region of residence and the living environment all enter into the calculation of ABSPO lines. The corresponding poverty rates are then calculated in standard and AROPE-compatible manner using microdata on households' disposable income, i.e. the EU-SILC.

Figure 1
Regional variation in absolute poverty lines in selected Member States



Source: Percentage value of regional poverty lines relative to the respective country average. Household Budget Survey (HBS) data: 2015 for Italy; 2016 for Belgium and 2018 for Hungary.

The absolute approach to poverty measurement can highlight the variability of poverty lines at regional level, as illustrated with some preliminary estimates of this project for selected Member States. These are based on newly-created and regionally-priced nutritional food baskets that are harmonised across countries. These nutritional food baskets are mapped into overall poverty lines with a novel simulation-based statistical method based on national HBS data from 2016-2018 ([3]). The regional maps in Figure 1 therefore show the extent to which regional poverty lines deviate from the relevant country means due to spatial differences in food prices and household expenditure patterns. Specifically, they reveal that the

([1]) The project has been launched by the Directorate-General for Employment, Social Affairs and Inclusion and executed by the Commission's Joint Research Centre. The upcoming final report is due in September 2021.

([2]) Right now, the project has focused on a subset of EU countries. If scaled up to the EU-level the ABSPO measures could potentially allow for comparable and consistent absolute poverty measurement for monitoring purposes and to assess adequacy of social policies.

([3]) See Menyhert (2021) for more information.

(Continued on the next page)

Box (continued)

basic cost of living can vary by up to 30% within countries (see the case of Italy, for instance), which is comparable in magnitude to the degree of cross-country variation of national poverty lines in the EU. Taking into account such a varying degree of regional cost of living can provide a greater understanding of the extent and distribution of poverty in the EU.

Metropolitan regions identifiable as the capital region have thus the potential to reap the benefits of the city, favouring macro-trends described above. Countries' capital regions are strongly represented among the highest-income regions, as seen in Portugal, Slovakia and Sweden. In the case of Austria and Denmark, in the regions with the highest incomes are in close geographic proximity to the capital region. By contrast, in Belgium the capital region is the lowest-income region (Brussels Capital) ([202]).

Regional divergence over time in median incomes occurred in some EU countries, although this is not a generalised trend. There is no evidence of a systematic rise in cross-regional income disparities in countries for which longer time series data are available, i.e. of a broad divergence between higher- and lower-income regions. In Austria and Hungary cross-regional disparities in median incomes, as measured by the coefficient of variation, have declined over the last decade. Conversely, cross-regional income disparities increased markedly in Italy between 2007 and 2018 and in Finland in the 1990s, followed by stable trends thereafter. Denmark and Sweden show signs of cross-regional divergence over the last twenty years. By contrast, within-region income inequality increased in all countries analysed, especially in the mainly urban high-inequality regions ([203]).

However, income inequality differs substantially at regional level, and inequality indices tend to be highest in the capital regions. Differences in regional Gini indices amount to around 10 points in Denmark and Sweden, while these differences in regional inequality are more contained in Finland, Portugal and Slovakia (*Chart 3.2*). Regardless of the income concept adopted, the capital regions are the most unequal in all countries, except Italy where Milan is the most unequal area. Thus, the 'urban paradox' seems a reality in present-day EU as in capital regions there are more job opportunities but also higher proportions of people living at the margins of the labour market ([204]). Income inequality in the most unequal region, as measured by the Gini index, is usually around 10-25% higher than across the country as a whole, though the difference is nearly 40% in Belgium. These regional disparities in income inequality within a given country tend to be larger than the differences in overall inequality across countries, as measured by the country-level Gini indices. Moreover, a large body of evidence shows that income inequality tends to be higher in more populous regions.

Metropolitan regions have higher median incomes, though variation within metropolitan regions can be large. The finding that the capital region tends to be both a county's highest-income region and its most unequal region is indicative of the relationship between the income distribution of a region and its degree of urbanisation (*Chart 3.3*). Higher income levels are not solely a feature of capital regions. In general, metropolitan regions tend to have higher median incomes compared to the national median, while non-metropolitan regions display lower median incomes. This is the case for the majority of countries where disposable income data is available (Denmark, Portugal, Slovakia, and Sweden; top panel, *Chart 3.3*). This clear pattern of higher median incomes in metropolitan regions is less clear-cut in countries where different income concepts are available from the administrative data (Austria, Belgium, Hungary, and Italy; bottom panel, *Chart 3.3*).

The degree of urbanisation relates even more strongly to income inequality. In all countries for which administrative income data was available, the Gini index is higher in metropolitan than non-metropolitan regions [Chart A1.1 in Annex I]. Moreover, in nearly all countries, the most unequal region is metropolitan, while the least unequal region is rural. Thus, in urban areas there is a higher risk that spatial segregation reproduces and deepens these inequalities across generations.

Tax-benefit systems have the potential to redistribute across areas. Preliminary evidence shows that for Austria and Sweden, the tax-benefit redistribution for median-income households is higher in lower-income areas and in rural areas than in high-income and metropolitan areas ([205]).

([202]) See Annex I for detailed maps for Austria and Belgium.

([203]) Only in Austria within-region inequality did not increase significantly (Königs and Vindics, forthcoming).

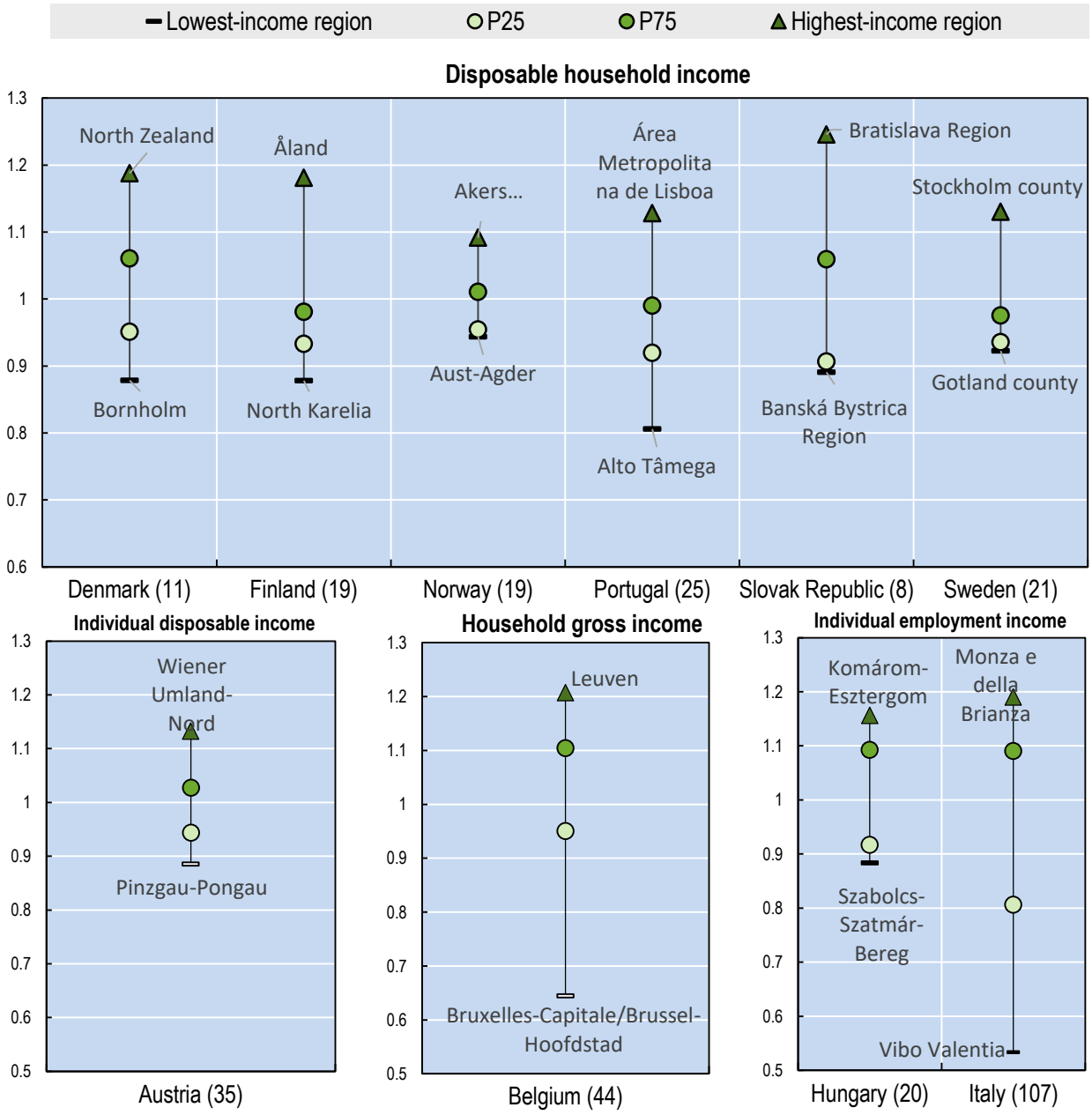
([204]) 8th Cohesion Report. European Commission (2021b).

([205]) Preliminary evidence from Königs and Vindics (forthcoming).

Chart 3.1

Regional income disparities can be large

Regional median incomes for high-and low-income regions, expressed relative to national median income, TL3/NUTS 3 level, 2017/18



Note: Minimum" and "Maximum" give the relative median incomes for the lowest-and highest-income regions, "P25" and "P75" give those for the regions at the 25th and 75th percentile of the regional income distribution. Figures in brackets behind the country name give the number of TL3/NUTS 3 regions per country.

Source: OECD calculations based on administrative income data

Click here to download chart.

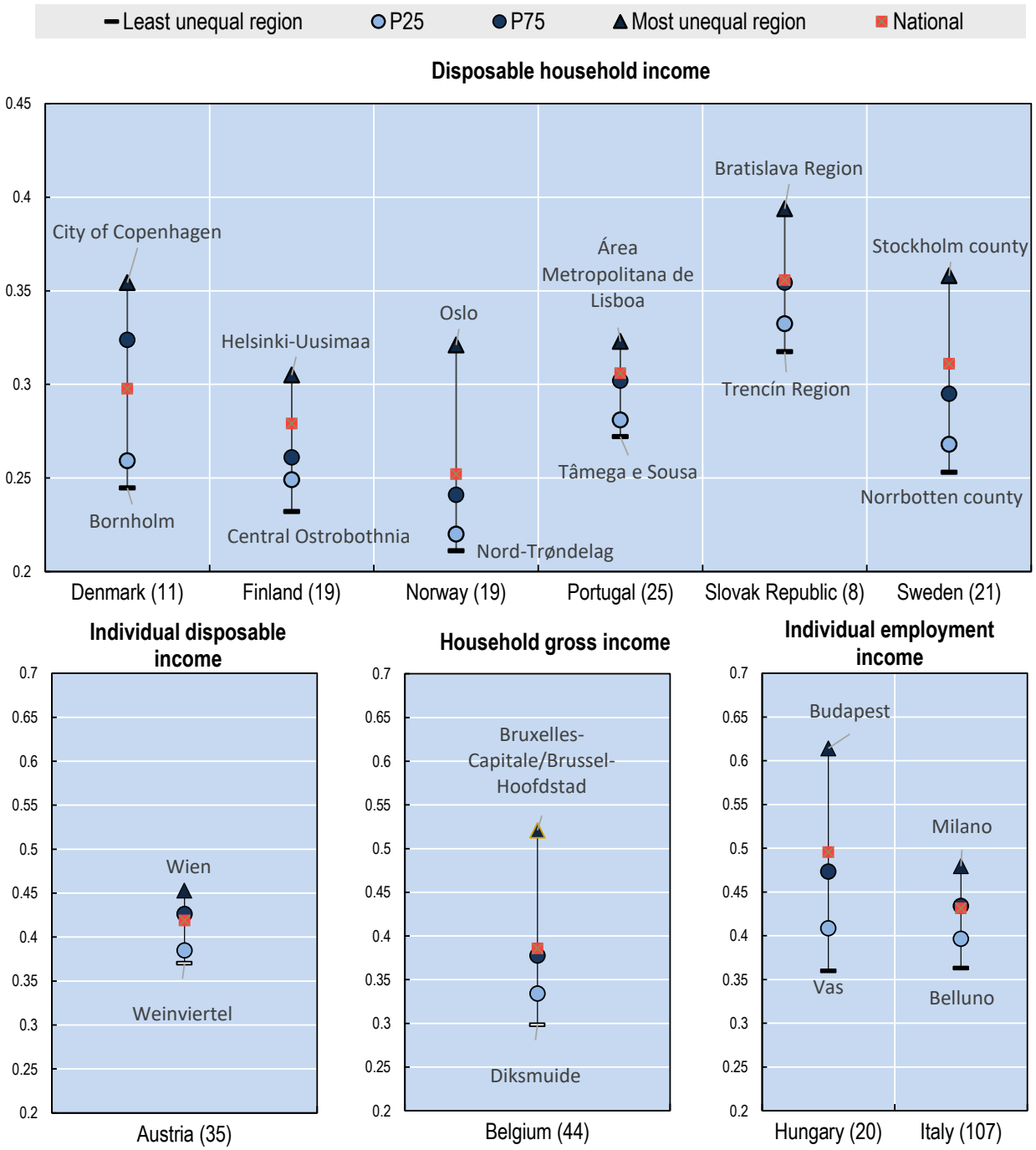
Capital areas have higher median incomes but a more unequal distribution. Preliminary evidence for capital areas in Slovakia, Sweden and Portugal highlight that their income levels may be substantially higher than across the country overall ([206]). In these countries the capital areas show median incomes respectively 25%, 13% and 7% higher than the national median incomes. At the same, incomes in Bratislava, Stockholm, and, to a lesser extent, Lisbon are distributed much more unequally than in their countries overall, resulting in Gini coefficients up to 4 points higher than the national ones, especially in the first two capitals.

([206]) Evidence for these three capitals extends the previous TL3 classification of administrative boundaries as it comprises highly densely populated municipalities referred to as the "urban core", as well as any adjacent municipality with a high degree of social and economic integration with the urban core.

Chart 3.2

Income inequality varies substantially across regions and is often highest in the capital region

Regional income Gini coefficients for high-and low-income regions, TL3/NUTS 3 level, 2017/18



Note: "Minimum" and "Maximum" give the relative median incomes for the lowest-and highest-income regions, "P25" and "P75" give those for the regions at the 25th and 75th percentile of the regional income distribution. Figures in brackets behind the country name give the number of TL3/NUTS 3 regions per country.

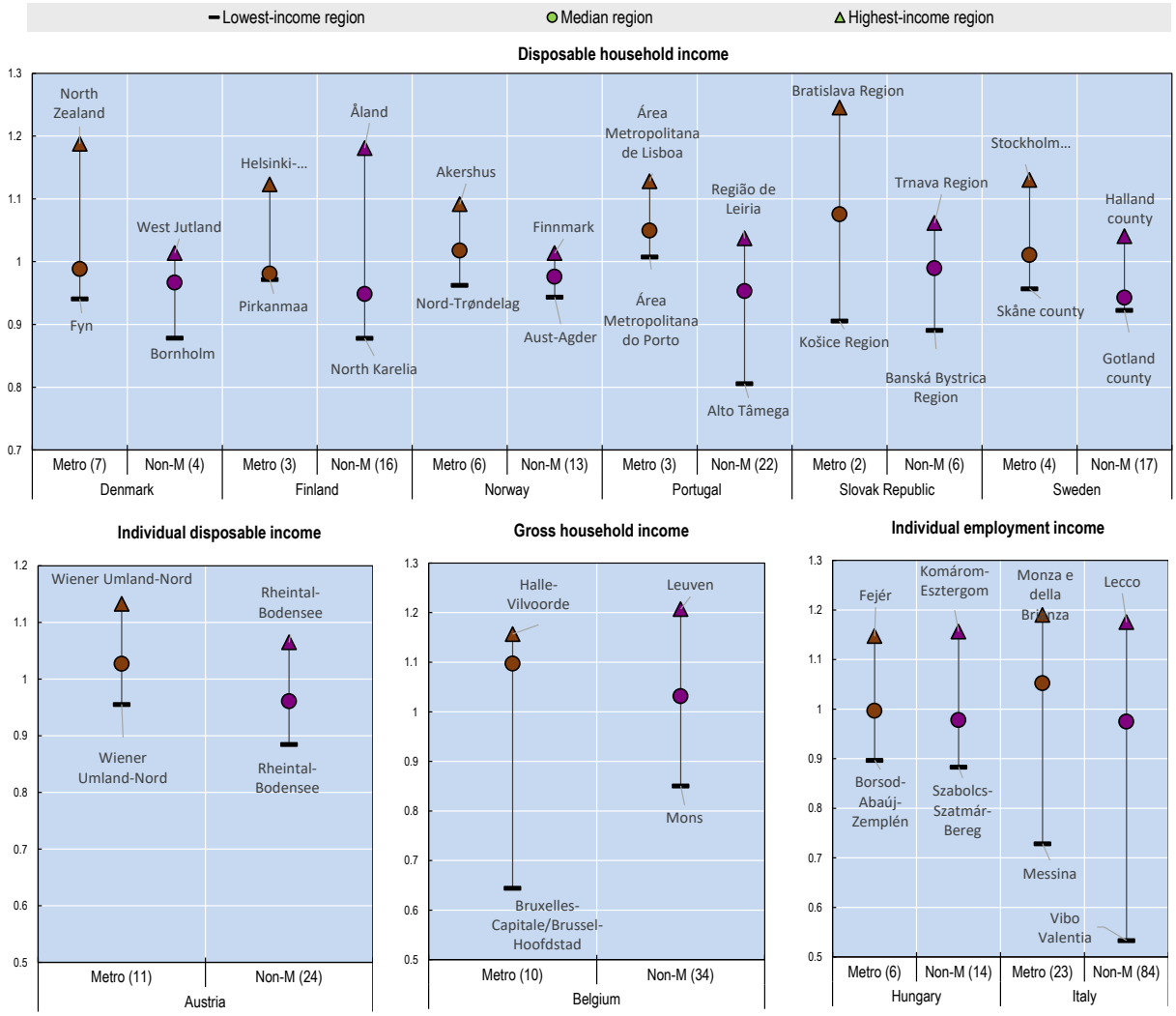
Source: OECD calculations based on administrative income data

Click here to download chart.

Chart 3.3

Median incomes are higher in metropolitan areas, but the regional disparities within these areas are much larger

Regional median incomes for high-and low-income regions by degree of urbanisation, expressed relative to national median income, TL3/NUTS 3 level, 2017/18



Note: Note: "P25" and "P75" give the relative median incomes for the regions at the 25th and 75th percentile of the regional income distribution by degree of urbanisation. Number of TL3 regions by degree of urbanisation listed in brackets behind the country name. TL3 regions are classified as metropolitan if more than half of their population lives in a functional urban area of at least 250 000 inhabitants, and as non-metropolitan otherwise

Source: OECD calculations based on administrative income data.

Click here to download chart.

3. The impact of COVID-19 and the regional reaction to the shock

3.1. The categorization of workers at territorial level ([207])

This Section explores the distribution of workers by the degree of urbanisation depending on the critical nature and the degree of "teleworkability" of their occupation ([208]). First, as in chapter 2, the following four categories of occupations were identified:

i. Not teleworkable, high social interaction;

ii. Not teleworkable, low social interaction;

iii. Teleworkable, high social interaction;

iv. Teleworkable, low social interaction.

Second, the occupations were characterised as critical or non-critical, according to the list of critical occupations provided by the "Commission Communication on Guidelines concerning the exercise of the free movement of workers during COVID-19 outbreak". *Figure 3.6* and *Figure 3.7* provide a snapshot of the distribution of employment across

([207]) The territorial classification adopted in this section is based on the distinction by degree of urbanisation adopted in the EU-LFS, which captures the character of the local administrative unit where the individual lives. These units are classified as either "urban centres", "urban clusters" or "rural grid cells", depending on their population densities. In more detail, cities (or "densely populated areas") are territorial units where at least 50% of the population live in urban centres; towns and suburbs (or "intermediate areas") are territorial units where at least 50% of the population live in urban clusters, but are not 'cities'; rural areas (or "thinly populated areas") are territorial units where at least 50% of the population live in rural grid cells.

([208]) A different approach was used in the Labour Market and Wage Developments Report (2020a) to identify different occupations vulnerable to social distancing measures on the basis of the characteristics of tasks involved.

these categories and between areas with different degrees of urbanisation in the year before the pandemic.

Workers in critical and teleworkable occupations are located more in urban areas than in rural ones ([209]). *Figure 3.6* provides an overview of the proportion of critical and non-critical occupations by degree of urbanisation, and based on the four categories described above. For both critical and non-critical occupations, the teleworkable ones are mostly located in urban areas, regardless of their degree of social interaction (lower part of top and bottom panels, *Figure 3.6*). Conversely, for critical occupations, those that are not teleworkable and requiring low social interactions are mostly concentrated in rural areas (top panel, *Figure 3.6*). Similarly, *Figure 3.7* illustrates the distribution of employment across different occupational groups (defined at ISCO 2-digit level) in 2019. Each occupation is represented by three markers whose dimensions are proportional to the number of individuals employed in that occupation in 2019, in the three types of areas, namely cities, towns and suburbs, and rural areas, respectively ([210]). The top and bottom panels display, respectively, the critical and non-critical occupations.

The distribution of teleworkable occupations strongly depends on the degree of urbanisation, especially for critical ones. Among critical occupations (top panel *Figure 3.7*), those that are technically teleworkable display a much larger size in urban areas as opposed to rural ones. A similar pattern applies to occupations that are not teleworkable and require high social interaction, such as health professionals and protective service workers (e.g. firefighters and police officers) ([211]). For non-critical occupations, the dimension of the markers do not vary significantly by degree of urbanisation, as illustrated by the near overlap of the red, orange, and yellow markers for almost all occupations (bottom panel, *Figure 3.7*).

The impact exerted by the pandemic on employment varied greatly across occupational groups. Especially in the first phases when strict lockdown measures were adopted, non-teleworkable and non-critical occupations were deeply affected compared with teleworkable and critical ones. However, the employment impact of the crisis depended not only on the level of technical teleworkability, requisite social interaction, and the critical nature of the occupation, but also on the degree of urbanisation of the areas where individuals live.

Urban areas host both substantial shares of high-skilled workers with relatively secure jobs and teleworking options, but also many workers in face-to-face service jobs that remain at risk as they are contact-intensive and cannot switch to telework. Service workers in tourism-intensive areas that have faced unprecedented decreases in visitor numbers are usually in occupations with high social interactions that are not teleworkable.

([209]) Occupations were divided into critical and non-critical as in Chapter 2. Workers exercising critical occupations are identified as those working in the following ISCO 2- and 3-digit categories: 213 Life science professionals; 214 Engineering professionals (excluding electrotechnology); 215 Electrotechnology engineers; 22 Health professionals; 23 Teaching professionals; 25 Information and communications technology professionals; 31 Science and engineering associate professionals; 32 Health associate professionals (except 323 Traditional and complementary medicine associate professionals); 35 Information and communications technicians; 53 Personal care workers; 61 Market-oriented skilled agricultural workers; 62 Market-oriented skilled forestry, fishery and hunting workers; 63 Subsistence farmers, fishers, hunters and gatherers; 751 Food processing and related trades workers; 816 Food and related products machine operators; 83 Drivers and mobile plant operators; 91 Cleaners and helpers; 92 Agricultural, forestry and fishery labourers; 93 Labourers in mining, construction, manufacturing and transport; 96 Refuse workers and other elementary workers. The list provided in the Communication was enriched to include occupations that, although beyond the scope of the Communication, might be considered critical. Finally, occupations were ranked on the basis of technical teleworkability and social interaction indexes, as defined in Sostero et al. (2020).

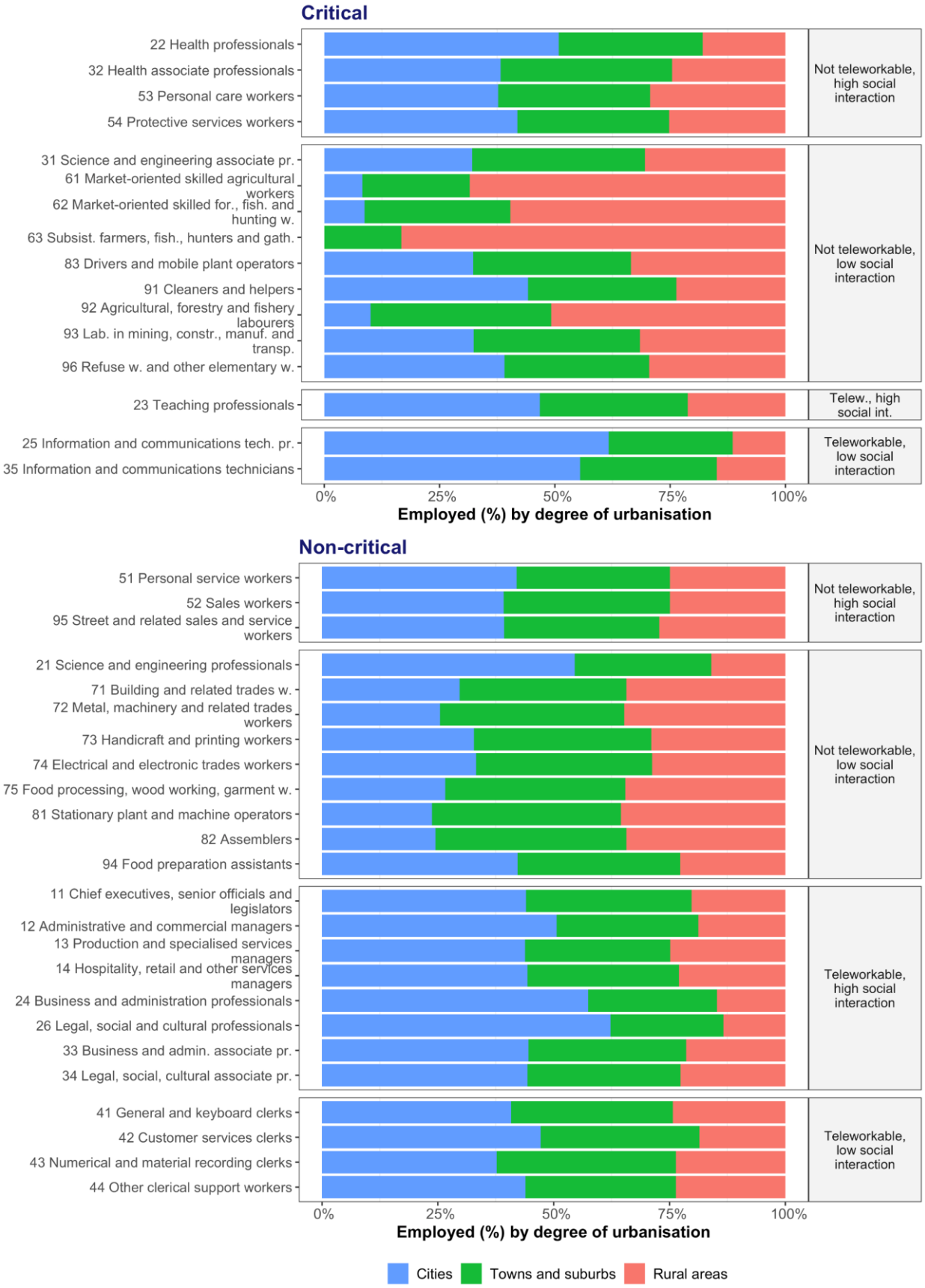
([210]) These occupations include, for instance, information and communication technology professionals and teaching professionals. The grey lines on the y and x axes represent the thresholds of 0.4 and 0.5 of the technical teleworkability and social interaction indexes.

([211]) Occupations in the bottom right-hand quarters are below the 0.4 threshold of the technical teleworkability index, and above the 0.5 threshold of the social interaction index.

Figure 3.6

Employment in teleworkable occupations mainly concentrated in cities or towns and suburbs

Critical and non-critical occupations by degree of urbanisation, 2019, EU27.



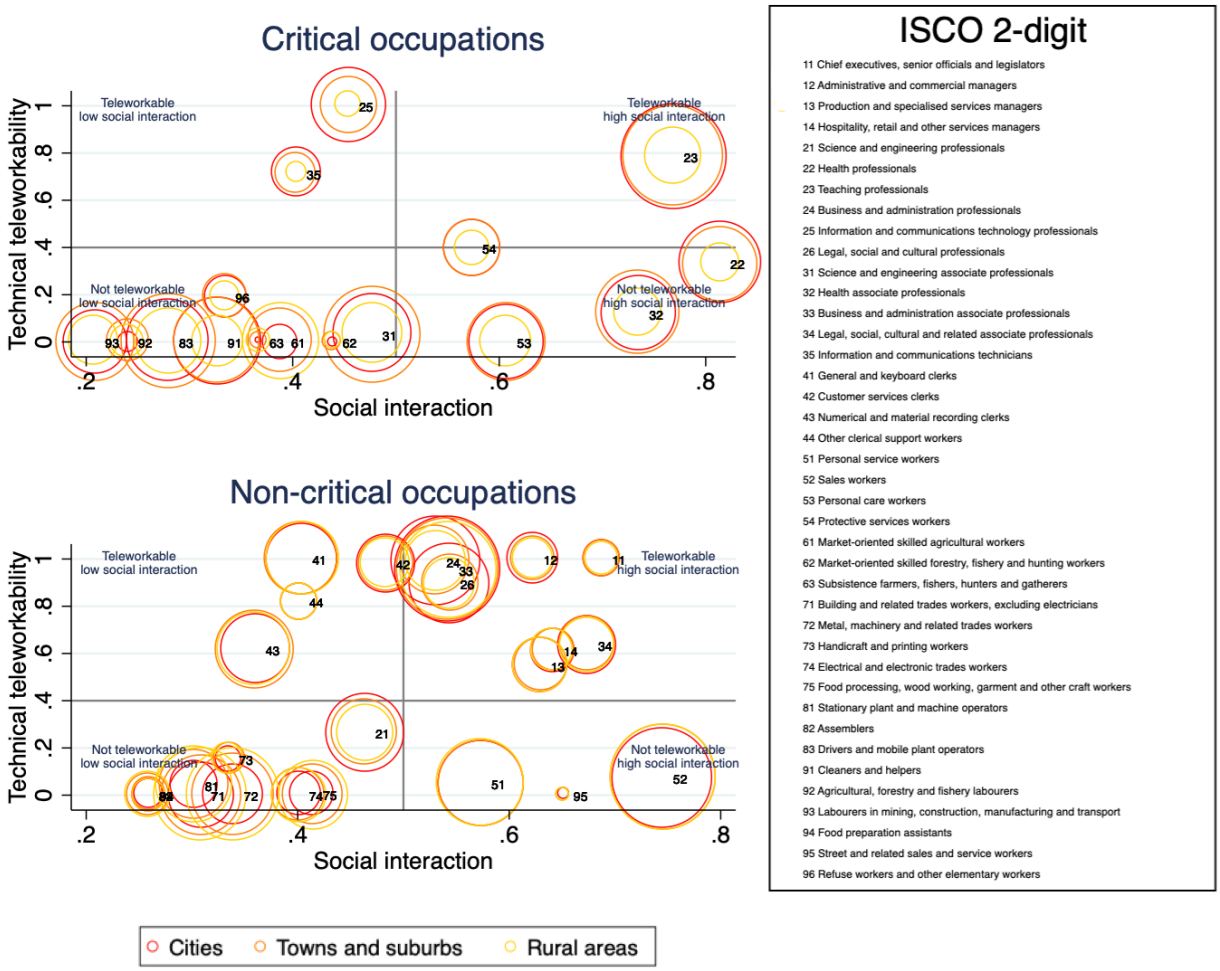
Source: Calculations by the European Commission's Joint Research Centre based on a Eurostat special extraction on EU-LFS data for 2019 and on indexes produced in Sostero et al. (2020).

Click here to download figure.

Figure 3.7

Critical and teleworkable occupations are more represented in urban areas

Distribution of employment across different occupational groups by degree of urbanisation, 2019, EU27



Note: the three different colours (with the darkness proportional to the population density) allow checking whether the size of each occupation group varies by degree of urbanisation.

Source: Calculations by the European Commission's Joint Research Centre based on a Eurostat special extraction on EU-LFS data for 2019 and on indexes produced in Sostero et al. (2020).

Click here to download figure.

Non-teleworkable occupations suffered marked losses in employment declining heavily in rural areas and cities compared with towns and suburbs (*Table 3.1*). Among those occupations, rural areas saw severe drops in the number of employed, irrespective of the level of social interaction required on the job. Similar patterns are found for both critical and non-critical occupations in this group. Employment in non-teleworkable occupations in towns and suburbs was the least affected.

Teleworkable occupations suffered less than non-teleworkable ones, but the reduction of employed in these occupations seems higher in rural areas. Notably, the reduction in the number of employed in teleworkable occupations requiring low social interaction was negative and consistent in rural areas (-8% and -5.9% in 2020 Q2 and Q4, respectively, and -4.4% annually), while employment for this occupational category even increased in urban areas. Finally, teleworkable occupations with high social interaction, that generally saw an increase in employment, recorded a more marked increase in the number of employed in cities and towns, while it remained stable in rural ones.

Finally, groups such as the young, low-educated workers and, in some countries, women have been the most affected by the COVID-19 crisis from an employment perspective ([212]). These groups have been affected to different degrees in rural and urban areas; preliminary studies find that the drop in employment for the young and the low-educated was relatively higher in cities ([213]).

([212]) Although evidence is still scarce, cross-border and frontier workers are likely to have been particularly at risk from an employment perspective due to border closure and other limitations to people and workers' freedom of movement.

([213]) Königs and Vindics (forthcoming).

Table 3.1

Job losses are more concentrated in rural areas across all employment categories

Employment by occupational category, thousands of workers, degree of urbanisation, EU26

Categories / Critical occupations	Degree of urbanisation	Employed (000)		Change (%)		
		2019	2020	Q2	Q4	Annual
Total	Cities	61,022	60,528	-3	-0.5	-0.8
	Towns and suburbs	47,055	47,249	0	1.1	0.4
	Rural areas	41,373	39,738	-6	-5.2	-4
	Total	149,970	147,999	-2.8	-1.2	-1.3
Not teleworkable, high social interaction	Cities	15,443	15,032	-4.4	-3.3	-2.7
	Towns and suburbs	11,663	11,518	-2.1	-1	-1.2
	Rural areas	9,365	8,913	-6.7	-7.6	-4.8
	Total	36,590	35,574	-4.2	-3.6	-2.8
Not teleworkable, low social interaction	Cities	19,781	19,193	-5.9	-3	-3
	Towns and suburbs	20,410	20,320	-1.2	0.2	-0.4
	Rural areas	21,951	20,941	-6.2	-5.6	-4.6
	Total	62,377	60,688	-4.3	-2.8	-2.7
Teleworkable, high social interaction	Cities	15,258	15,420	-0.7	2.1	1.1
	Towns and suburbs	8,987	9,156	2.4	2.1	1.9
	Rural areas	6,221	6,218	-2.6	0.3	-0.1
	Total	30,576	30,898	-0.1	1.7	1.1
Teleworkable, low social interaction	Cities	10,541	10,884	1.2	4.4	3.3
	Towns and suburbs	5,996	6,255	4.5	7	4.3
	Rural areas	3,836	3,667	-8	-5.9	-4.4
	Total	20,427	20,838	0.5	3.3	2
Critical	Cities	24,333	24,222	-2.4	0.3	-0.5
	Towns and suburbs	19,449	19,668	0.8	2.3	1.1
	Rural areas	19,733	19,133	-4.2	-4.5	-3
	Total	63,717	63,202	-1.9	-0.6	-0.8
Non-critical	Cities	36,690	36,306	-3.4	-1.1	-1.1
	Towns and suburbs	27,606	27,581	-0.5	0.3	-0.1
	Rural areas	21,640	20,605	-7.6	-5.8	-4.8
	Total	86,253	84,797	-3.4	-1.7	-1.7

Note: The extraction does not taken into account Germany due to data reliability issues. Moreover, caution in the interpretation is needed as a shift in the classification of Italian municipalities that can affect the degree of urbanisation in Italy was implemented in 2020 Q2.

Source: Calculations by the European Commission's Joint Research Centre based on a Eurostat special extraction on EU-LFS data for 2019 and on indexes produced in Sostero et al. (2020).

Click here to download table.

3.2. The impact of COVID-19 on the regional economies ([214])

The COVID-19 pandemic has caused an unprecedented health crisis worldwide resulting in a severe recession. This was reflected also in negative sentiment as shown by *Box 3.2* ([215]).

The availability of data at territorial level face a significant delay. In this context, the RHOMOLO ([216]) model has been used to simulate the impact of the

([214]) This section is based on the contribution provided by Andrea Conte, Stylianos Sakkas and Simone Salotti (European Commission's Joint Research Centre).

([215]) The results presented in this box are an extension of van der Wielen and Barrios (2021) provided by the European Commission's Joint Research Centre.

([216]) A detailed description of the RHOMOLO model can be found in Lecca et al. (2018).

crisis at regional level, using updated information at the national level contained in the Spring 2021 European Economy Forecast ([217]), as well as in national account databases ([218]). The model relies on a combination of supply and demand shocks in order to assess the effects of the pandemic, first at the national level and in turn at the regional level (see the *Box 3.3*).

([217]) The European Economic Forecast is produced by Directorate-General for Economic and Financial Affairs.

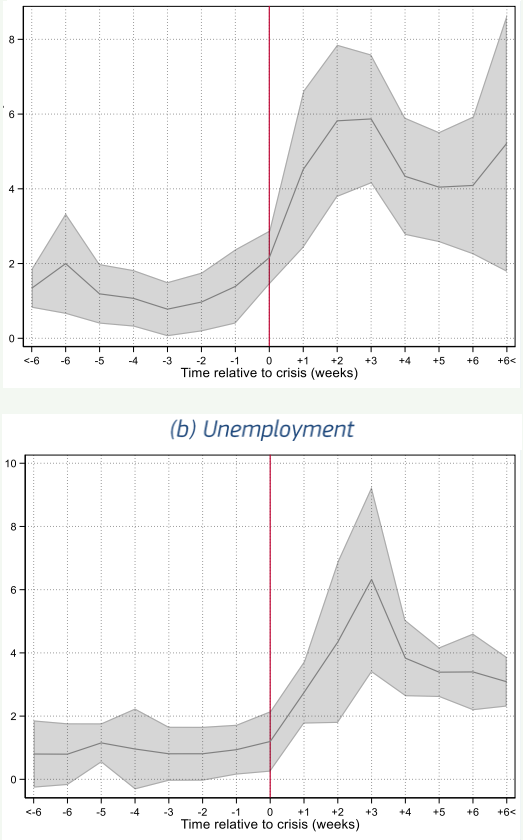
([218]) AMECO.

Box 3.2: Economic sentiment during the COVID pandemic: evidence for EU regions

Economic sentiment ([1]) captures economic agents' views of future economic developments, which at the same time may drive the economy because they influence agents' decisions today. These views may reflect rational arguments and facts but also a mood of optimism or pessimism ([2]).

One way of measuring sentiment is using Google Trends data ([3]). Google search data are available in near real-time, in various frequencies up to the daily level ([4]), and have been shown to track well variables such as (un)employment, consumer behaviour and inflation. This box summarizes the results of a EU panel covering business cycle, labour market and consumption related search queries for the days in January through April 2020 ([5]). Internet search data are available in real-time, allowing policymakers to observe shifts as they arise. Furthermore, these non-traditional data have been show to track well actual unemployment and consumption, and possibly, cover aspects of consumer sentiment not captured by traditional surveys.

Figure 1: Impact on search intensity in weeks around the start of the pandemic – EU countries



Internet search data document a substantial change in people's economic sentiment for the worse in the months following the coronavirus outbreak ([6]). As the pandemic hits European countries, a significant increase in recession-related searches is observed (see Figure 1). People actively googled more for information on recession, unemployment and unemployment benefit related terms. This was a troublesome harbinger, since real GDP growth and real growth in consumption and imports were found to be significantly lower in quarters following increases in such searches ([7]). Moreover, the ensuing shift in sentiment was significantly more outspoken in those EU countries hit hardest in economic terms. As these countries labour market conditions were often already less favourable at the onset of the crisis, there is a risk of a widening gap between EU Member States.

Note: The plot shows the marginal impact on the intensity of recession and unemployment related queries (and their 95% confidence intervals) by week, relative to the arrival of the virus in a country (>3 cases), as estimated by a difference-in-difference model. The model is estimated on the daily normalised series for the EU, includes panel and time effects and uses cluster-robust standard errors. Source: van der Wielen and Barrios (2021), European Commission's Joint Research Center

([1]) The results presented in this box are an extension of van der Wielen and Barrios (2021).

([2]) Nowzohour and Stracca, 2020, page 691.

([3]) The Commission traditonal economic sentiment indicators are based on the Business & Consumer Surveys. https://ec.europa.eu/info/business-economy-euro/indicators-statistics/economic-databases/business-and-consumer-surveys_en

([4]) The European Commission's Economic Sentiment Indicator is available at the end of each month.

([5]) For each query, the Google Trends platform generates a measure of search intensity scaled from 0 to 100, with 100 representing the highest proportion among the queried terms within a selected region and time frame. Seven-day moving averages are used to rid the series of day of week effects. In addition, the search intensity covered by the series is normalised using the mean search intensity prior to the surge of the coronavirus in each country.

([6]) van der Wielen and Barrios (2021) also observe a significant, coinciding slowdown in labour markets and (durable) consumption. The shift in economic sentiment during the first wave of the COVID-19 pandemic is similar or more intense than during the Great Recession of 2007-2009. This is especially the case for unemployment-related sentiment. This conclusion is in line with survey-based sentiment indicators for the EU. For example, in April 2020, the Economic Sentiment Indicator reached its lowest value on record.

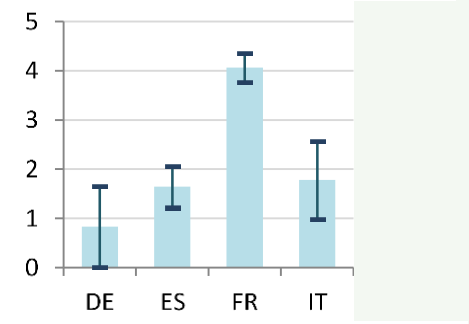
([7]) Fetzer et al., 2020.

(Continued on the next page)

Box (continued)

The EU-panel is complemented with regional, sentiment-based internet searches in the four largest EU economies to highlight important inter-regional differences ([8]). The four large economies show substantial differences in terms of unemployment-related sentiment following the inception of the pandemic (Figure 2). While unemployment-related searches are significantly higher for each of the four Member States, the increase in search intensity (relative to the baseline) is substantially higher for France. Smaller (i.e. about half), yet similar patterns can be observed when focussing on changes in unemployment benefit searches only.

Figure 2: Change in unemployment searches upon arrival of the pandemic



Note: The plot shows the factor of change in the search intensity, relative to the mean search intensity before the COVID-19 outbreak (normalized to 1) and its 95% confidence interval. The effect is estimated using a panel fixed effects model including panel and time fixed effects and cluster-robust standard errors.

Source: van der Wielen and Barrios (2021), European Commission's Joint Research Center

The shift in economic sentiment at the national level show substantial differences across regions (Figure 3). Looking at the relative search intensity in the two months following the outbreak of the pandemic, the number of negative sentiment-related searches surges in each region. Some regions, however, show markedly larger shifts in their sentiment. For example, in Spain, unemployment queries in Murcia increased by 44% following the outbreak of the pandemic, but more than doubled in the Community of Madrid. Similar high surges in unemployment related searches are notable in the regions surrounding the French and German capitals.

While there is no one-to-one relationship between all the indicators of a region, some trends do appear ([9]). The German regions of Mecklenburg-Vorpommern, Saarland and Bremen, for instance, consistently are among the regions with the highest relative intensity of searches related to recession, unemployment, unemployment benefits and short-time work schemes in Germany. It is noteworthy that these three regions also portrayed regional unemployment rates above the German average before the pandemic. For France, on the other hand, Corsica stands out with the highest relative increase in terms of unemployment searches and second highest increase in unemployment benefit queries. For Italy, the regions of Trentino-South Tyrol, Umbria and Friuli-Venezia Giulia stand out.

Finally, the data show clear spikes in queries for specific wage compensation schemes, such as the Cassa Integrazione Guadagni (CIG) in Italy, Kurzarbietergeld in Germany and the ERTEs (*expedientes de regulación temporal de empleo*) in Spain. For example, the largest increases in relative search intensity of these terms are recorded in the highly tourism dependent Canary Islands. Moreover, for those Member States with short-time work schemes (STWs) in place before the pandemic, the increases in searches are substantially larger than those observed during the 2008 crisis. Nevertheless, the introduction or extension of STWs does not seem to have eased economic sentiment relative to countries without such schemes; although there is suggestive evidence that during the 2008 crisis countries with STWs in place had less unemployment-related concerns ([10]).

([8]) The regional panel covers Germany at NUTS 1 level and Spain, France and Italy at NUTS 2 level.

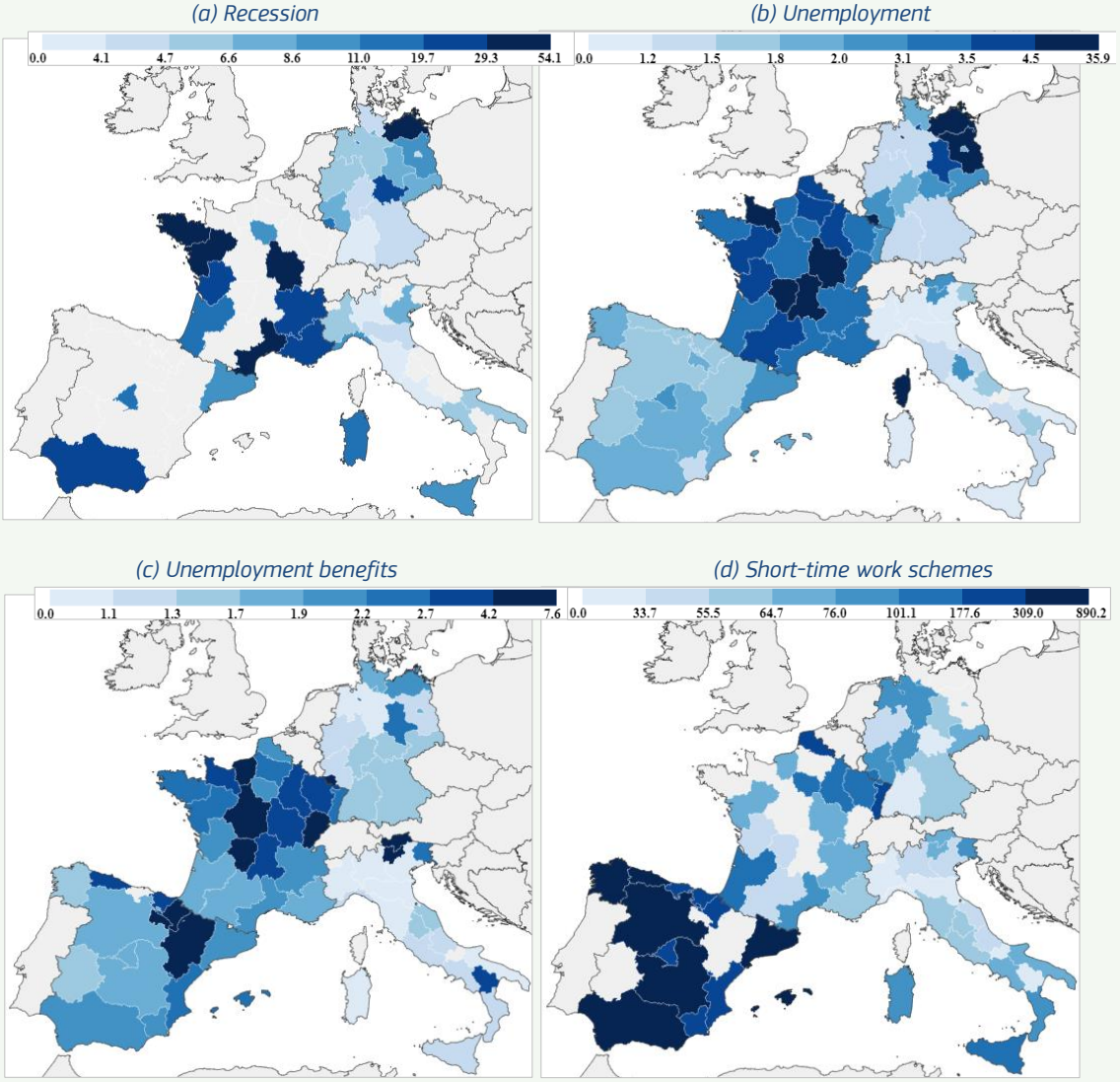
([9]) The relative differences in intensity of the health crisis do not manage explain all regional variation. For example, in Spain, while recession-related searches increased tenfold in the relatively hard hit Madrid and Catalonia during the first wave, even stronger concerns were recorded for Andalusia (less hit by the first wave of the health crisis).

([10]) van der Wielen and Barrios (2021).

(Continued on the next page)

Box (continued)

Figure 3: Regional post-COVID search intensity relative to the intensity before the COVID-19 outbreak



Note: The figure reports the search intensity in the two months following the outbreak of the pandemic relative to the mean search intensity before the COVID-19 outbreak (normalized to 1). The regional panel covers Germany at NUTS 1 level and Spain, France and Italy at NUTS 2 level. Regions are grouped into different colours by quantiles. The Italian regions of Bolzano and Trentino are pooled due to data limitations. Regions with insufficient observations are excluded.

Source: European Commission's Joint Research Center

References

Fetzer, T., Hensel, L., Hermle, J., and Roth, C. (2020). Coronavirus perceptions and economic anxiety. *The Review of Economics and Statistics*, forthcoming, https://doi.org/10.1162/rest_a_00946.

Nowzohour, L., and Stracca, L. (2020). More than a feeling: Confidence, uncertainty, and macroeconomic fluctuations. *Journal of Economic Surveys*, 34(4), 691–726.

van der Wielen, W. and Barrios, S. (2021). Economic sentiment during the COVID pandemic: Evidence from search behaviour in the EU, *Journal of Economics and Business*, forthcoming, https://doi.org/10.1016/j.jeconbus.2020.105970.

The RHOMOLO model simulates the impact of COVID-19 at regional level. The simulation takes into account the various lockdown measures implemented by the Member States, which are factored in the European Economy Forecast.

The spatial and sectoral configuration of the model allows assessment of the territorial impact of the crisis. The initial focus is on the EU-wide impact. *Figure 3.8* reports the country-level results, where 2020 GDP is reported as percentage change from 2019. The country-level results fall close to the national GDP growth figures for 2020 as reported in the Spring 2021 European Economic Forecast. They show an increasing intensity of the impact going from North to South. The added value of RHOMOLO lies in its regional dimension. As *Figure 3.9* shows, the different initial endowments and economic characteristics of the regions lead a heterogeneous response to the negative shocks designed to mimic the effects of the COVID-19 crisis.

There is considerable within-country variation in terms of GDP impact of the COVID-19 shocks. The uneven effects are particularly evident in countries such as Spain, Italy, France, and Finland, where the map shows a broad range of colours, representing the different magnitudes of the impact (*Figure 3.9*).

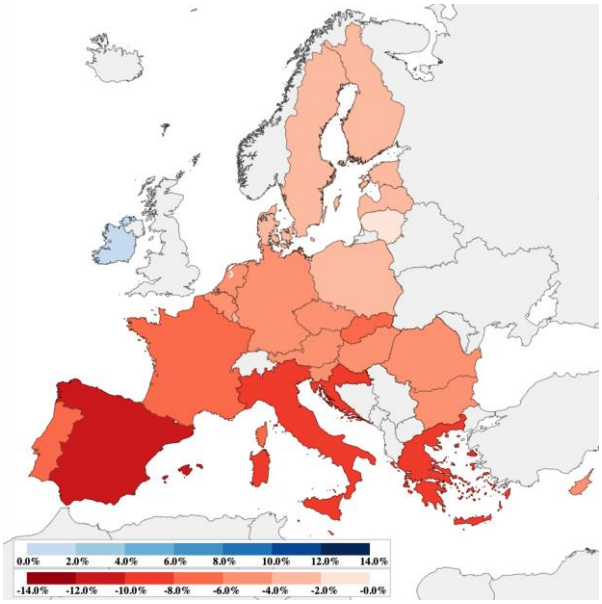
The simulated impact of the pandemic on regional GDP is on average (unweighted) -5.66%, with a standard deviation of 2.53. At the same time, the model estimates that employment declines by -5.02% (which is higher that the one predicted by the Spring 2021 European Economic Forecast), with a standard deviation of 2.62, implying a reasonable variation in results across the EU. Looking at the employment impact, it is important to keep in mind that no employment support policies such as short-term work schemes have been explicitly modelled. In other words, compared to real outcome, employment would have fallen far more without the public intervention.

Across most of the EU, the policy reaction alleviated the adverse effects of the crisis.

Figure 3.8

Following COVID-19 shocks, between-countries differences in GDP impact are significant

GDP impact at national level in 2020



Source: European Commission's Joint Research Centre

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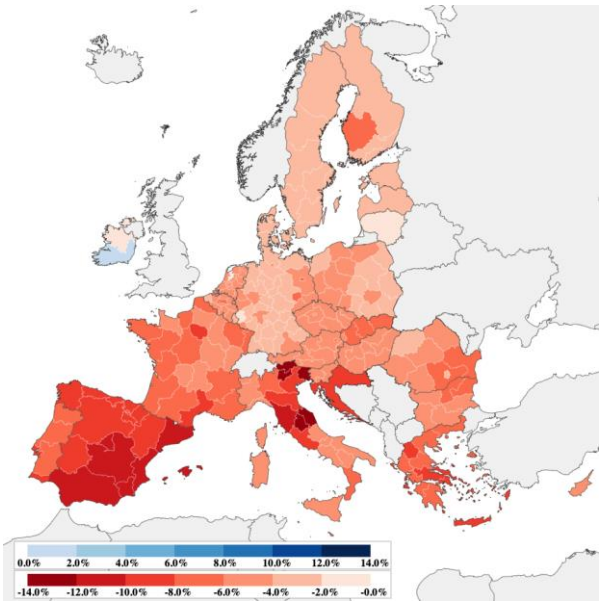
Figure 3.9

Within-country variation in terms of GDP impact of the COVID-19 shocks is considerable.

GDP impact at regional NUTS 2 level in 2020



Source: European Commission's Joint Research Centre

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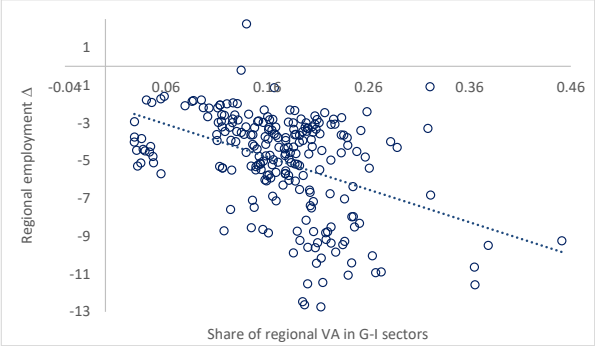
As expected, GDP losses are highly correlated to declines in employment. In order to further explore the impact of the current crisis on employment, the results of the model provide insights on what drives GDP and employment losses related to the COVID-19 crisis. *Chart 3.4* plots the changes in regional employment (on the vertical axis) against the VA share in sectors G-I (Wholesale and retail trade, transportation, and accommodation).

Chart 3.4

Regions based on tourism-related services sectors had bigger employment losses

Correlation between changes in regional employment and share of VA in sectors G-I (2020)



Source: European Commission's Joint Research Centre

Click here to download chart.

This correlation shows that the larger the regional share of VA in service sectors providing accommodation and physical retail, the bigger the loss in employment. This exercise investigates the economic impact of the COVID-19-related lockdown measures (national averages), where the territorial effects vary in terms of magnitude due to the specific characteristics of the various regional economies of the EU. The combination of national adverse shocks and the specific characteristics of the various regional economies of the EU results in wide regional heterogeneity in the GDP impact of the crisis. For instance, regions where jobs and VA are largely concentrated in tourism-related services sectors will experience larger job disruptions. Moreover, regional trade integration and sector specialisation may be conducive to substantial divergent effects of apparently similar neighbouring regions. The results show that the COVID-19 crisis exerts uneven effects across EU regions. This has important implications for the EU policymakers designing recovery plans and measures, notably to support the economies that were hit hard by the economic shocks related to the COVID-19 pandemic and the resulting lockdown measures.

3.3. Determinants of regional vulnerability to the COVID-19 shock

The analysis investigates the role of structural characteristics of (NUTS 2) regions and how these relate to the impact of shocks on regional economies and job markets. The analysis looks beyond the general dependence on retail and tourism, which became evident during the Covid-19 crisis. The EU's NUTS 2 regions are clustered around 26 variables describing the regions' structural characteristics (see *Table 3.2*), which have been reduced to six major **structural (principal) components** (factors). The aim of this analysis is to identify the core structural characteristics of a region, which make on the one hand the economy more or less vulnerable to the major adverse shock that occurred in 2020 and 2021 and on the other hand the labour market more or less resilient with respect to a shock (of a given magnitude).

Table 3.2 ([219]) shows the respective correlations between the factors and the original variables, also called 'factor loadings' ([220]). On this basis, the six factors can be characterised as follows:

Higher incomes through good (labour) earnings: this factor is positively correlated with regional GDP per capita, earnings, and household income. Additionally, in regions scoring high on this factor have many well-qualified people work in fast-growing health and care sectors and/or as (well-paid) scientists and other highly-skilled professionals.

Highly-[well] performing industrial labour markets: regions scoring high on this factor exhibit high employment rates and low unemployment. NEET ([221]) rates tend to be lower and the significance of manufacturing is higher in these regions.

Centres of economic output with large labour markets: this factor is linked to the levels of regional GDP and employment. These variables are included to control for the size of a region's economy and its labour market.

Human capital driving investment and growth: regions scoring high on this factor tend to have more workers in innovative technology- and knowledge-intensive sectors, favouring economic growth.

Weak[er] education outcomes: the factor is negatively correlated with the share of post-secondary and highly educated people, while the number of school-dropouts is higher.

Dependence on tourism: the economies of regions scoring high on this factor feature high reliance on the tourism sector, as measured by nights spent in tourist accommodations.

([219]) The factor extraction makes use of these correlations and is done so as to maximise the correlation of a factor with certain original variables while minimising the correlation with other variables.

([220]) Factor Loadings below 0.25 are suppressed.

([221]) NEET: Neither in Employment or in Education or Training.

Box 3.3: RHOMOLO model

The simulations are carried out using RHOMOLO, a numerical-spatial general equilibrium model based on regional account data and a set of estimated bilateral trade flows and intermediate shipments that are consistent with national accounts. The model covers EU NUTS 2 regions disaggregating all economies into 10 NACE Rev.2 sectors ([1]).

Following standard practice in macroeconomic modelling, a scenario is built to mimic the effects of the COVID-19 crisis by introducing multiple adverse shocks at the same time ([2]). Initially, thanks to the availability of country-specific information, all the shocks introduced in the model have been calibrated to reflect specific national economic conditions in terms of GDP changes as depicted by the latest available macroeconomic data for 2020. In particular, the same shock is applied to all regions of a country. The model framework assumes that the macroeconomic transmission channels associated with the COVID-19 pandemic are both of demand and supply nature, as summarised in Table 1.

Table 1 - Scenario shocks in RHOMOLO in 2020 (EU average)

Labour supply shock
1.9% reduction in workforce
Demand shocks
The risk premium increases by 200 bps (uncertainty shock)
Reduction of private consumption in the following sectors: G-I (9.4%); and R-U (-5.7%)
Reduction of exports to the rest of the world (-9.5%)

([1]) For additional details on this simulation exercise, see the TERRITORIAL DEVELOPMENT INSIGHTS SERIES - JRC125536, July 2021 (European Commission's JRC).

([2]) One important difference with the previous RHOMOLO analysis on the COVID-19 crisis (Conte et al., 2020) lies in the asymmetric and country-specific nature of the shocks.

Table 3.2

Factor analysis: The principal components (factors) explaining regional structural characteristics

Six factors extracted from 26 original variables related to regional economy, labour market structure, skills & education, dependence on tourism, transport; 2019 or last available year – factor loadings

Original variables	Six rotated components						Variance explained by factors (*)
	Higher incomes through good (labour) earnings	**Highly-[well] performing industrial labour markets**	**Centres of economic output with large labour markets**	**Human capital driving investment and growth**	**Weaker education outcomes**	**Dependence on tourism**	
nominal GDP per capita	0.31						82%
wage level (labour compensation per employee)	0.37						89%
household income	0.34						92%
employment : NACE M and N (professionals, scientific etc)	0.27						79%
employment: NACE O to Q (administration, health & care	0.32						73%
average hours of work in main job	-0.30						74%
participation in LLL	0.31						67%
employment rate by sex, age		0.38					84%
unemployment rates by sex, age		-0.44					85%
NEET rates		-0.34					81%
ratio employees, Manufacturing/total		0.39					84%
nominal GDP (abs.)			0.61				92%
employment (abs.)			0.66				92%
real growth rates of Value Added				0.61			70%
employment in technology and knowledge-intensive sectors				0.48			77%
gross fixed capital formation				0.27			42%
tertiary education				0.28	-0.34		82%
share medium education		0.36			-0.27		77%
early school leavers		-0.31			0.43		75%
victims in road accidents							73%
transport: Density of lorries (no. of lorries per EUR of GDP)							79%
nights spent at tourist accommod. Establish. – hotels						0.69	78%
capacity of collective tourist accommod.: Number of hotels						0.48	47%
car density per inhabitant						0.28	35%

Note: Factor loadings indicate the correlation between the extracted factor and the original variable. Factor loadings below 0.25 are suppressed.
(*) indicates the cross-regional differences in the original variables that can be explained by the six factors.

Source: Commission services based on Eurostat data (various sources).

In addition, the following two factors, provided by the RHOMOLO-model, are used to describe how the economy (GDP) and labour market (employment) would be affected by the COVID-19 crisis in 2020-2021:

Resilience to the COVID-19 shock (shock-resilience dimension): the average change of GDP during 2020 and 2021 as projected by the RHOMOLO model.

Labour market elasticity to the COVID-19 shock (labour-market performance dimension): the average GDP change, relative to the average change of employment during 2020 and 2021 as projected by RHOMOLO.

The correlations among all those factors shed a light on the regional determinants of the decline in economic activities during the crisis and the vulnerability of labour markets.

Labour markets that were performing well before the crisis are linked with lower risk of substantial economic decline. Each dot in the *Charts* represents one of the 240 NUTS 2 regions. The colour/shape of the dot signals the cluster to which each region has been assigned (see *Table 3.3* and Annex 3.2).

Table 3.3
The six clusters of regions

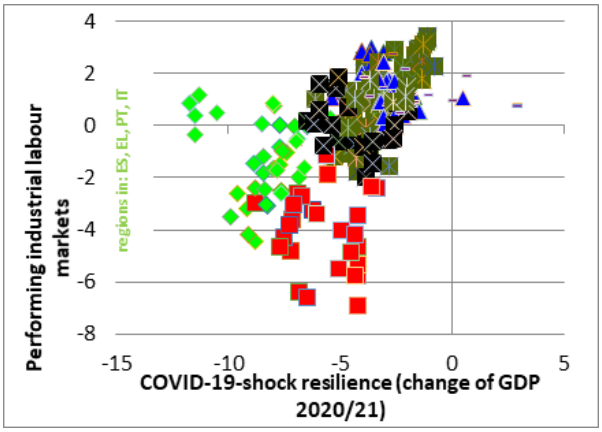
	Cluster	Typology	Characteristics
■	Southern 1	Structurally weak regions	Least performing labour markets, low availability of human capital, high labour market elasticity to adverse shocks
◆	Southern 2	Regions sectorally vulnerable to shocks	Lowest shock-resilience, high dependence on tourism
▲	Transition 1	Shock-resilient transition regions	Better shock resilience, performing labour market
■	Transition 2	Low income transition regions	Lowest earnings/incomes, smaller regions
■	Established	High income regions	High earnings/incomes, better shock-resilience
▬	Metropolitan	Highest income, lowest vulnerability	Highest earnings/incomes, high dependence on tourism, performing labour markets, larger regions, best availability of human capital, high knowledge-intensive growth, lowest incidence of poor educational outcomes

Note: There is no link between the two clusters labelled as "Transition" and the official definition of "regions in transition" adopted by the EU.

Source: Commission services based on Eurostat data (various sources)

Chart 3.5 plots the factor scores on the shock resilience dimension against the "well performing industrial labour markets" factor. There is an evident positive link between the two. The cluster represented by the red squares ('Southern 2') is characterised by particularly high structural unemployment before the COVID-19 crisis. These regions tend to exhibit both low resilience to the shock and weak labour-market performance.

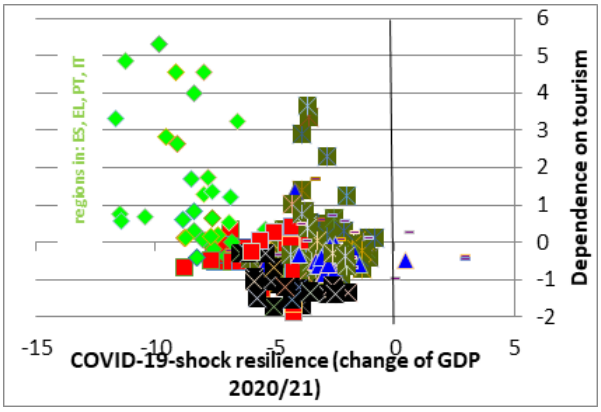
Chart 3.5
Economic shocks tend to be less profound in regions with structurally healthy labour markets
Performing labour markets and GDP resilience



Source: Commission services based on Eurostat data (various sources)
Click here to download chart.

Strong dependence on tourism increases exposure to this particular crisis. Green dots in *Chart 3.6* represent regions of the Southern cluster in Spain, Greece, Portugal and Italy, where the tourism sector plays a more dominant role than elsewhere.

Chart 3.6
Structural dependence on the tourism sector makes for high vulnerability to the COVID-19 shock
Tourism and GDP resilience



Source: Commission services based on Eurostat data (various sources)
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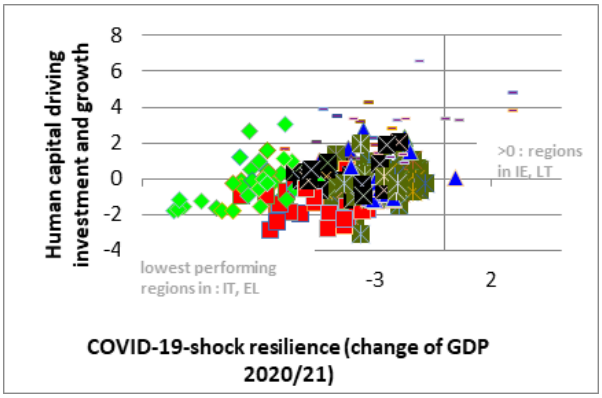
Resilience against the COVID-19-induced GDP decline is higher in innovative regions with larger shares of well-qualified workers. High human capital strengthens a region's innovative potential, enabling workers to engage in knowledge-intensive activities. Such regions tend to be more resistant to economic downturns (*Chart 3.7*).

Chart 3.7
Low-growth, low-human-capital regions tend to be more vulnerable to the COVID-19 shock
Human capital and GDP resilience



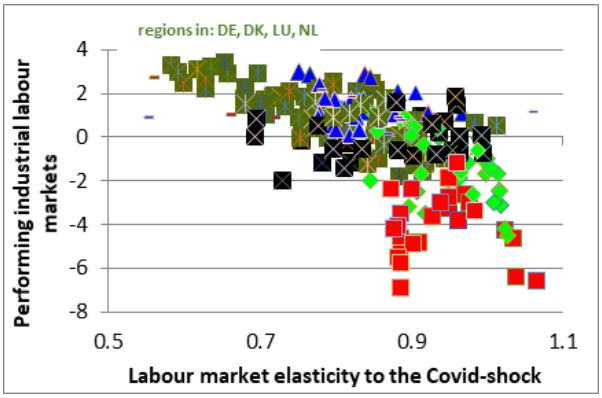
Source: Commission services based on Eurostat data (various sources)
Click here to download chart.

Well performing labour markets are better protected against the economic downturn. *Chart 3.8* shows a clear negative link between well-performing regional labour markets and regional GDP contraction (as simulated through the RHOMOLO model). In well performing regions in the centre of the EU, employment is relatively high with a significantly lower employment elasticity of the (negative) GDP change. That is, any given GDP change would lead to a lower reduction of employment in those regions. This is also due to the fact that the Member States where such regions tend to be located have comparably generous Short-Time Work Schemes in place. However, significant within-country variability across regions indicates that structural region-specific characteristics play a decisive role.

Chart 3.8

Structurally healthy regional labour markets are better protected against the COVID-19 shock

Performing labour markets and labour market resilience



Source: Commission services based on Eurostat data (various sources)

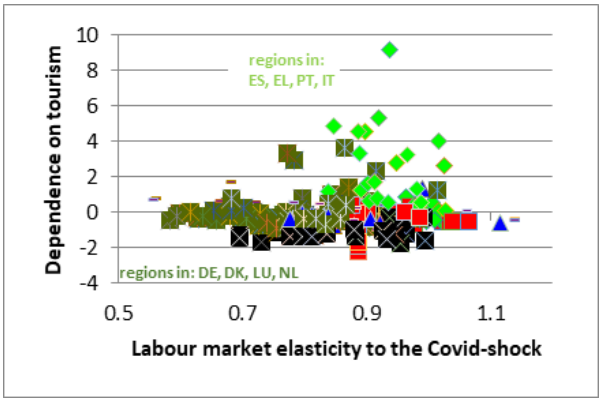
Click here to download chart.

Structural dependence on tourism increases the labour market reaction to the economic shock. The high dependence of the Southern European cluster (light green diamonds) on the tourism sector renders these regions more vulnerable to shocks. In addition, labour markets can be less well protected against the shock of a given magnitude (Chart 5).

Chart 3.9

Strong dependence on tourism reduces the effectiveness of labour-market shock absorbers

Tourism and labour market resilience



Source: Commission services based on Eurostat data (various sources)

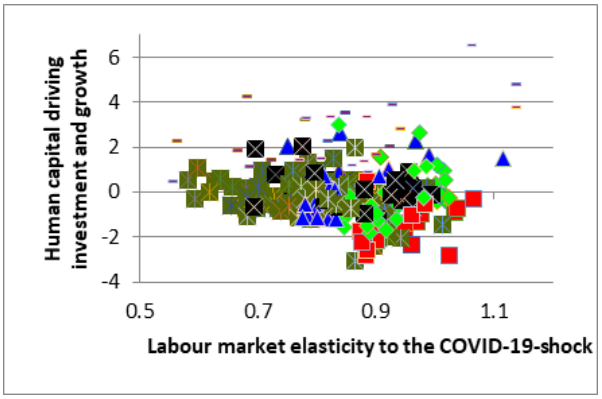
Click here to download chart.

The link between (pre-crisis) growth and a region's capacity to absorb economic shocks on the labour market is less clear. This finding reflects the fact that a number of Southern and Eastern European regions with high economic growth rates (typically reflecting innovative economies with highly-qualified workforces) were not able to safeguard their labour markets from the impact of the COVID-19-crisis.

Chart 3.10

No clear link between human capital and the impact of the shock on the labour market

Human capital and labour market resilience



Source: Commission services based on Eurostat data (various sources)

Click here to download chart.

3.4. The regional resilience and its drivers

Resilience is a concept, derived from biology, referring to the recovery capacity and adaptation properties of a system. It can be defined as the resource or capability of a system or entity to cope with complex contingencies due to internal and/or external shocks. In other words, it is the capacity to react under conditions of stress and change ([222]). From a more social perspective, the European Commission defines resilience as the ability to absorb shocks without harming sustainable societal well-being ([223]). From an operational point of view, it is possible to see the reaction of each region to the COVID-19 crisis, for example in terms of GDP change, as an indicator of its resilience ([224]). The use of GDP change to measure the resilience is a common practice in the literature of applied economics and extensively used, for example, in the assessment of the regional resilience following the 2008 crisis ([225]).

In this light, RHOMOLO simulated data (GDP) are used as proxy for the response to shocks and to measure the resilience of the regions. Then, an econometric model analyses the main drivers and factors behind these dynamics as the result of regional features and human capital-endowments, total factors productivity (ESDE 2019), quality of local institutions, and economic structure. RHOMOLO simulates regional GDP for 2020 in terms of percentage change from 2019. These estimations represent the proxy for the regional resilience and are used as dependent variable (Res) in our econometric model:

$$Res_r = \beta_0 + \beta_1 TFP_r + \beta_2 HC_r + \beta_3 QoG_r + \beta_4 gdp_r + \beta_5 KSI_r + \beta_6 Pop_r + e_r$$

([222]) Limnios et al. (2014).

([223]) Manca, Benczur and Giovannini, 2017 (European Commission's Joint Research Centre).

([224]) It is also correct to remark that the size of initial exogenous shock was not the same for all the regions.

([225]) Among others, see Annoni, de Dominicis (2019); and Neysan Khabirpour (2019).

where the subscript *r* stands for region, TFP is the total factor productivity, HC is the quality of human capital ([226]), R&D is the intensity of expenditure in research and development, QoG ([227]) is the quality of government as proxy for the quality of institutions ([228]). All the explicative variables are at pre-COVID time ([229]) and, representing structural conditions, are used in the form of a three-year average ([230]).

Productivity (TFP), the quality of human capital, R&D and the quality of local institutions are drivers contributing to reducing the impact of negative shocks, as shown in *Chart 3.11*. Notably, using standardised coefficients, it demonstrates that the impact of the quality of human capital is the highest. Those results suggest that:

- There is a strongly significant and positive link between the quality of human capital and regional resilience. Highly educated workers face shocks better than less educated ones.

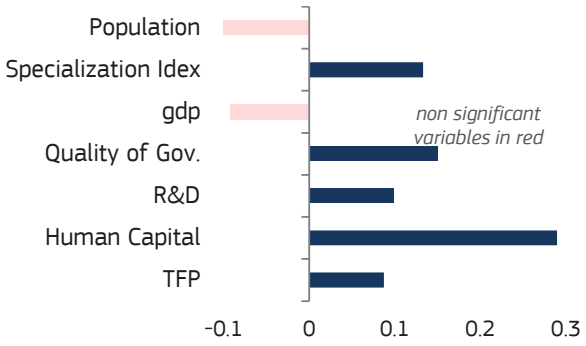
- High expenditures in R&D support regional resilience.

- Regional systems characterised by a high level of efficiency (TFP) provide a prompt reaction to a shock.

- High quality of local institutions ensures an effective reaction to the shocks and higher regional resilience.

- The industrial specialisation (KSI) in certain industries tends to increase the regional resilience.

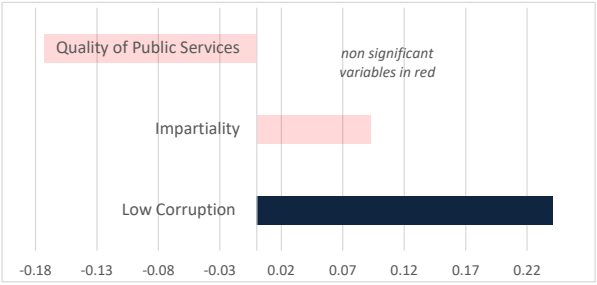
Chart 3.11
Human capital plays a key role
Drivers of regional resilience – standardized coefficients



Note: significance level 10%
Source: DG EMPL elaboration
Click here to download chart.

The disaggregation of Quality of Government into its three pillars highlights that low corruption in the administration contributes positively to regional resilience. The level of impartiality and the quality of public services appear to not be statistically significant in this analysis (*Chart 3.12*).

Chart 3.12
Low corruption in public services matters
The three pillars of Quality of Government– standardised coefficients



Note: significance level 10%
Source: DG EMPL elaboration
Click here to download chart.

Digitalisation also contributes positively to regional resilience. Introducing the degree of digitalisation (internet purchases abroad ([231]) and digital infrastructures ([232])) into the model confirms the results of the basic model and highlights the strategic role played by digital infrastructures (*Chart 3.13*). One might expect that the higher the internet purchases in other countries ([233]), the lower the regional resilience, given that the former represents the propensity of the residents to buy outside their region. The digital infrastructure variable is the proportion of households with broadband access (H_broadband), in order to take into account both the internet coverage and its quality, which have a positive impact on regional resilience.

([226]) Human capital is calculated computing the number of the schooling years based on the level of formal education according to the International Standard Classification of Education (ISCED) system.

([227]) QoG is a composite indicator calculated from survey data (using subjective information) has three main sub-components 1) absence of corruption; 2) the strength of 'the rule of law' (impartiality); and 3) government effectiveness, voice and accountability (quality of public services) as perceived by the respondents. For further details, see Charron, Dijkstra and Lapuente (2014); and Charron, Lapuente and Annoni (2019).

([228]) The econometric specification also controls for the regional differences in terms of GDP per capita (gdp), sectoral composition of the economy (KSI: Krugman specialization index) and population (Pop).

([229]) This also supports the assumption of exogeneity for the explicative variables with respect to the dependent variable.

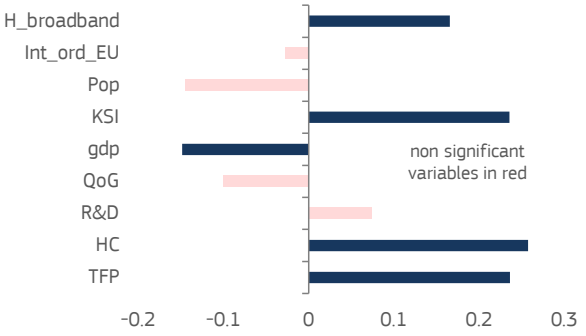
([230]) All data are from ESTAT with the exception of QoG (data source: European Quality of Government Index (EQI), 2017 edition, University of Gothenburg) and TFP, which is DG EMPL extension of the time series built by Cambridge Econometrics based on ESTAT data (see ESDE 2019).

([231]) The proportion, within each region, of internet users who have ordered goods or services from other EU countries during the last 12 months (nt_ord_EU).

([232]) The proportion of households using broadband infrastructures. (H_broadband).

([233]) We have also to recognise that, for structural reasons, small countries have higher propensity to buy abroad than bigger ones.

Chart 3.13
Digital infrastructures support resilience
The extended model of regional resilience – standardised coefficients



Note: significance level 10%
Source: DG EMPL elaboration
Click here to download chart.

Given that the COVID-19 pandemic is a geographically localised phenomenon, it is useful to check for the presence of spatial effects. The econometric specification has been enriched including spatial effects for the dependent variable. In this way we account for the fact that each region is more exposed to spillovers coming from neighbouring regions. In fact, it seems reasonable to assume that a strong outbreak of the pandemic and a large economic impact in a region can affect nearby regions, because the economies are likely inter-linked. Estimations, presented in Annex 3.3, confirm both the previous conclusions and the spatial dimension of the economic impact.

3.5. Regions in digital and green transition

The impact and reaction of the regions to the COVID-19 crisis are further linked to the digital and green transitions. It seems clear that those processes present synergies and complementarities that should be exploited. At the same time the twin transition will play a strategic role to face present and future challenges, notably in terms of resilience, but not all the regions are at the same level and present different vulnerabilities.

3.5.1. The digital transition

Digitalisation is emerging as a key driver of future economic growth for EU countries and regions. The launch of the Skills Agenda in 2016 ([234]) with a focus on digital skills, the Digital Skills and Job Coalition, and the upcoming Digital Europe Programme indicate the importance attached to digital skills as a driver for creating, utilising and benefitting from digital technologies. Building on this, the 2020 European Skills Agenda ([235]) designs a five-year plan to strengthen sustainable competitiveness, ensure social fairness, realise the first principle of the European Pillar of Social Rights, and build resilience to crises. Furthermore, 20% of the Recovery and Resilience Facility allocations are earmarked to support the digital transition increasing productivity, developing the skills of workforce, enhancing the innovation and research and helping creating jobs.

The COVID-19 pandemic has had an impact on the speed of digitalisation, transforming the manner and location of work. Moreover, given the nature of COVID-19, the impact on industries is uneven and often persistent. These characteristics imply that the adverse labour market shock will differ among countries and, within countries, among regions. In this light, it is important to assess the digital skills of regional employment provided by the EU Labour Force Survey. The digital tasks within each occupation have been assessed in order to construct a digital index based on effective employment matching the European Digital Competence Framework (DigComp) ([236]), ESCO ([237]) and ISCO classifications ([238]).

An indication of the digital skills intensity in selected occupations is visible in *Table 3.4*, which shows the top five most digital skills-intensive occupations and five occupations requiring the least amount of digital skills.

([234]) European Commission, 2016.
([235]) https://ec.europa.eu/social/main.jsp?catId=1223

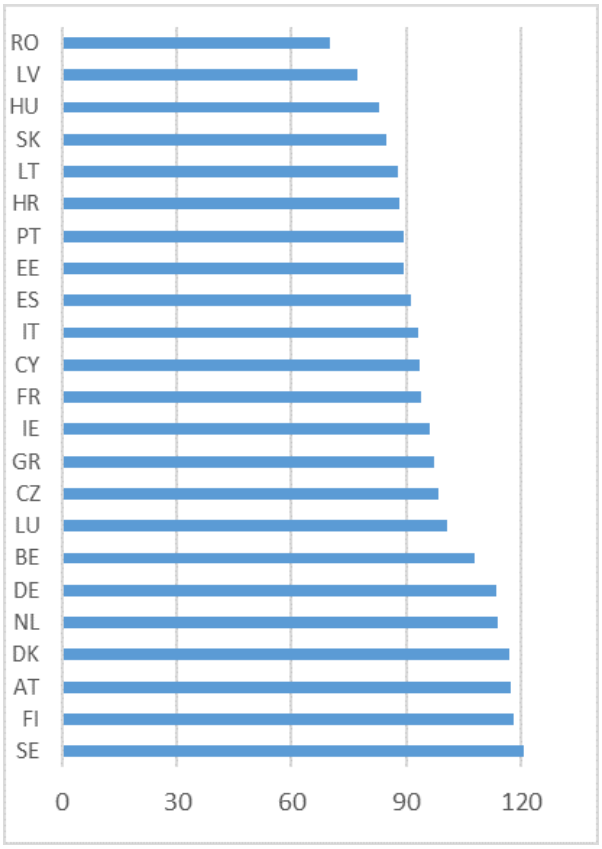
([236]) See Vuorikari et al., 2016 and DigComp project (https://ec.europa.eu/jrc/en/digcomp).
([237]) ESCO is the multilingual classification of European Skills, Competences, Qualifications and Occupations (https://ec.europa.eu/esco/portal/home).
([238]) The EU Labour Force Survey (EU-LFS) has been linked to the ESCO classification system ("European Skills, Competences, Qualifications and Occupations) by ISCO code at level of 3-digit. The European Digital Competence Framework (DigComp) is used to map the ESCO framework and then identify the digital skills within each ISCO occupation. See Annex 3.3 for further details on the assessed digital skills and the matching between DigComp and ESCO framework.

Table 3.4
Digital skills intensity for selected occupations at 3-digit ISCO level

Occupation at 3-digit ISCO level	Average skills intensity within occupation
Database and network professionals	2.2
Software and applications developers and analysts	1.8
Information and communications technology operations and user support technicians	1.4
Authors, journalists and linguists	1
Information and communications technology service managers	1
Locomotive engine drivers and related workers	0
Street vendors (excluding food)	0
Refuse workers	0
Mining and construction labourers	0
Domestic, hotel and office cleaners and helpers	0

Source: Barslund, 2021
Click here to download table.

Figure 3.10
Country level digital skills intensity (EU23 average = 100)



Source: Barslund, 2021
Click here to download figure.

Figure 3.10 **shows the ranking of countries according to the digital skills intensity of the labour market ([239])**. Average digital skills intensity in the labour market varies among EU countries. Sweden has the highest digital skills intensity at around 20 percent above the average level for the EU23 countries. Finland, Austria, Denmark, the Netherlands, and Germany also have substantially higher digital intensities than the EU average. Romania and Latvia have the lowest digitals skills intensive labour markets, both with less than 80 percent of the EU average. Among large countries, Italy, France and Spain are all just above 90 percent of the EU average. We can compare the ranking of digital skills intensity among EU countries with related rankings available as part of the European Commission's digital scoreboard ([240]). For individual digital skills the digital scoreboard has indicators for 'at least basic level of skills' and 'above basic level of skills'. Both indicators identify the same top six countries (among the countries covered by the digital intensity index), which are also shown by the digital skill intensity index. At the bottom end of the scale, Romania, Latvia and Hungary also have among the lowest scores on the two digital scoreboard indicators ([241]).

Figure 3.11 shows a weak convergence of digital skills-intensity **changes across countries.** Countries to the right of the vertical line (crossing at 100) presented in 2011 a digital skills intensity above average. On the vertical line there is the change in digital skills intensity measured in percentage points of EU23 average in 2011. Countries above the horizontal line have increased their digital intensities, constituting all except Ireland. The EU23 average is also indicated and has increased by around 6 percentage points from 2011-2018.

Countries with an already elevated level of digital intensity in 2011 – Sweden, Denmark, the Netherlands – experienced an above-average increase in digital intensity, Finland being the exception. Austria and Germany have become substantially more digital skills-intensive. Increases have been moderate for those countries in the middle of the distribution in 2011, in particular for Spain, Italy and France. Countries initially at the bottom of the distribution have tended towards having high growth in digital skills intensity – examples are Romania, Portugal, Lithuania, and Cyprus.

A clear downward sloping trend would have suggested that countries with a worse starting point would have higher increases in their digital intensity. However, it seems that the development is more U-shaped, and a comparison of the coefficient of variation also reveals little movement. For example, countries ranked first and last in improvement over time in 2011 are

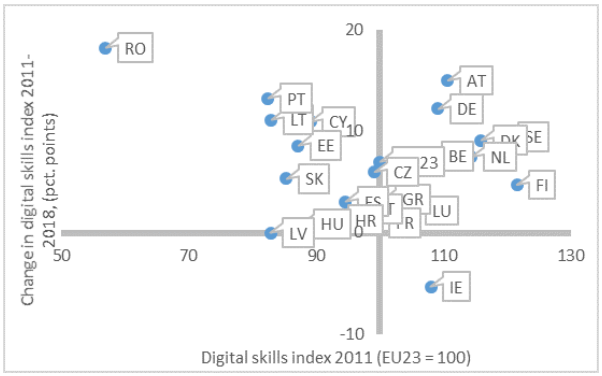
([239]) Due to the lack of data at level 3-digit ISCO code, the index is not available for Bulgaria, Malta, Poland, and Slovenia
([240]) https://digital-agenda-data.eu/
([241]) European Commission, 2020b.

Romania (low score in 2011) or Austria and Germany (high score in 2011).

Figure 3.11

There are weak convergence in digital skills-intensity across countries

Change in the digital skills index in EU Member States, 2011-2018. (EU23)



Source: Barslund, 2021

Click here to download figure.

The EU-LFS survey allows the computation of the digital skills intensity index by region, which represents an important complement to the set of indicators available at regional level.

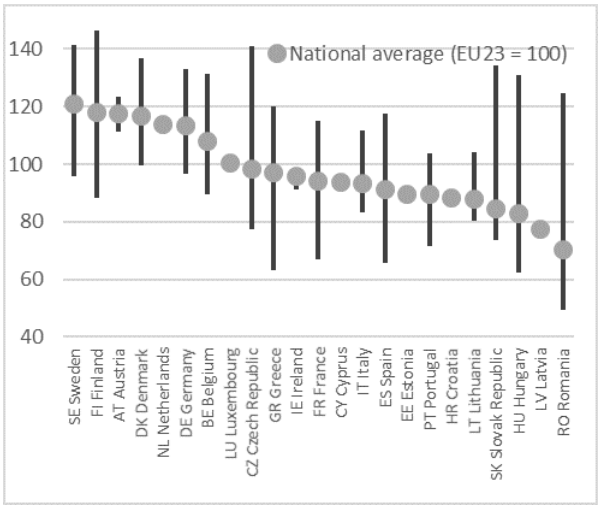
There is significant variation within countries with many regions ([242]), as shown in *Figure 3.12*, both among countries with the highest and lowest national average scores. Within each country, with more than four NUTS 2 regions, there are regions with digital skill intensity above and below the EU23 average. In fact, Slovakia presents a standard deviation of 26.62, followed by Romania (23.54), Czechia and Finland (around 20 for both).

([242]) Netherlands, Germany and Austria are classified at NUTS 1 level because the lack of available information in the EU-LFS survey.

Figure 3.12

Within-country variability in digital skills index is relevant

Variability in digital skills intensity among NUTS 2 regions, 2018



Note: The figure shows minimum and maximum digital skills intensities in the labour market at NUTS 2 regional level, and the national average for EU23 countries. NUTS 2 level information is missing for the Netherlands. Cyprus, Estonia, Luxemburg, and Latvia only have one NUTS 2 level area. For Germany and Austria, regional digital skills intensity refers to the NUTS 1 level (no information is available on NUTS 2).

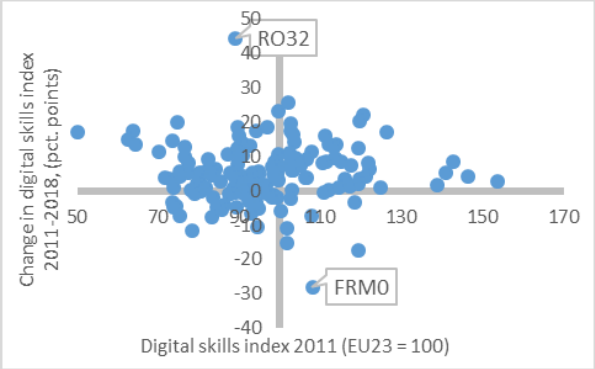
Source: Barslund, 2021

Click here to download figure.

The intensity of digital skills is correlated with GDP per capita by region. Areas with the highest intensity of digital skills usually have the highest GDP per capita and are often located in regions around capital cities. This is the case in Sweden, Finland, Denmark and Germany (NUTS 1) – countries with a high average national digital skills intensity – but also in Romania, Hungary and Slovakia. One exception is Belgium, where the area around Brussels has a skills intensity of around the national average.

Unlike at country level, there is no sign of convergence among regions. In fact, the analysis of changes in the digital index from 2011 at regional level (*Figure 3.13*) shows that regions are rather closely clustered around the middle of the chart but that there are also outliers at both ends, as similarly observed in *Figure 3.12*. The estimated trend-line (not shown) is almost vertical. Only the four regions with the lowest digital skills intensity in 2011 (most leftward points) report an above-average increase.

Figure 3.13
There is no sign of convergence in digital skills index among regions
Change in the digital skills index across NUTS 2 regions, 2011-2018



Source: Barslund, 2021
Click here to download figure.

3.5.2. *Climate change and green transition*

The green transition is closely linked to regional features and vulnerabilities, notably in relation to climate change risks, as well as mitigation and adaptation needs. The interaction between social and climate dimensions comprises notably the direct health impacts of extreme climate events (including heatwaves, floods, and other extreme weather effects and natural disasters). It further includes labour market impacts of changing industrial structures in response to climate hazards, as well as potential job creation and destruction effects of climate change-induced infrastructure investment. The location-specific data sources used in this section include data on climate hazards (extreme temperatures, storms, wildfires, floods), with a focus on heatwaves, as well as insurance claims associated with climate-related damage, social indicators, and sectoral patterns.

These complex interlinkages of climate and socio-economic challenges, as well as the urgencies to address them, are at the centre of the European Green Deal. Previous ESDE reports assessed in more detail notably the employment, skills and social impacts of climate change. Based on the previous Peseta III studies, the 2019 ESDE edition ([243]) highlighted in particular the significant economic and social costs of inaction on environmental degradation and climate change. It also showed that there was widespread awareness among European citizens of the responsibility and urgency to act, despite concerns regarding the costs and distributional impacts that the transition may entail ([244]). The report concluded that inaction is not an option and that, for the EU's climate and energy strategy to succeed, social concerns and impacts need to be taken into account from the outset and, where needed, compensatory measures need to be part of the reforms.

Heatwaves are among the climate-related hazards that have considerably intensified in the past few decades. According to the PESETA ([245]) IV Technical report on heat and cold extremes in the EU ([246]), about 10 million Europeans are currently exposed to heatwaves each year. Health hazards associated with heatwaves are particularly sharp among the elderly and those with pre-existing medical conditions. Besides the direct health effects, heatwaves cause losses in labour productivity in a wide range of industries and occupations, especially in those which require outdoor physical activities, such as in the construction, tourism, agriculture, and fisheries sectors.

Heatwave-related challenges are not uniformly distributed across regions. Using data from the PESETA IV technical report aggregated at the NUTS 2 region-level, *Figure 3.14* presents the annual average share of the population exposed to heatwaves between 1981 and 2010. This share is particularly high in the South-Western and Eastern regions of Europe. Within regions, cities can form heat islands, leading to an even more elevated heat exposure to residents. Moreover, inhabitants of poorer neighbourhoods, that may lack parks and similar amenities, are at a particularly high risk.

The share of the population directly exposed to heatwaves is projected to grow more than tenfold. The PESETA IV Technical report examined three warming scenarios for global warming: 1.5°C, 2°C, and 3°C of increase in average temperature. The three scenarios correspond to an average increase in the share of the population exposed to heatwaves by 23, 40, and 67 percentage points. That means that even under the most optimistic, lowest warming scenario, the population share exposed to heatwaves is projected to grow more than tenfold, i.e. from about 10 million to 100 million individuals. In terms of annual fatalities, against the 3,000 lives lost annually at present, Europe may lose 30,000 to 100,000 people to heatwaves each year.

([243]) "Sustainable growth for all: choices for the future of Social Europe"; Employment and Social Developments in Europe (2019) review (http://ec.europa.eu/social/esde2019).

([244]) Recent studies show that environmental awareness has even increased because of the COVID-19 pandemic (e.g. Eliana Andréa Severo, Julio Cesar Ferro De Guimarães, Mateus Luan Dellarmelin: Impact of the COVID-19 pandemic on environmental awareness, sustainable consumption and social responsibility: Evidence from generations in Brazil and Portugal, Journal of Cleaner Production 286, 124947, 2021.

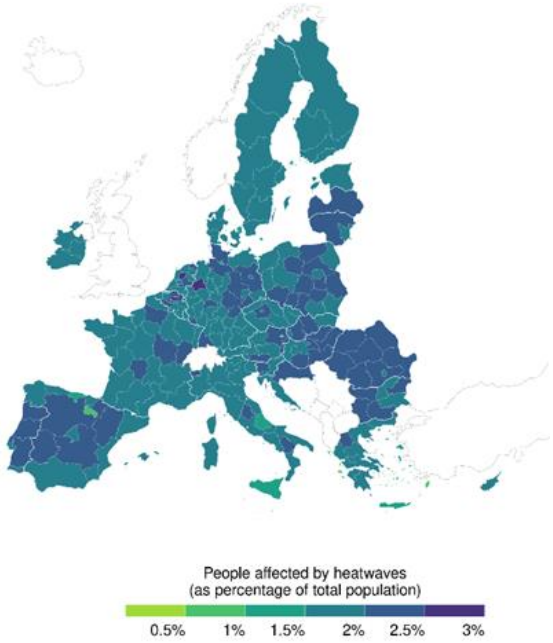
([245]) The PESETA project (European Commission's Joint Research Centre) aims to better understand the effects of climate change on Europe, for a number of climate change impact sectors, and how these effects could be avoided with mitigation and adaptation policies (https://ec.europa.eu/jrc/en/peseta-iv).

([246]) Naumann G. et al. (2020): Global warming and human impacts of heat and cold extremes in the EU. JRC PESETA IV project – Task 11 (https://ec.europa.eu/jrc/sites/jrcsh/files/pesetaiv_task_11_heat-cold_extremes_final_report.pdf).

Figure 3.14

South-Western and Eastern regions of Europe are more exposed to heatwaves

Share of population exposed to heatwaves between 1981 and 2010 (annual average)



Source: DG EMPL calculations based on data from the PESETA IV project.

Click here to download figure.

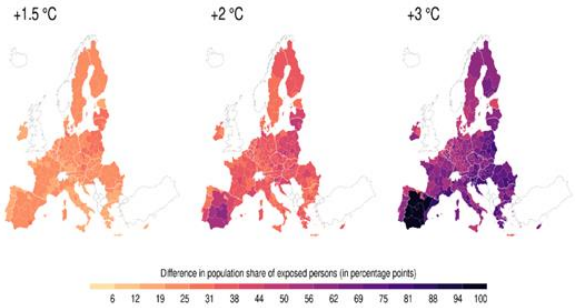
Poorer regions with higher exposure are set to suffer bigger losses given their socio-economic vulnerabilities and the lack of resources needed for adaptation measures. *Figure 3.15* shows the percentage point differences in the share of the regional population exposed to heatwaves between the baseline scenario (no further increase in the average temperature) and the three warming scenarios ([247]). The maps point out that some of the regions that are predicted to experience the most dynamic growth in heatwave exposure are located notably in Spain, Romania, Hungary, Lithuania, and Latvia, which are also among those regions that already suffer from the highest exposure. Moreover, regression estimates based on NUTS 2 data have shown that on average one percent lower regional GDP per capita is associated with up to 0.1 percentage point higher share of exposed population. This shows the presence of an unfavourable, self-reinforcing relationship between the socio-economic and climate vulnerabilities, which needs to be taken into account in the design and implementation of both mitigation and adaptation policies.

([247]) The original Technical report takes into account projected population growth. However, as noted in that document, population dynamics have a minor effect on risk developments related to extreme temperatures; this exercise therefore considers static population levels.

Figure 3.15

Poorer regions suffer bigger losses

Share of the regional population exposed to heatwaves in three different scenarios (Δ percentage point)



Source: DG EMPL calculations based on data from the PESETA IV project.

Click here to download figure.

The new European Climate Adaptation Strategy, published in February 2021, recognises such climate-social linkages. Notably, it calls for a climate resilience that is just and fair, "so that the benefits of climate adaptation are widely and equitably shared". It highlights a need for adaptation measures that help individuals adapt to changing climatic conditions through reskilling and requalification programmes, and for the protection of workers against weather hazards. It also recalls the distributional specificities of climate change.

The new Climate Adaptation Strategy sets out how the EU and its regions can adapt to the unavoidable impacts of climate change and become climate resilient by 2050 ([248]). Indeed, halting all greenhouse gas emissions would still not prevent the climate impacts that are already occurring, or that are projected to occur even in the best case scenarios. To that end, the new Strategy calls to mainstream climate resilience considerations in all policies and suggests 14 areas of actions that complement the increased ambitions and unmatched efforts on the mitigation side, since the launch of the European Green Deal in December 2019.

Key measures taken under the Green Deal on the mitigation side include the adoption of a first European Climate Law. This unique law, proposed in March 2020 and politically agreed in May 2021, establishes binding EU-level targets of net domestic emission reductions of at least 55% by 2030 and climate neutrality by 2050, as well as the objective to strive for net negative emissions beyond 2050.

A dedicated legislative package, the so-called "Fit for 55" package planned for adoption on 14 July 2021, aims to put the Climate Law into practice. Its focus is on aligning existing EU climate and energy legislation with the more ambitious climate and energy targets for 2030, increasing the stringency of regulation, extending the scope of carbon or energy pricing, and suggesting new legislation

([248]) http://ec.europa.eu/clima/policies/adaptation

where needed, such as addressing potentially adverse risks of carbon leakage.

Climate action covering both mitigation and adaptation is also at the centre of the EU's recovery plan. The Recovery and Resilience Facility will support Member States in their economic recovery and longer-term resilience. The National Recovery and Resilience Plans are assessed and monitored in view of their effective support of investments and reforms that promote just transitions and improve climate resilience across the entire EU. At least 37% of the budgetary allocations of the plans should be directed to climate action, covering both mitigation and adaptation. In addition, the plans must not support measures that do significant harm to the environment (based on the 'do no significant harm' principle), including to the objective of climate change adaptation and mitigation.

In parallel, additional funding for climate policies and targeted support to vulnerable and carbon intensive regions is provided. The Just Transition Mechanism worth at least EUR 60 billion aims to alleviate the socio-economic impact of the green transition by notably investing in skills and new infrastructure, helping citizens to re-skill and upskill, facilitating their access to clean energy, whilst providing investment and technical assistance to local businesses. This is further supported by Invest EU, which builds on a budgetary guarantee of EUR 26.2 billion to leverage EUR 372 billion in private and public investments, with a target of at least 30% for climate objectives (to fulfil the commitment of the European Council to achieve a climate mainstreaming target of 30% for both the multiannual financial framework and Next Generation EU).

Further actions have been taken to stimulate private investments in support of climate mitigation and adaptation. The so-called EU Taxonomy Climate Delegated Act ([249]) adopted on 4 June 2021 spells out technical screening criteria for determining the conditions under which an economic activity qualifies as substantially contributing to climate change mitigation and adaptation without doing significantly harm to other environmental objectives.

Benefitting from the measures already adopted, the regional heterogeneity in exposure to heatwaves calls for targeted investment as well as technological and organisational measures to mitigate the losses. Climate adaptation and mitigation constitutes action to prepare for and adjust to the effects of climate change, implemented at the Union, Member State, regional or local levels, or in private companies and households. It includes investment in new structures and appliances, or better-insulated buildings and air-conditioning systems against temperature extremes. Organisational measures are also part of the adaptation toolkit, for example changing working patterns that help exposed workers avoid the hottest periods of the day. Innovative technological solutions, such as wearable machines that protect from heat or alleviate physical exertion are among the adaptation responses of the future.

([249]) The first of a series of delegated acts, defining the technical screening criteria for the objectives listed in the EU Taxonomy Regulation of June 2020 ((EU) 2020/852).

4. Future scenarios and the impact of Covid-19 in the short run

The pandemic directly affects the economic recovery of the national and regional economies. The combination of Trade-SCAN ([250]) and RHOMOLO models helps assess the territorial impact of the crisis, dependent on the evolution of the pandemic and the scenarios implemented by the epidemiological models, which are based on different assumptions regarding the number of days of lockdown and the length and severity of the pandemic (see *Box 3.4* for details). Trade-SCAN ([251]) is a JRC ([252]) multi-country input-output model calibrated to official statistics, whereas RHOMOLO allows for the regionalisation of the results. In this way, it is possible to estimate how much GDP and employment would be gained (saved) in 2021 if half of the lockdown and restriction measures implemented in 2020 were removed. This counterfactual analysis has also been applied assuming alternative scenarios of lockdowns in the different macro areas (euro area, EU, etc.), resulting in two different scenarios:

1) The EU halves its lockdown and restriction measures in 2021, i.e. resulting from a better epidemiological scenario, while the rest of the world remains at the same levels as in 2020. We further break down the results assuming only the euro area or only the non-euro area countries halve their sanitary measures, keeping the rest of the world at the same levels as in 2020.

2) The same levels of lockdown and restriction measures are maintained in the EU in 2021, while the rest of the world reduces its sanitary restriction levels by half.

Results ([253]) show that if, in 2021, the EU halved its lockdown and restriction measures of 2020, the EU GDP would increase by 3.2% (*Figure 3.16*) from -6.2% in 2020. Ireland would turn out to be

([250]) https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/trade-scan-v2-user-friendly-tool-global-value-chain-analysis

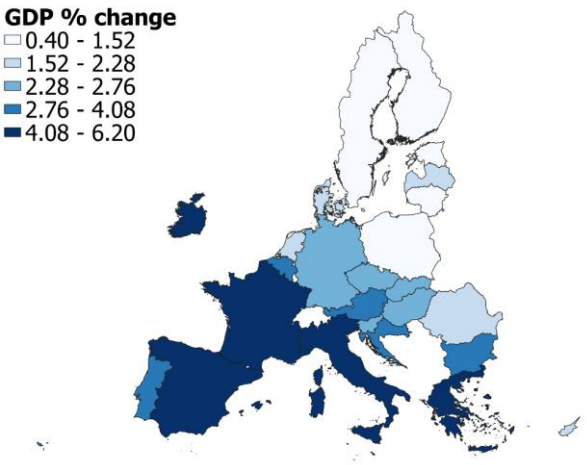
([251]) Trade-Scan results are provided by Jose Manuel Rueda Cantuche and Giovanni Mandras (European Commission's Joint Research Centre).

([252]) European Commission's Joint Research Centre.

([253]) See Annex 3.5 for all the results.

the country benefitting most in the EU with an estimated GDP increase of 6.2% followed by Spain (4.8%), France (4.5%), Italy (4.4%), Greece and Malta (4.1%), and Portugal and Croatia (4%).

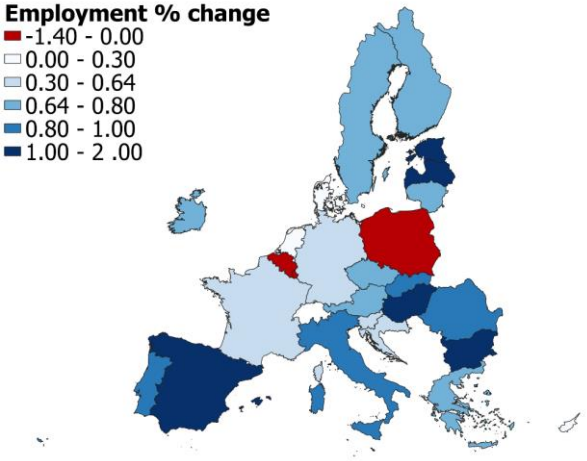
Figure 3.16
By halving the restrictions, the impact on GDP in 2021 would be significant for EU
Trade-Scan estimation – 2021 GDP impact under Scenario 1



Source: European Commission's Joint Research Centre
Click here to download figure.

In terms of employment, the same Scenario 1 would save around 1.6 million jobs, which represents 0.7% of the EU total employment (*Figure 3.17***)**. In particular, Spain would reduce job losses by around 400,000, which is equivalent to roughly 2% of its total employment, followed by Bulgaria (1.5%), Estonia (1.4%), Latvia (1.2%), Hungary (1.1%), Italy and Slovakia (1%).

Figure 3.17
By halving the restrictions, EU would save 1.6 million jobs
Trade-Scan estimation – 2021 employment impact under Scenario 1



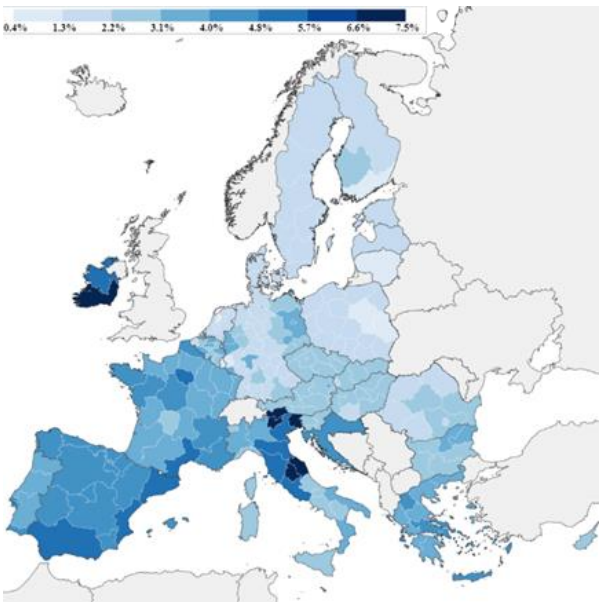
Source: European Commission's Joint Research Centre
Click here to download figure.

At sectoral level, trade services, arts, entertainment and recreation activities, business services, transport and storage sectors, accommodation and food services, and private households with employed persons would accumulate more than half of the GDP and employment gains, both in the EU and in euro area. The size of such gains from the baseline (2020) also depends on the sectoral composition of each economy. On the other hand, sectors such as the wood and cork manufacturing industry, basic metals, chemicals and pharmaceutical products as well as electricity production are rather inelastic and would have a limited reduction of around 25% of the fall in GDP.

In the scenario, in which the rest of the world reduced restrictions, while the EU maintained them at 2020 levels, Ireland would be the country experiencing the greatest fall in GDP and in employment, followed by Bulgaria. Overall, in the EU, the GDP would fall by an additional -0.3% while maintaining the same drop in jobs. With an average additional drop of -2.2% in terms of persons employed, wholesale and retail trade, accommodation and food services, and transport services would be the most affected sectors.

Regionalised GDP impacts across all regions in the EU show a notable within-country variation under Scenario 1. The EU regions' GDP saved due to lower restrictions vary from 0.4% to 7.5% with an average of 2.95% and a standard deviation of 1.4 (*Figure 3.18*). The higher within-country differences are found mostly in western EU countries (Ireland, Italy, Spain and France). South and eastern Ireland together with the Italian north-east border and central regions are those benefitting more from better epidemiological scenarios in the EU, displaying gains above 6.6%. Northern and eastern EU regions are those with the lowest gains and a more homogeneous response.

Figure 3.18
Impact on EU regions GDP in 2021 shows notable within-country variation
2021 impact on EU regions GDP - RHOMOLO estimation under Trade-Scan Scenario 1



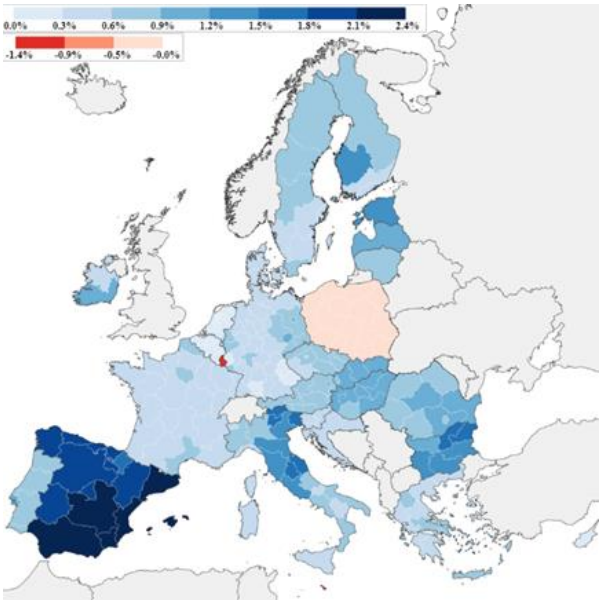
Source: European Commission's Joint Research Centre
Click here to download figure.

Looking at the regionalised impacts on employment under the same Scenario 1, the results confirm a heterogeneous regional response, due to the characteristics of each economic regional structure. The job losses increase/reduction range from -1.4% to 2.4%. Spanish regions show higher gains with values above 1.8%, followed, with values above 1%, by the centre and north-eastern Italian regions, Bulgarian and Hungarian regions. Interestingly, the lowest gains are found in the core-central EU regions with almost all the regions showing values lower than 1%. Interestingly, no regions in Poland show positive values but, instead, a slight (-0.1%) decrease in employment (*Figure 3.19*).

Figure 3.19

The impact on regional employment is heterogeneous

2021 impact on EU regions employment - RHOMOLO estimation under Trade-Scan Scenario 1



Source: European Commission's Joint Research Centre

Click here to download figure.

One of the main conclusions of the analysis is that efforts by the EU to improve the epidemiological scenarios in 2021 in order to reduce the restrictions and lockdowns are worthwhile. GDP and employment would gain significantly, and would certainly pay off the extra costs that governments would incur in its implementation.

Moreover, as expected, the regionalisation of the impacts across all EU regions, has shown both in the case of GDP and employment that countries do not behave as homogeneous economic blocs, underpinning the importance of considering the economic characteristics of each region in order to implement the most effective measures.

Box 3.4: A combination of models to assess future scenarios at national and regional level

The procedure for the estimation of the socio-economic effects at regional level of the different scenarios of lockdown measures can be illustrated by the five steps sketched in Figure 20 ([1]).

1. The starting point is the number of days as a percentage of a quarter (i.e. 3 months) that lockdown measures are implemented in a certain region, depending on the estimated evolution of the pandemic.
2. Since the economic structure is not homogeneous across Member States, a country average is estimated using the share of regional value added in a given country. As a result, a high number of days with lockdown measures in regions with high GDP would weigh more than the same number of days in less developed regions. The previous step produces a country-specific GDP-adjusted measure of the average number of days as a percentage of a quarter (3 months) that lockdown measures are implemented. Should these measures be taken during the full three-month period, the expected initial shocks or estimated national demand declines by sector and by quarter would be fully applied for each country. If the lockdown measures were in place only half of the quarter, the expected initial shocks would be halved instead.

Figure 1 - Linking health and economic models

Source: European Commission's Joint Research Centre

Click here to download chart.

3. Country-specific sectoral initial shocks are of utmost importance and should be based on available estimates from Eurostat statistics, other sector-specific information and the main sectoral features of the lockdown measures (e.g. closure of restaurants, hotels, etc.).
4. The fourth step is the use of multi-country input-output analysis and the OECD global input-output tables to account for the socio-economic (GDP and employment) direct and indirect effects of the initial sectoral shocks across other sectors and other countries in the EU and non-EU countries. The Trade-SCAN model is used to carry out such analysis (Roman et al., 2020; Arto et al., 2019). This model is calibrated to the official GDP published by Eurostat and the OECD for all quarters of 2020.
5. The last step is the regionalisation of the national effects derived from the Trade-SCAN model through the RHOMOLO model (Mandras et al., 2019), which provides an array of different impacts across all regions in the EU for the different epidemiological scenarios.

([1]) De Groeve, T., A. Annunziato, L. Galbusera, G. Giannopoulos, S. Iacus, M. Vespe, J.M. Rueda Cantuche, A. Conte, B. Sudre, H. Johnson, Scenarios and tools for locally targeted COVID-19 Non Pharmaceutical Intervention Measures, Publications Office of the European Union, Luxemburg, 2020, JRC 122800 (Chapter 8).

5. Conclusions

The chapter focuses on sub-national territorial dimensions exploring the challenges and opportunities related to the COVID-19 crisis.

Regional disparities and rural-urban cleavages posed challenges even before the COVID-19 pandemic. Income inequality varies substantially at regional level and inequality indices tend to be the highest in capital regions. Metropolitan regions present higher median incomes, although with large variations within countries. An inclusive recovery from a territorial perspective needs to address these long-standing patterns.

The uneven geographic impact of the COVID-19 crisis has implied often a greater variation within countries than between them. The rise in unemployment in 2020 in the EU was slightly higher in urban than in rural areas. However, preliminary evidence for the EU26, without Germany, suggests that non-teleworkable occupations have recorded larger reductions of employed in rural areas.. This pattern was determined also by the degree of social interaction required by different occupations but it needs further examination.

According to the results of the RHOMOLO model, the regional impact of the COVID-19 on GDP is large, with a considerable variation across the EU, although the Mediterranean regions were the most affected. The impact of the crisis tends to increase from Northern to Southern Europe. The results also suggest that the higher the share of employment in services with physical interaction, such as

accommodation and physical retail, the larger the loss in employment.

Teleworkable occupations have coped better with the pandemic and are best placed to face the challenges of the future. The distribution of teleworkable occupations strongly depends on digital broadband infrastructures and the degree of urbanisation. When considering non-teleworkable occupations, however, a stronger decrease is found in urban centres.

Specific territorial conditions significantly affected the impact of the COVID-19 crisis and prospects for recovery. Territorial differences such as inequality, digital skills, and local endowments are persistent and determine the capacity of regions to overcome the crisis.

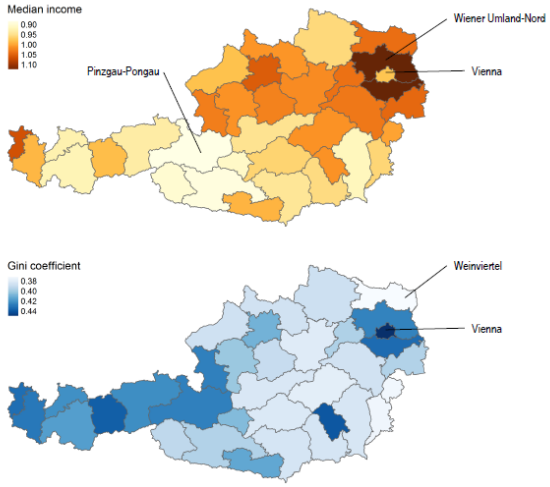
The intensity of digital skills significantly varies across regions and is correlated with regional GDP per capita. Regional differences in digital skills are persistent and have played a role on the crisis' impact; overcoming them would raise the capacity of recovery. Strengthening the intensity of digital skills and notably promoting the teleworkability of occupations will help face the challenges of the future.

Econometric analysis of the performance of regions helped identify the drivers of differential regional resilience, notably in the light of the COVID-19 crisis. Econometric findings show that high regional productivity (TFP), high quality of human capital, high expenditures on Research & Development and a high quality of local institutions help reduce the impact of negative shocks such as the COVID crisis. Further specifications of the model suggest that low corruption in administration and good digital infrastructures contributes positively to regional resilience.

Simulation results show that the phasing out of lockdowns and restriction measures in 2021 are expected to have a significant positive impact on GDP. All regions would benefit both in terms of GDP and employment, although to varying extents. This provides another incentive for quickly rolling out vaccinations.

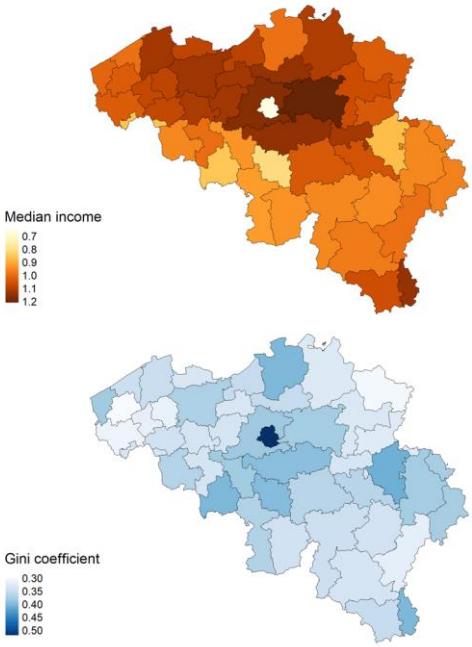
Annex 1: Median income and income inequality in some EU Member States

Figure A1.1
Regional map of income levels (top) and inequality (bottom) in Austria



Note: Income concept: individual disposable income
Source: OECD calculations based on administrative income data
Click here to download figure.

Figure A1.2
Regional map of income levels (top) and inequality (bottom) in Belgium

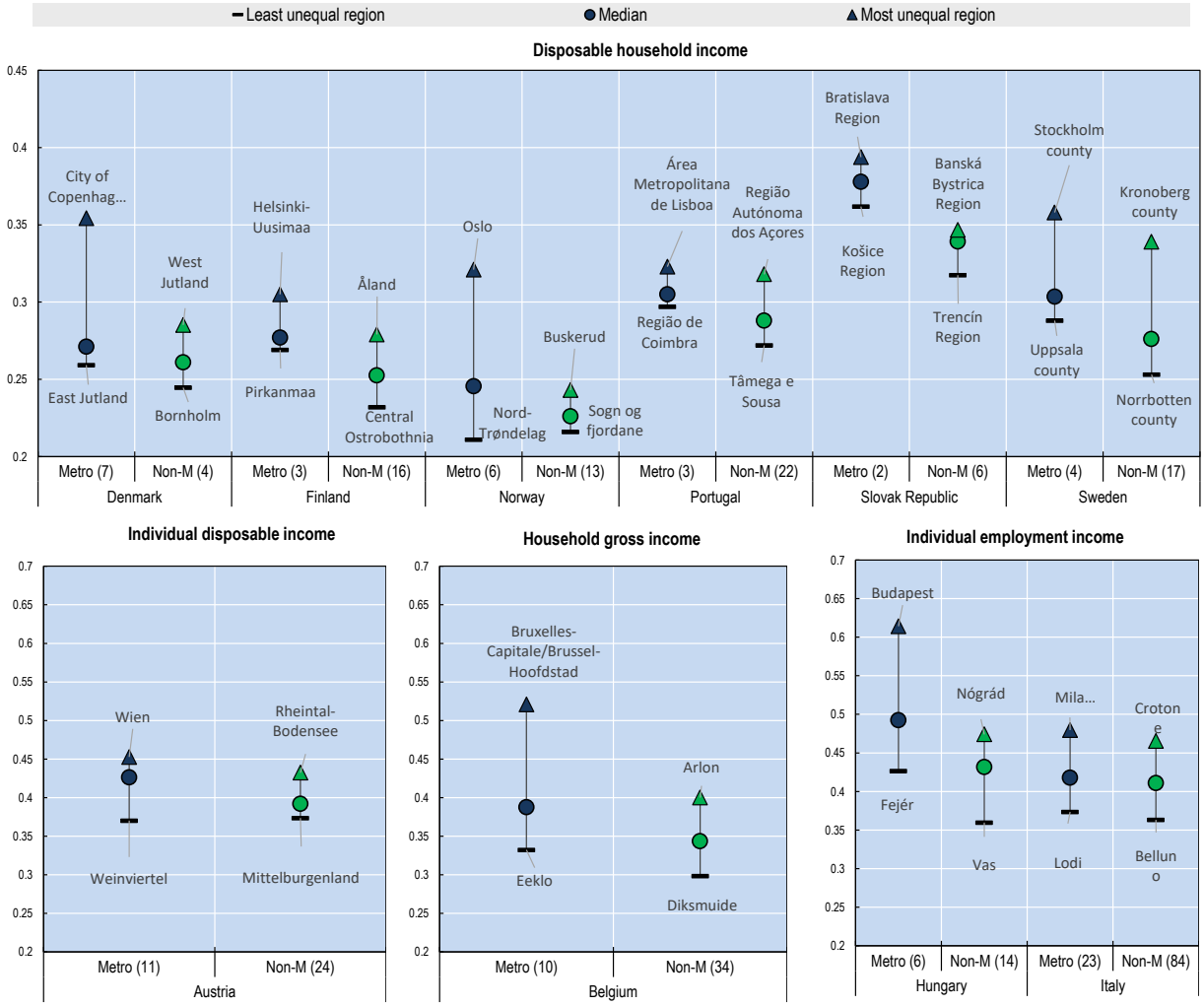


Note: Income concept: household gross income
Source: OECD calculations based on administrative income data
Click here to download figure.

Chart A1.1

Metropolitan regions are more unequal than non-metropolitan regions

Gini coefficients by degree of urbanisation, regional incomes, small (TL3 NUTS 3) regions, 2018/19 or latest year



Note: OECD calculations using statistics drawn from national tax record data

Source: Number of TL3 regions by degree of urbanisation listed in brackets behind the country name. TL3 regions are classified as metropolitan if more than half of their population lives in a Functional Urban Area of at least 250 000 inhabitants and as non-metropolitan otherwise

Click here to download chart.

Annex 2: Result of the cluster analysis: assignment of NUTS-2 regions to six regional clusters

Table A2.1
The six regional clusters

Southern 1	Southern 2	Transition 1	Transition 2	Established		Metropolitan
Voreio Aigaio (EL)	Bruxelles/Brussel (BE)	Yugozapaden (BG)	Severozapaden (BG)	Burgenland (AT) (AT)	Leipzig (DE)	Wien (AT)
Anatoliki Makedonia (EL)	Attiki (EL)	Kypros (CY)	Severen tsentralen (BG)	Niederösterreich (AT)	Sachsen-Anhalt (DE)	Prov. Vlaams-Brabant (BE)
Kentriki Makedonia (EL)	Notio Aigaio (EL)	Střední Čechy (CZ)	Severoiztochen (BG)	Kärnten (AT)	Schleswig-Holstein (DE)	Prov. Brabant wallon (BE)
Dytiki Makedonia (EL)	Kriti (EL)	Jihozápad (CZ)	Yugoiztochen (BG)	Steiermark (AT)	Thüringen (DE)	Praha (CZ)
Ipeiros (EL)	Ionia Nisia (EL)	Severovýchod (CZ)	Yuzhen tsentralen (BG)	Oberösterreich (AT)	Sjælland (DK)	Oberbayern (DE)
Thessalia (EL)	Galicia (ES)	Jihovýchod (CZ)	Severozápad (CZ)	Salzburg (AT)	Syddanmark (DK)	Berlin (DE)
Dytiki Ellada (EL)	Principado de Asturias (ES)	Střední Morava (CZ)	Kontinentalna Hrvatska (HR)	Tirol (AT)	Midtjylland (DK)	Hamburg (DE)
Sterea Ellada (EL)	Cantabria (ES)	Moravskoslezsko (CZ)	Közép-Dunántúl (HU)	Vorarlberg (AT)	Nordjylland (DK)	Darmstadt (DE)
Peloponnisos (EL)	País Vasco (ES)	Eesti (EE)	Nyugat-Dunántúl (HU)	Prov. Antwerpen (BE)	Länsi-Suomi (FI)	Hovedstaden (DK)
Extremadura (ES)	Comunidad Foral de Navarra (ES	Pest (HU)	Dél-Dunántúl (HU)	Prov. Limburg (BE) (BE)	Etelä-Suomi (FI)	Helsinki-Uusimaa (FI)
Ciudad de Ceuta (ES)	La Rioja (ES)	Vidurio ir vakaru Lietuvos (LT)	Észak-Magyarország (HU)	Prov. Oost-Vlaanderen (BE)	Pohjois- ja Itä-Suomi (FI)	Île de France (FR)
Ciudad de Melilla (ES)	Aragón (ES)	Latvija (LV)	Észak-Alföld (HU)	Prov. West-Vlaanderen (BE)	Åland (FI)	Midi-Pyrénées (FR)
Nord-Pas-de-Calais (FR)	Comunidad de Madrid (ES)	Malopolskie (PL)	Dél-Alföld (HU)	Prov. Hainaut (BE)	Centre - Val de Loire (FR)	Rhône-Alpes (FR)
Guadeloupe (FR)	Castilla y León (ES)	Slaskie (PL)	Abruzzo (IT)	Prov. Liège (BE)	Bourgogne (FR)	Budapest (HU)
Martinique (FR)	Castilla-la Mancha (ES)	Wielkopolskie (PL)	Norte (PT)	Prov. Luxembourg (BE) (BE)	Franche-Comté (FR)	Northern and Western (IE)
Guyane (FR)	Cataluña (ES)	Zachodniopomorskie (PL)	Centro (PT) (PT)	Prov. Namur (BE)	Basse-Normandie (FR)	Southern (IE)
La Réunion (FR)	Comunitat Valenciana (ES)	Lubuskie (PL)	Nord-Vest (RO)	Stuttgart (DE)	Haute-Normandie (FR)	Eastern and Midland (IE)
Mayotte (FR)	Illes Balears (ES)	Dolnoslaskie (PL)	Centru (RO)	Karlsruhe (DE)	Picardie (FR)	Sostines regionas (LT)
Molise (IT)	Andalucía (ES)	Opolskie (PL)	Nord-Est (IT)	Freiburg (DE)	Alsace (FR)	Luxembourg (LU)
Campania (IT)	Región de Murcia (ES)	Kujawsko-Pomorskie (PL)	Sud-Est (RO)	Tübingen (DE)	Champagne-Ardenne (FR)	Utrecht (NL)
Puglia (IT)	Canarias (ES)	Warminsko-Mazurskie (PL)	Sud - Muntenia (RO)	Niederbayern (DE)	Lorraine (FR)	Noord-Holland (NL)
Basilicata (IT)	Languedoc-Roussillon (FR)	Pomorskie (PL)	Sud-Vest Oltenia (RO)	Oberpfalz (DE)	Pays-de-la-Loire (FR)	Zuid-Holland (NL)
Calabria (IT)	Jadranska Hrvatska (HR)	Lódzkie (PL)	Vest (RO)	Oberfranken (DE)	Bretagne (FR)	Warszawski stoleczny (PL)
Sicilia (IT)	Lombardia (IT)	Swietokrzyskie (PL)	Západné Slovensko (SK)	Mittelfranken (DE)	Aquitaine (FR)	Bucuresti - Ilfov (RO)
Sardegna (IT)	Bolzano/Bozen (IT)	Lubelskie (PL)	Stredné Slovensko (SK)	Unterfranken (DE)	Limousin (FR)	Stockholm (SE)
Alentejo (PT)	Trento (IT)	Podkarpackie (PL)	Východné Slovensko (SK)	Schwaben (DE)	Poitou-Charentes (FR)	Östra Mellansverige (SE)
Açores (PT)	Veneto (IT)	Podlaskie (PL)		Brandenburg (DE)	Auvergne (FR)	Sydsverige (SE)
	Friuli-Venezia Giulia (IT)	Mazowiecki regionalny (PL)		Bremen (DE)	Prov.-Alpes-Côte d'Azur (FR)	Västsverige (SE)
	Emilia-Romagna (IT)	Vzhodna Slovenija (SI)		Gießen (DE)	Corse (FR)	Bratislavský kraj (SK)
	Toscana (IT)			Kassel (DE)	Piemonte (IT)	
	Umbria (IT)			Meckb.-Vorpommern (DE)	Valle d'Aosta	
	Marche (IT)			Braunschweig (DE)	Liguria (IT)	
	Lazio (IT)			Hannover (DE)	Groningen (NL)	
	Malta (MT)			Lüneburg (DE)	Friesland (NL) (NL)	
	Algarve (PT)			Weser-Ems (DE)	Drenthe (NL)	
	Área Metrop. de Lisboa (PT)			Düsseldorf (DE)	Overijssel (NL)	
	Madeira (PT)			Köln (DE)	Gelderland (NL)	
				Münster (DE)	Flevoland (NL)	
				Detmold (DE)	Zeeland (NL)	
				Arnsberg (DE)	Noord-Brabant (NL)	
				Koblenz (DE)	Limburg (NL) (NL)	
				Trier (DE)	Småland med öarna (SE)	
				Rheinhessen-Pfalz (DE)	Norra Mellansverige (SE)	
				Dresden (DE)	Mellersta Norrland (SE)	
				Chemnitz (DE)	Övre Norrland (SE)	
					Zahodna Slovenija (SI)	

Note: The assignment of capital regions and bigger agglomerations may be distorted due to commuting workers.

Source: Commission services based on Eurostat data (various sources)

Click here to download table.

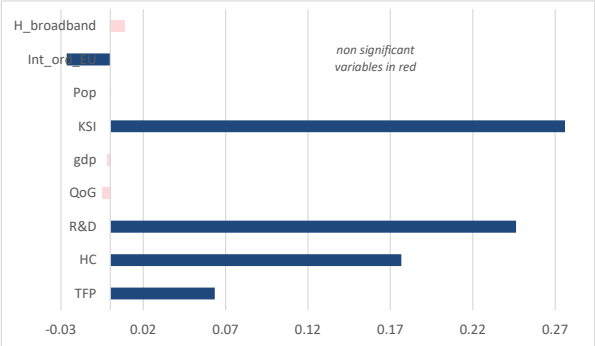
Annex 3: The spatial dimension of the regional resilience

The spatial autoregressive model (SAR), taking into accounts the spatial dependence of the shocks, broadly confirms the results of the other models and highlights the importance of the territorial linkages.

Chart A3.1

The spatial model confirms the main results

Spatial autoregressive model (SAR) for regional resilience (GDP shock)



Source: DG EMPL elaboraton

Click here to download chart.

Annex 4: Digital skills: mapping between DigComp and ESCO framework

Firstly, ISCO codes is linked to the ESCO framework. Then the DigComp framework is used to map to the ESCO framework, such that digital skills can be identified in the list of skills accompanying each ESCO code. *Figure A4.1* provides an example of the mapping between DigComp and ESCO framework.

Figure A4.1
Mapping between DigComp and ESCO framework

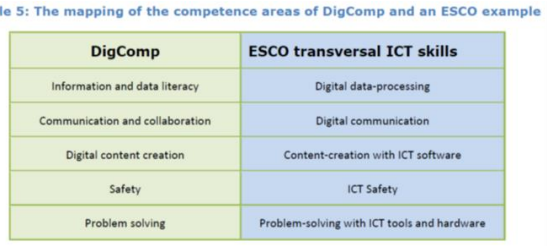


Table 5: The mapping of the competence areas of DigComp and an ESCO example

DigComp	ESCO transversal ICT skills
Information and data literacy	Digital data-processing
Communication and collaboration	Digital communication
Digital content creation	Content-creation with ICT software
Safety	ICT Safety
Problem solving	Problem-solving with ICT tools and hardware

Source: Vuorikari et al. (2016)
Click here to download figure.

In this way, each ISCO code to be associated (via ESCO and DigComp) with a (large) number of digital skills, essential to work in at least one occupation covered by the relevant ISCO code. Under the headings of the DigComp framework there are 21 broader skills (*Table A4.1*).

Table A4.1
Broader digital skills categories in the DigComp Framework

DigComp Category	Skills in the DigComp framework
1.1	browsing, searching, and filtering digital data
1.2	evaluate data, information, and digital content
1.3	manage data, information, and digital content
2.1	Interact through digital technologies
2.2	share through digital technologies / using digital tools for collaboration and productivity
2.3	Engage in citizenship through digital technologies
2.4	Collaborate through digital technologies
2.5	use online conventions of netiquette
2.6	Manage digital identity
3.1	Develop digital content
3.2	integrate and re-elaborate digital content
3.3	copyright and licenses related to digital content --- not used
3.4	Computer programming
4.1	protecting ICT devices
4.2	Protect personal data and privacy
4.3	protect health and well-being while using digital technologies
4.4	protect the environment from the impact of the digital technologies
5.1	solve technical problems
5.2	Identify needs and technological responses
5.3	creatively use digital technologies
5.4	Identify digital competence gaps

Source: Barslund, 2021
Click here to download table.

Annex 5: Trade-Scan simulation results

Table A5.1
GDP and employment gains over the baseline (2020) under different paces of lockdown restrictions in the EU, euro area or rest of the world

	GDP					Employment				
	Baseline	Euro area	Non euro area	EU	RoW	Baseline	Euro area	Non euro area	EU	RoW
EU	**-6.10%**	**3.00%**	**0.20%**	**3.20%**	**-0.30%**	**-1.50%**	**0.70%**	**0.10%**	**0.80%**	**0.00%**
Euro area	**-6.60%**	**3.40%**	**0.00%**	**3.40%**	**-0.40%**	**-1.60%**	**0.80%**	**0.00%**	**0.80%**	**0.00%**
Austria	-6.60%	3.00%	0.20%	3.20%	0.10%	-1.70%	0.80%	0.00%	0.80%	0.00%
Belgium	-6.30%	3.10%	0.10%	3.20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Bulgaria	-4.20%	0.40%	2.40%	2.80%	-0.70%	-2.30%	0.20%	1.30%	1.50%	-0.30%
Croatia	-8.00%	1.60%	2.40%	4.00%	0.00%	-1.20%	0.30%	0.30%	0.60%	0.00%
Cyprus	-5.10%	2.10%	0.10%	2.20%	0.30%	-0.60%	0.30%	0.00%	0.30%	0.00%
Czech Rep.	-5.60%	0.50%	2.20%	2.70%	0.00%	-1.50%	0.10%	0.60%	0.70%	0.00%
Denmark	-2.70%	0.20%	1.40%	1.60%	-0.20%	-0.70%	0.00%	0.30%	0.30%	0.00%
Estonia	-2.90%	1.20%	0.20%	1.40%	0.00%	-2.70%	1.30%	0.10%	1.40%	0.00%
Finland	-2.80%	1.50%	0.00%	1.50%	-0.10%	-1.50%	0.80%	0.00%	0.80%	0.00%
France	-8.10%	4.60%	-0.10%	4.50%	-0.40%	-1.10%	0.60%	0.00%	0.60%	0.00%
Germany	-4.90%	2.50%	0.00%	2.50%	-0.10%	-1.10%	0.60%	0.00%	0.60%	0.00%
Greece	-8.20%	4.00%	0.10%	4.10%	0.00%	-1.30%	0.70%	0.00%	0.70%	0.00%
Hungary	-5.00%	0.40%	2.00%	2.40%	0.00%	-2.20%	0.20%	0.90%	1.10%	0.00%
Ireland	3.40%	4.10%	2.10%	6.20%	-7.90%	-1.50%	0.80%	0.00%	0.80%	-0.10%
Italy	-8.90%	4.40%	0.00%	4.40%	0.00%	-2.10%	1.00%	0.00%	1.00%	0.00%
Latvia	-3.60%	1.50%	0.20%	1.70%	0.10%	-2.30%	1.10%	0.10%	1.20%	0.00%
Lithuania	-0.80%	0.40%	0.00%	0.40%	0.00%	-1.50%	0.70%	0.00%	0.70%	0.00%
Luxembour	-1.30%	0.70%	0.00%	0.70%	0.00%	2.00%	-1.00%	0.00%	-1.00%	0.00%
Malta	-7.00%	4.30%	-0.20%	4.10%	-0.60%	2.60%	-1.40%	0.00%	-1.40%	0.00%
Netherlands	-3.70%	1.90%	0.00%	1.90%	-0.10%	-0.60%	0.30%	0.00%	0.30%	0.00%
Poland	-2.70%	0.30%	1.10%	1.40%	-0.10%	0.10%	0.00%	-0.10%	-0.10%	0.00%
Portugal	-7.60%	4.00%	0.00%	4.00%	-0.20%	-1.70%	0.90%	0.00%	0.90%	0.00%
Romania	-3.90%	1.30%	0.80%	2.10%	-0.20%	-1.80%	0.20%	0.70%	0.90%	0.00%
Slovakia	-5.20%	1.80%	0.90%	2.70%	-0.10%	-1.90%	0.90%	0.10%	1.00%	0.00%
Slovenia	-5.50%	2.40%	0.20%	2.60%	0.10%	-1.00%	0.40%	0.00%	0.40%	0.00%
Spain	-10.80%	4.70%	0.10%	4.80%	0.60%	-4.20%	2.00%	0.00%	2.00%	0.00%
Sweden	-2.80%	0.20%	1.30%	1.50%	0.00%	-1.30%	0.10%	0.60%	0.70%	0.00%

Source: European Commission's Joint Research Centre

Click here to download table.

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CHAPTER 4

Better together: managing the crisis and embracing structural change – the role of social dialogue

1. Introduction ([254])

The COVID-19 crisis has had a major impact on the world of work. As outlined in earlier parts of the report, both the pandemic and subsequent responses to limit its spread and protect lives and livelihoods have had a major effect on the people's working routines. Economic activity declined sharply and workers were either prevented from working or had to change the way they work. The virus has affected different segments of the economy to a varying extent and intensity, with the so-called contact-intensive industries being hit more severely than others where business continuity could be ensured, due to enhanced use of remote working. At both EU and national level, social partners actively contributed to the debate on tackling the COVID-19 crisis. Further, social partners were involved in the planning and implementation of policies to mitigate socio-economic impact of the COVID-19 crisis and participated in the roll-out of short-time work schemes in Member States by providing input to their design and supporting public authorities during their implementation. At the EU level, social partners gave impetus to national and EU policy makers on urgently needed interventions. In Member States, such as Austria and Denmark, they effectively negotiated new agreements, updated older ones and set up or revised protocols to help protect workers.

Social dialogue voiced the concerns of workers and employers at a time of profound crisis, reinforcing its added value. However, the speed with which measures had to be taken also meant that the involvement of social partners in many Member States was not fully ensured at the outset compared with non-crisis times. In those Member States where well-functioning national social dialogue institutions existed, the involvement of social partners in policymaking was secured.

Social partners have a major role to play in the economic recovery and management of structural change. At EU level, they have been advocating for a coordinated recovery across different policy fields. The pandemic has demonstrated that social partners can play an important role in quickly adapting workplaces to new demands. A well-functioning social dialogue can play an instrumental role in bringing about transition and structural change. This chapter first reviews working conditions throughout the pandemic. It then takes stock of the activities and reactions of EU and national social partners during its early stages of the pandemic (in 2020) and social partners' policy contribution. Thereafter, it highlights how social partners are accompanying the post–COVID-19 structural changes in the short and medium term. Finally, the chapter discusses the extent to which the emergencies generated by the crisis have furthered the need for strengthening social dialogue and how the latter needs to regularly reinvent itself in order to adapt to emerging needs.

2. Working conditions during the COVID-19 pandemic

Across all Member States and sectors, social dialogue (tripartite and bipartite) was at the forefront of contributing to the design and implementation of policies limiting the impact of

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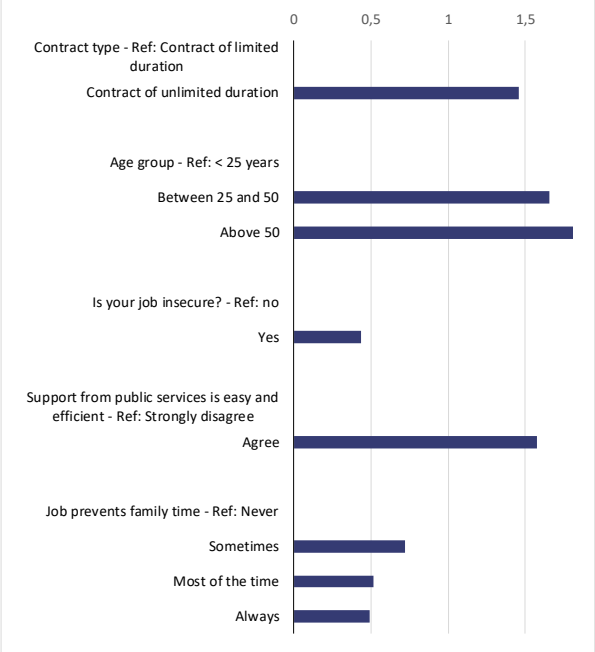
the COVID-19 pandemic. At the sectoral and company levels, social partners established new occupational health and safety (OSH) protocols or implemented safety-related training. At the national level, they supported public authorities in delivering financial and operational support to workers and companies across Europe ([255]). The involvement of social partners was multifaceted in order to respond to a wide array of needs, and was quick and solutions-oriented. In several Member States, social partners backed public authorities in providing urgently needed support schemes. As *Chart 4.1* shows, receiving public support has improved how workers perceive their situation.

Chart 4.1
Subjective well-being and socioeconomic factors impacting it



Note: Subjective well-being has been assessed based on the question: Taking all things together on a scale of 1 to 10, how happy would you say you are? The chart is based on an ordered logistic regression and reports the odds ratios for reporting higher levels of happiness for the indicated categories against the reference categories (ref). Only statistically significant categories for the respective variables are indicated. Beyond these variables indicated in the chart, the regression takes the following into account: gender of respondents, the sector where they work, education level and self-reported health status. As a proxy for income, a variable describing whether the household was able to make ends meet was introduced.

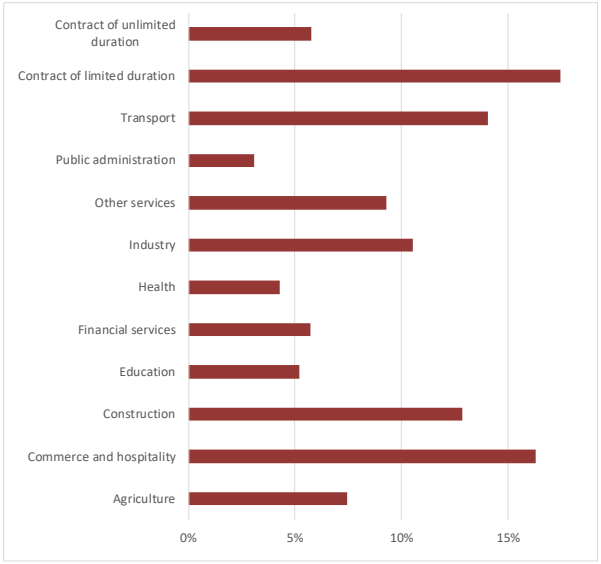
Source: Own calculation based on Eurofound survey data: Living, working in COVID-19, July 2020.

Click here to download chart.

Efforts to mitigate the immediate effects of the pandemic clearly impacted the well-being of workers ([256]). Public intervention by national governments, such as shop closures, was intended to limit the spread of the virus and safeguard healthcare systems from collapse. Two rounds of surveys, one in April and another in July, show that workers' well-being improved between April and July when the severity of the measures was decreased ([257]).

Workers with different socioeconomic backgrounds report different levels of well-being ([258]). *Chart 4.1* shows the odds for reporting higher levels of well-being, for different groups of workers, characterised by different socioeconomic traits. The level of well-being is assessed based on the survey question on how happy the respondent feels. In *Chart 4.1*, values above 1 indicate that the workers with the reported characteristic are more likely to report higher levels of well-being, compared with the indicated reference group ([259]).

Chart 4.2
Perception of job insecurity varies across sectors and contract types



Note: The chart shows the percentage of respondent reporting that they think their job is at risk. The black bars shows responses from different sectors, whereas the last two bars show the responses from workers with contracts of limited and unlimited duration across sectors.

Source: Own calculation based on Eurofound survey data: Living, working in Covid-19, July 2020.

Click here to download chart.

The stability of the employment relationship is positively correlated to subjective individual well-being. During the pandemic, as in normal times, the well-being of workers is affected by many factors, economic security being one of them. According to *Chart 4.1*, workers on fixed-term contracts are more likely to support higher levels of well-being, compared

([255]) Section 3 will discuss social partners' involved in policy action in more detail.

([256]) In the following discussion, subjective well-being was assessed based on the question: Taking all things together on a scale of 1 to 10, how happy would you say you are?

([257]) Eurofound survey: Living, working and COVID-19. The analysis is based on the second round of the survey, conducted in July 2020. See also Eurofound (2020).

([258]) Based on the Eurofound Survey: Living, working and COVID-19, a logistic regression was conducted. Workers from transport, commerce and hospitality reply significantly lower levels of subjective well-being than workers from the public sector. Further to the variables indicated in Chart 4.1, the regressions take into account gender of respondents, the sector where they work, education level and self-reported health status. As a proxy for income, a variable describing whether the household was able to make ends meet was introduced. For the variable describing the ease with which support can be obtained, 4 answer options were available but only 'quite easily' was significant. All correlations are significant at the 5% level.

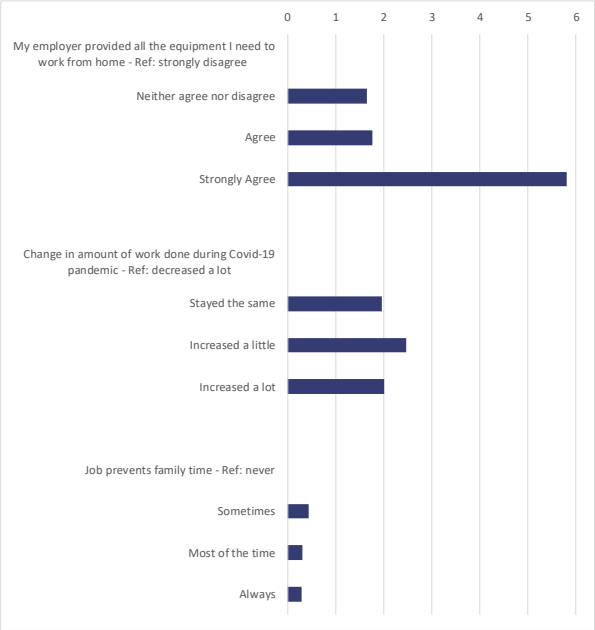
([259]) In turn, values below one, indicate a lower likelihood of reporting higher levels of happiness.

with workers on contracts of limited duration. *Chart 4.2* shows that those workers on contracts of limited duration are more likely to report that their job is insecure as indicated by the blue bars in the chart. Hence, higher levels of well-being are related to job stability. Workers in the commerce and hospitality sectors appear particularly worried about their job situation ([260]). Of the 6 million jobs lost in the second quarter of 2020 across the EU, half were in wholesale, retail trade, and transport and accommodation services ([261]). In particular, retail trade, and food services, such as restaurants and bars are sectors that are characterised by a high personal contact intensity or lack of potential for telework. Hence, these sectors were more vulnerable to the negative impact of COVID-19 – and were also subject to containment measures and changing consumption behaviour.

Public and company initiatives to alleviate the burden on workers have improved their subjective well-being. Workers who view public support during the pandemic as efficient, report a higher subjective well-being than workers who are less satisfied with the public support they have (or have not) received during the pandemic. Many workers have been performing their tasks from home during the pandemic, by relying on telework. Workers reporting that they have been provided with equipment by their employers to carry out tasks through telework are also more likely to report higher well-being (*Chart 4.3*).

The pandemic has triggered a trend towards more telework. Even without any restrictions resulting from COVID-19, about 72% of workers indicate that they would still prefer to work from home when asked about their preferences ([262]). Employers that provide appropriate equipment to work from home improve the teleworking experience for workers. The first part of *Chart 4.3* highlights that those reporting that their employer provided appropriate home-working equipment are significantly more likely to be satisfied about telework. The second part of *Chart 4.3* shows that those who report that their workload has increased during the pandemic (March to June 2020) are also more likely to have enjoyed teleworking. On the other hand, workers report a bad teleworking experience when work-life balance becomes destabilised. The third part of *Chart 4.3* shows that where available time to spend with family is limited due to workload, telework is perceived as unsatisfactory. Gender, education or age do not appear to play a role in the overall levels of satisfaction ([263]).

Chart 4.3
Factors impacting satisfaction with telework



Note: The chart shows the odds ratios for reporting higher levels of satisfaction for the indicated categories versus the reference category. The chart is based on an ordered logistic regression. The chart only reports statistically significant categories. In addition to the factors reported in the chart, sector of employment and whether the employer provided equipment necessary for teleworking.

Source: Own calculation based on Eurofound survey data: Living, working in Covid-19, July 2020.

Click here to download chart.

Older workers are more likely to report higher levels of well-being. Generally, older worker cohorts, overall workers between 25 and 50 years of age and those older than 50, are more likely to report higher subjective well- being than those aged below 25 ([264]). This could reflect the fact that younger cohorts are more affected by the pandemic and the resulting socioeconomic impact is higher on younger cohorts. Young workers are also more likely to be over-represented in sectors impacted more severely by social distancing measures and temporary business closures, or are more likely to be in temporary employment ([265]). In addition, older workers are less likely to have family.

3. THE OUTBREAK OF COVID-19 AND THE ROLE OF SOCIAL PARTNERS IN ADAPTING TO THE SITUATION

The impact of the COVID-19 crisis on the EU labour market has been immediate, with many

([260]) The data do not allow differentiation between subbranches in commerce and between commerce and hospitality. Yet, the observations confirm findings from other studies about the hospitality and retail sector.

([261]) European Commission (2020a).

([262]) Living, working and COVID-19 survey Question D2165_01, cumulative proportion of respondents who report that they would work from home (i) at least once a week, (ii) once a month or (iii) daily.

([263]) For the distribution of workers in different categories based on the 'technical teleworkability' of different occupations see Chapter 2, sections 3.2 and 3.3., which also discuss the positive effect of teleworkability on the evolution of employment, thereby providing one potential explanation for the high degree of satisfaction with teleworking. For a discussion of the effects of the degree of digitalisation on the resilience of the economies of European NUTS2 regions to the impacts of COVID-19 see Chapter 3, section 3.4; for a discussion of the variation in digitalisation across the EU's NUTS2 regions and its correlation with economic output see Chapter 3, section 3.5.

([264]) The differences between age groups are statistically significant across sector and contract types, and are independent of gender.

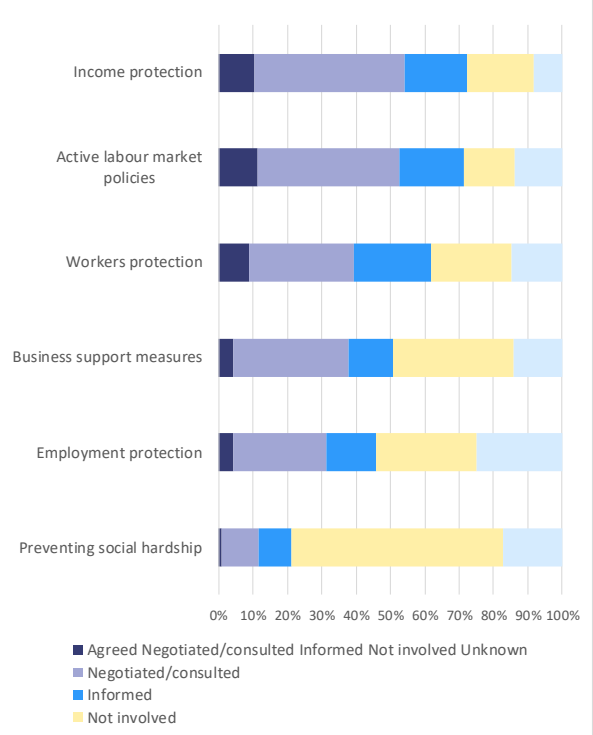
([265]) European Commission (2020a).

jobs temporarily lost and a profound change in working and living conditions. Across many Member States, social partners have accompanied governments in their quest to maintain employment and safeguard social standards. In some Member States, the initial speed with which national governments had to react, put tripartite social dialogue systems to the test. Particularly in the in the early stages of the pandemic (until mid-2020) tripartite social dialogue was under pressure in many Member States and collective bargaining was generally disrupted. In the second half of 2020, tripartite social dialogue improved and stabilised, and collective wage bargaining resumed, also to address working conditions for in-situ and remote working. In some Member States, such as Italy and Spain, national social partners negotiated new collective agreements to regulate new work environments, such as remote work, or health and safety protocols in the workplace. At the company level, unions and management often negotiated support packages for workers, and agreed on the modalities for ensuring business continuity. ([266]) Preventing social hardship refers to measures such as those relating to access to healthcare or provision of in-kind services, such as food vouchers. *Chart 4.4* shows the respective proportions of public measures on which social partners have negotiated and agreed; have been consulted and involved in negotiations; have been informed; or have not been involved at all. The chart is based on a sample of 794 policies across all Member States.

Social partners at various levels have been involved in policy measures to mitigate the socioeconomic impact of COVID-19. *Chart 4.4* shows that social partners have jointly been involved in policies relating to different aspects of the pandemic. They have mainly been involved in the design and implementation of income protection schemes for workers, as shown by the first bar, and active labour market policies, as shown by the second bar. Income protection refers to different public measures to protect the incomes of workers beyond short-time work schemes. In many Member States, social partners were particularly involved in the design and administration of short-time work schemes. These will be reviewed in more detail in Section 3.3. In *Chart 4.4*, workers' protection refers to measures to protect the health and safety of workers against COVID-19, including teleworking arrangements. Business support measures relate to access to finance for businesses, to reorientation of business activities, or to deferral of payments or liabilities.

In the wake of the outbreak of the COVID-19 pandemic, European social partners were quick to adopt a large number of positions. These have covered both joint texts between unions and employer organisations and unilateral texts. Initially, social partners called for urgent, large-scale and coordinated action at all levels and across all policy areas to mitigate impacts ([267]). Health and safety issues pre-occupied national and EU-level social partners alike. The EU social partners called on public authorities to declare specific services as essential, to ensure that these occupations could continue their work (i.e. workers in the food and drinks industry, workers in protective services, transport workers, etc.). Section 3.1 reviews different positions and guidelines that the EU social partners adopted.

Chart 4.4
Social partners' involvement in designing legislation or other statutory regulations and tripartite agreements.



Note: Date of extraction 29 March 2021. Number of cases included: 794. Average of employer's organisations and trade union involvement.

Source: COVID-19 EU PolicyWatch Database

Click here to download chart.

3.1. EU social dialogue to tackle the immediate consequence of COVID-19

The early actions of the social partners following the outbreak of COVID-19 were geared towards addressing fundamental working needs. Since the outbreak in March 2020, EU social partners have adopted many positions – approximately 80 in total ([268]). These included joint positions, which were supported by employers and workers. EU social partners developed and implemented guidelines and protocols on the health and safety of workers across many sectors. Furthermore, they adopted positions addressing the issue of freedom of movement for

([266]) Short-time work schemes on the other hand are agreed at the national policy level (often with involvement of trade unions) but formal company level agreements between social partners to activate these are only needed in a few countries.

([267]) At the EU level, sectoral social dialogue as well as at the cross-industry level.

([268]) A collection of social partner positions can be accessed here : https://ec.europa.eu/social/main.jsp?catId=521&langId=en (last access: 16.02.2021

workers and highlighted the need for public support to keep businesses afloat.

A central issue from the outset of the COVID-19 crisis was OSH. EU social partners in the shipbuilding sector, for example, advocated that to protect the health and safety of workers, specific new OSH measures had to be implemented as a priority. The conditions and the very nature of work in small spaces inside vessels made the implementation of OSH measures a challenge. In July 2020, EU social partners from the chemical industry (IndustriAll and the European Chemical Employers Group (ECEG), issued joint recommendations on improving and maintaining health and safety in the workplace of the chemical, pharmaceutical, plastic and rubber industries ([269]). Social partners highlighted the need for an assessment of general COVID-19-related risks. Aside from emphasising the importance of providing adequate information and training on how to avoid COVID-19 related risks, IndustriALL and ECEG Europe encouraged their members to jointly examine possible chemical hazards resulting from increased use of cleaning and disinfectant agents, and whether COVID-19 has led to other health and psychosocial risks, for instance resulting from forced telework.

Social partners are committed to safeguarding health and safety at work to maintain business continuity. EU social partners from the professional football sector highlighted that the rescheduling of matches and amendments to competition formats create health and performance challenges for players. Considerations include an increased burden on health and well-being when travelling internationally travel to countries with higher health and safety risks. In professional football, clubs and player unions through their representative bodies – the European Club Association (ECA), European Leagues and the International Federation of Professional Footballers (FIFPRO) – have developed international guidelines on players' health under the 'emergency international match calendar 2020-23' as a response to the COVID-19 pandemic. The guidelines are part of collective efforts aiming to help manage the impact of COVID-19 on the football industry and in particular on professional players, clubs, leagues and federations. OSH has also been a topic of focus for EU social partners from the education sector ([270]). In a joint statement, EU social partners representing the personnel of educational institutions committed to providing adequate OSH protection for all educational staff. In their position paper, social partners highlight that schools, including staff themselves, may be seen as drivers of increased risk of infection. These somewhat biased societal perceptions may lead to discrimination against teaching staff in the educational sector. Social partners therefore committed to developing an appropriate strategy to reduce the potential of discrimination against educational personnel, seeking to minimise any psychosocial impact ([271]). EU social partners from the food and drink industry adopted joint guidelines on promoting organisational health and safety in the workplace during the pandemic. Social partners highlighted best practices regarding hygiene rules and work structure management to minimise the potential for contagion with the virus ([272]).

The restriction of workers' freedom of movement in some sectors resulted in severe complications, which EU social partners helped to resolve, thus ensuring business continuity. In the shipbuilding and agricultural sectors, social partners reported significant labour shortages as a result of mobility restrictions imposed due to COVID-19. In agriculture, farmers faced particular problems in obtaining seasonal workers to cover the peak in work during the harvesting season. In their joint declaration, EU agricultural sector social partners stipulated that seasonal workers would receive the necessary documentation from their employers, such as contracts, in order to fulfil national obligations when crossing borders. The declaration also lays out a basic framework to ensure the health and safety of workers. EU social partners in the aviation sector called for a coordinated approach to the restrictions on the free movement of people in response to the COVID-19 pandemic ([273]). Social partners called upon Member States to follow the Council recommendation of June 30 2020 to the greatest extent possible, concerning the temporary restriction on non-essential travel into the EU and the possible lifting of such restrictions. Ahead of an extraordinary meeting of the Member States' ministers for tourism, organised by the Portuguese Council Presidency on 1 March 2021, aviation and tourism sector stakeholders urged the Portuguese Presidency of the EU to channel its efforts into a coordinated approach to cross-border travel during the pandemic ([274]). In the context of the COVID-19, the European Commission published guidelines both on the exercise of free movement and on seasonal workers, to give guidance on the legal situation of workers in cross border situations and highlight the relevant EU acquis ([275]).

([269]) Joint recommendations on safe and healthy workplaces in the Chemical, Pharmaceutical, Plastics and Rubber Industries in times of COVID-19.

([270]) ECA and FIFPRO - International guidelines on player health, August 2020.

([271]) Joint ETUCE/EFEE statement on the impact of the COVID-19 crisis on sustainable education systems at times of crisis and beyond.

([272]) https://ec.europa.eu/social/main.jsp?catId=521&langId=en&agreementId=5645

([273]) Joint statement on the response to COVID-19, calling for a coordinated approach to the restrictions of free movement in response to the COVID-19 pandemic. Statement to the Council by Social Partners in the Civil Aviation Sectoral Social Dialogue Committee on the response to COVID-19 (21/09/2020).

([274]) See open letter from stakeholders of the aviation and tourism sector: European aviation and tourism sectors requires a coordinated approach to cross-border travel - Open letter to the Portuguese EU presidency (24/02/2021).

([275]) Communication from the Commission - Guidelines concerning the exercise of the free movement of workers during COVID-19 outbreak 2020/C 102 I/03 and Communication from the

Social partners were also early to highlight the consequences of the pandemic on economic growth. Aside from immediate concerns about the health and safety of workers (immediately and in the medium-term), social partners across several sectors quickly called for fiscal measures to support the economy during the initial confinement and highlighted their support for the public recovery measures. In March and April 2020, cross-industry social partners highlighted the need for EU-level fiscal policy to underpin any impacts, including by building maximum flexibility into the Stability and Growth Pact, allowing flexibility around the implementation of State aid rules, and adapting EU investment funding and rules. Member States were urged to develop and implement specific measures to support businesses, notably small and medium-sized enterprises (SMEs), including by providing liquidity, credit lines and financial support, considering targeted reductions in VAT rates, and adapting social protection systems and employment rules, such as introduction of short-time work schemes. These demands were echoed by sectoral social partners; for instance the graphical industries highlighted that SMEs need to be supported to ensure sufficient flexibility in making necessary investments to adapt to the current situation ([276]). Overall, European social partners were deeply concerned by the socioeconomic impact of the pandemic and advocated for specific interventions to address this.

3.2. National social dialogue in the immediate aftermath of the COVID-19 outbreak

Public authorities had to react very quickly at the outset of the pandemic, and social partners were not always involved. In the early stages of the pandemic, several governments consulted social partners on the measures to be taken to mitigate the crisis. In a number of Member States, such as Italy, Luxembourg, and France, amongst others, states of emergency were declared in the immediate aftermath. Given the speed at which governments had to take action, social partners in many Member States reported having simply been informed about government measures without having been properly consulted. Time pressure has been one of the main reasons indicated by governments when adopting measures, but this presented challenges to the established social dialogue structures. Nevertheless, in France, Luxembourg, Malta, Poland, Portugal and Slovakia, social partners reported that their involvement has improved over time ([277]).

Social dialogue presented workers and employers with a voice in the design and implementation of policy measures. Social partners contributed to shaping these measures in line with the needs of the sectors have been involved at varying levels. In several Member States, social partners took concerted action together with governments. Tripartite agreements were reached in Austria, Bulgaria, Denmark, Germany, Ireland, Luxembourg, Malta, Portugal and Spain. Tripartite agreements covered a range of topics from employment retention and protection schemes to schemes supporting recovery. In Germany, an ad-hoc initiative by social partners to mitigate the economic impact on the railway sector resulted in a pact between the trade union of the railway workers EVG, the German railways (Deutsche Bahn), the employer organisation AGV Move, and the German Ministry of Transport. In view of declining passenger numbers as a result of the pandemic, the German Ministry of Transport agreed on additional efforts to raise financial support for the German railways. In turn, the German railways (DB) will not pay any bonuses to their management and will aim for further budgetary cuts at the management level.

In some Member States, the pandemic provided an impetus to collective bargaining and social dialogue. In Lithuania, national social partners have been actively involved in the discussion of public measures to tackle issues relating to the pandemic. The Tripartite Council of the Republic of Lithuania has been an important platform to this end, and the number of meetings of the Council has been higher than in the previous two years. In Denmark, many policies have been decided based on ad-hoc tripartite negotiations. In Finland, the pandemic had no major impact on collective bargaining as the 2019-2020 round had been successfully concluded before the outbreak of the pandemic ([278]). Social partners were able to agree on measures increasing flexibility in the labour market to adapt to the situation. At sectoral level, collective agreements have been temporarily changed in line with relevant temporary legislative amendments.

Social partners took joint action at both the bipartite level and company level. The works council and management of Austrian Airlines, for example, reached an agreement on wage waivers in order to reduce labour costs. COVID-19 hit the airline sector particularly hard. The parties involved at Austrian Airlines negotiated a reduction of EUR 300 million in staff costs over the period 2020 to 2024. The agreement included waivers of up to 15% for ground staff and up to 12.7% for flight staff (pilots and flight attendants), covering about 7000 employees. Several national social partners negotiated collective agreements relating to working time, leave, and health and safety at work. Many of the identified

Commission – Guidelines on Seasonal Workers in the EU in the context of the COVID-19 outbreak.

([276]) Joint Statement on the COVID-19 crisis by Uni-Europa and INTERGRAF, March 2020.

([277]) Eurofound (2021 a).

([278]) Eurofound (2021), [Finland]: Working life in the pandemic 2020. Eurofound working paper, Dublin.

collective agreements were concluded in France ([279]), followed by, among others, Germany, Italy and Austria. In Sweden, several schemes on short-time work and working time were implemented through collective agreements.

Social partners took initiatives to protect jobs, incomes and health and safety. Social partners concluded bipartite agreements and have been involved in tripartite arrangements. In Finland, sectoral level organisations proposed 16 policy measures designed to avoid job losses and support workers by increasing flexibility of labour legislation and adapting social security. Most of these measures have been adopted by the government. In Italy, social partners reached agreements in March 2020 on protocols for safe working conditions and on wage subsidies. These agreements were subsequently implemented at company level, after being adapted to local needs. In Belgium, social partners, supported by the government, agreed on guidelines on OSH, to ensure the protection of workers' health and safety at the time of the first economic reopening. Joint committees also provide sectoral guideline documents. Road transport sector social partners in France created a good practice handbook to prevent the spread of the virus, adopted by the ministries of transport and labour. Social partners, together with the government, also reached tripartite agreements. In Denmark, social partners and the government signed the 'Tripartite agreement on wage compensation in the private sector'. In France, trade unions were involved in the healthcare reform process and partial agreements were reached concerning a budget increase to increase staffing levels of healthcare institutions and nursing homes in public hospitals ([280]). Spanish social partners and the government reached two tripartite agreements: the first concerning unemployed protection, the second on economic recovery ([281]).

Social partners also provided information, advice and support to governments and workers. In some countries, social partners helped improve the functioning of actual policies, providing information and feedback used by public authorities to modify their measures. For instance, in Ireland social partners identified and addressed inconsistencies in eligibility criteria for the wage subsidy scheme, which initially excluded women on maternity leave ([282]). In Estonia and Sweden, where social partners manage unemployed insurance funds, they contributed to adjusting regulations on income assurance to better align with local needs. In Italy, social partners were crucial in implementing safe working conditions protocols ([283]), having taken part in sectoral and regional committees mandated with monitoring compliance and respective consultations required at the workplace level ([284]).

3.3. Social partners and their involvement in the administration of short -time work schemes ([285])

Short-time work schemes have been implemented in several Member States, in response to the impact of COVID-19 on the economy. With the help of the instrument for temporary support to mitigate unemployment risks in an emergency (SURE), the European Union has made available EUR 94.3 billion to 19 Member States, to whom EUR 75.5 billion had already been disbursed. Short-time work schemes existed prior to the pandemic in some Member States but have been newly implemented in several others. Belgium, France, and Austria for example, have well-established short-time work schemes that firms regularly use. Other Member States, such as Denmark, Ireland and the Netherlands, complemented pre-existing partial unemployment benefit systems with new temporary wage subsidy schemes. In Greece and Lithuania for example, social partners were instrumental in the introduction of emergency measures in the context of short-time work schemes to prevent layoffs ([286]).

The role of social partners in the design of national short-time work policies varied significantly in terms of scale, timing, quality and impact. For instance, some Member States, such as Austria and Denmark, pursued more traditional approaches to social partner involvement, using established channels and contacts. Others, such as Czechia and France, initially made less use of trade union and employers' organisations, only involving these to a greater extent during the legislative drafting process. As demonstrated in the table below, a medium to high level of involvement of social partners was observed in 16 Member States, whereas in three it was assessed as low. The COVID-19 crisis was referenced by six Member States as a reason for initially not involving trade union and employers' organisations, whereas in two there was no involvement throughout the process.

([279]) Until 16.02.2021, Eurofound Policywatch database identified 98 collective agreements, the majority of which were concluded in France.

([280]) For a more detailed overview over these examples, see Eurofound (2021 a).

([281]) See case ES-2020-20/880 & case ES-2020-27/934 EU PolicyWatch, - COVID-19 EU PolicyWatch.

([282]) See case IE-2020-13/777 – COVID-19 EU PolicyWatch.

([283]) IT-2020-11/457 – COVID-19 EU, Policywatch.

([284]) See Eurofound (2021 a), p. 17.

([285]) This section was contributed by Tina Weber.

([286]) See European Commission (2020 a): and Mosley (2021).

Table 4.1
Level of involvement of social partners in the design and management of short-time working and temporary unemployment schemes.

High	Medium	Low	None at the beginning, then improving	None
AT, BE, DK, EE, ES, FI, IE, LU, MT, NL, SE	BG, CY, DE, LV, PT	HR, HU, RO	CZ, EL, FR, IT, LT, SI	PL, SK

Note: High: social partners either worked on a bipartite level to develop policy proposals implemented through collective bargaining or discussed and taken on board by governments; high level of involvement and influence in tripartite structures shaping the COVID-19 response such as in Public Employment Services or Unemployment Insurance Funds; Medium: Level of involvement of social partners in decision making was significant during all phases of the pandemic whether through formal bodies or informal consultations, but main initiative came from the government side.

Source: Eurofound (2021b)

Click here to download table.

In approximately half of the Member States surveyed, the extent of social partner involvement in policymaking was in line with established traditions and processes ([287]). The Member States that involve social partners tend to have well-developed systems of industrial democracy placing strong emphasis on social dialogue ([288]). For example, a high level of involvement is consistent with traditional bipartite and tripartite processes of policymaking in the Nordic countries, as well as in Austria, Belgium and the Netherlands. Low levels of social partner involvement remain more commonplace in some Central and Eastern European countries including Hungary, Poland and Romania.

In at least two Member States, the pandemic provided a catalyst for closer collaboration with social partners in strengthening employment security and providing a living wage. In Malta, following an appeal before the Maltese Council for Social and Economic Development by social partners, the 'COVID-19 wage supplement scheme' was established. In Ireland, where bipartite and tripartite social dialogue at peak level largely became dysfunctional in the years following the 2008 financial crisis, employers' organisations and trade unions shared similar views on requisite actions. Both employers and trade unions considered the country to be an 'outlier' in the EU due to the absence of a short-time working scheme. Despite some earlier reservations, both welcomed the government's introduction of the temporary wage subsidy scheme.

Established social dialogue structures eased the involvement of social partners. This has been particularly true where decisions had to be taken quickly. The urgency of taking action and the added value of long-established channels of communication in a situation where normal methods of interaction had become limited is perhaps most clearly exemplified by Austria. Here, amendments to the country's existing short-time working scheme were negotiated and agreed among social partners in a bipartite meeting. These amendments were then presented to the government for legal backing in a further meeting on the same day. Well-functioning tripartite structures within bodies responsible for administering short-time working or similar schemes also proved particularly helpful in ensuring rapid implementation, as it is the case in the Austrian and German Public Employment Services or the Estonian Unemployment Insurance Fund. In Spain, existing bipartite social dialogue structures allowed social partners to align to take rapid actions: as early as 11 March 2020, a joint statement was issued calling for the use of short-time work schemes along with the extension of unemployment benefit measures. This commonality of interests was also evident in the response of Cypriot social partners. Similarly in Latvia, social partners used their involvement in tripartite decision-making bodies to support the introduction of short-time working measures.

The pressing need for action led, in some Member States, to an exclusion of social partners from policymaking, notably in the early phases of the pandemic. This included some countries where tripartite concertation is usually rather strong, including in France and Czechia. Here, social partners did not participate in setting up the first antivirus programme, but later became involved in the revision of the scheme, as well as in calls for the design of a more permanent short-time work measures. Similarly, in France and Romania, social partners argued that when the crisis started, the government largely confronted them with finalised policy, which informed rather than consulted. In subsequent weeks and months, feedback provided by employers to Mouvement des entreprises de France (MEDEF) and different trade union organisations contributed to amendments to iron out gaps and unintended consequences that had emerged in the application of the short-time work schemes. This also reflects the evolution of measures in Italy, which were initially passed in the form of emergency measures without the usual consultation.

The involvement of social partners allowed the building of consensus on urgently needed policy interventions. At the national level, social partners have been involved in measures to ensure the health and safety of workers at company level. In most Member States the involvement of social partners was particularly pronounced in employment protection and employment retention measures. Social dialogue can have a strong added value in times of crisis. The experience of the pandemic demonstrates the value of strong tripartite dialogue and the ongoing need for greater capacity building in some Member States, but also the opportunities and risks for established structures in an emergency situation. The high level of amendments implemented on short-time working and

([287]) Eurofound (2021b).
([288]) Eurofound (2020).

similar schemes following their initial design is a reflection of the need for strong stakeholder involvement from the outset to avoid unintended gaps or disincentive effects ([289]).

4. THE ROLE OF SOCIAL PARTNERS IN EMBRACING STRUCTURAL CHANGE

The COVID-19 crisis has accelerated technological trends, which are expected to support the economic recovery. Within a few weeks of the COVID-19 outbreak, lockdowns catalysed the adoption of digital solutions at an unprecedented pace. In many sectors, telework enabled companies to remain operational, while keeping their workers protected from the virus. Digitalisation will change not only the way of working, but also the structural demand for skills. Beyond digitalisation, environmental and social sustainability will be at the heart of the COVID-19 recovery ([290]). In order to achieve a just transition towards a greener and more digital economy, European labour markets will have to adapt. In this context, upskilling and re-skilling of the labour force will play a central role in meeting the labour demand of expanding sectors, improving and maintaining competiveness, and avoiding skills mismatches ([291]).

Social partners can play a significant role in driving economic sustainability and assisting structural transitions. Acting as an exchange forum to discuss matters of industrial relations and beyond, social partners can provide information to policymakers for tailoring policy interventions to market needs. Social partners' views on the recovery and the imminent transitions reflect the need for structural adaption. Before highlighting the role that social partners play in the economic and social recovery through accommodating structural changes, the following subsection will provide an overview of EU sectoral level social partners' views on the post-COVID-19 era, and how the recovery should be shaped ([292]). Subsection 4.2 will highlight the role of social dialogue in adapting the skill sets of workers needed in the light of structural transitions. Subsection 4.3 will focus on how social partners are involved in a particular emerging structural trend: telework.

4.1. The world after COVID-19: the views of social partners

The post COVID-19 recovery must embrace digitalisation. EU social partners from the electricity sector committed to a framework of actions to spearhead a range of activities on digitalisation. This framework has gained importance in the light of the economic effects of the pandemic, which have underlined the importance of teleworking and related digital spaces. In this context, social partners have emphasised that a digital transition needs to be socially responsible. Labour market entrants must be equipped with the right skill set. Social partners aim to develop strategies to prevent psychosocial risks in the workplace that could significantly affect workers and organisations, in line with the Working Time Directive, national legislation, and collective agreements. They highlight the importance of recognising the right to disconnect and remain committed to safeguarding working time arrangements and well-being at work. Furthermore, social partners from the electricity sector exchange best national practices on the usage of worker related data, and join forces to provide national affiliates with indicative guidelines for the use of such data ([293]).

Social dialogue can play an accommodating role in adopting digitalisation. Social partners from the metal industry, which includes sectors such as the automotive industry, are concerned about the impact of digitalisation. In their joint positions paper, IndustriAll and Ceemet highlight that COVID-19 marks the tipping point in dissemination of technology and that social partners will have a key role to play in accommodating technological developments in the industry. In its communication on updating the 2020 New Industrial Strategy for the EU, published in May 2021, the European Commission defines the drivers for the European industrial policy: climate neutrality, digital leadership and global competitiveness. Its aim is to support European industry to lead the twin transitions (green and digital), safeguard European competitiveness and achieve strategic autonomy. In its updated strategy, the Commission also highlights the co-stakeholder role of social partners in designing and creating solutions in industrial eco-systems. These social partners advocate for increased flexibility, due to telework and the need for worker skillset adaptation ([294]). Overall, social partners are adapting to digitalisation and aim to make sure that workers and companies are empowered and can profit from the new developments. Yet there are still some challenges linked to digitalisation, which will be further examined in Section 5.2.

Social partners stress the need for a socially and environmentally sustainable economic recovery. In May 2020, EU social partners from the metal industry, bringing together those representing motor trade and repair businesses and dealerships, concluded a joint statement highlighting the need for a recovery plan ([295]). They called for an industrial recovery plan, to

([289]) Eurofound (2021a).

([290]) See European Commission (2020 b).

([291]) See European Commission (2020 a).

([292]) At the EU level, social dialogue is dealt with in 43 sectors, and both the Social Dialogue Committee and the Tripartite Social Summit gather cross-industry social partners.

([293]) Framework of action 'Digitalisation at the heart of social partners' commitment to keep the lights on' by EPSU, IndustriAll and Eurelectric.

([294]) Joint position by IndustiAll and Ceemed on the impact of digitalisation on the world of work in the MET industries.

([295]) Joint statement of IndustriAll Europe, Ceemet, ACEA, CLEPA, CECRA and ETRMA on a call for an ambitious recovery plan for the automotive sector. European Automobile Manufacturers' Association (ACEA), the European federation bringing together

bring the industry back on track by stimulating sales and reviving production, and to support the industry in its journey towards a carbon-neutral future ([296]). EU-level social partners from the shipbuilding sector called for renewed efforts from all EU stakeholders to develop an updated industrial strategy that includes: access to finance for European shipbuilders, promoting fair global competition, investments in Research and Development and new markets, and the quality of employment, training opportunities and skills. The Commission aims to ensure that EU businesses remain fit to achieve their ambitions and cope with increasing global competition, whilst safeguarding quality jobs. In its communication on a new industrial strategy for Europe ([297]), the Commission lays out its vision for the EU's industrial policy. The communication calls for several policy actions to enhance certainty in the single market, promote innovation and strengthen workers' skills.

A sustainable economic and social recovery requires broad consensus. Employers and workers should be involved at an early stage in the policymaking process. In July 2020, Spanish high-ranking social partners, together with the government, reached a tripartite agreement on economic reactivation and employment. In this agreement, the government, together with the national employer organisation CEOE (which has the broadest representation) and the national trade union confederations UGT (Unión General de Trabajadores) and CCOO (Comisiones Obreras) built a tripartite consensus on the requisite recovery measures. The agreement sets out 12 areas where social partners and the government will negotiate future agreements. These areas notably encompass employment retention, social protection, telework, training and employability. The social partners involved view this agreement as a conduit to broader political consensus on necessary measures ([298]).

At EU level, social partners from multiple sectors contributed concrete proposals to drive a fair economic recovery. In November 2020, social partners from the hospitality sector published a joint position, highlighting the importance of the EU recovery plan and its early deployment. Furthermore, they asked for an extension of all emergency measures and recommended that businesses implement the guidance on health and safety put forward by European Union Agency for Safety and Health at work (EU-OSHA) and other international organisations. EU social partners from the road transport sector issued a joint call for efficient enforcement of existing legislation in the aftermath of the COVID-19 pandemic ([299]). The signatories notably stressed that exemptions from driving and rest time rules and the expiration of control documents, such as driving licences and certificates of professional competence (CPCs), should only be granted under exceptional circumstances. Public authorities need to ensure compliance with current rules, as this is essential for the proper functioning of the road transport industry, ensuring road safety and a level-playing field for all market stakeholders. In a joint statement in April 2020, EU social partners in the temporary agency sector called upon national governments and national social partners to develop new ways of working, learning and social protection, as social innovation can be an important driver of economic recovery and the return to inclusive growth. They also requested that policymakers speed up reforms to ensure effective access to skilling and social protection across diverse forms of work. Social partners from the hospitality and steel sectors highlighted the importance of a timely deployment of the EU Recovery and Resilience Funds (RRF) ([300]).

4.2. Evidence of social partners embracing structural change

Social dialogue is a key principle of the European Pillar of Social Rights. In the aftermath of the COVID-19-crisis, Member States will face new challenges and an intensified need for structural reforms. Structural changes are key, because they can lead to productivity gains and increase competitiveness and employment ([301]). Against this background, the European Pillar of Social Rights action plan, adopted in March 2021, envisages the full implementation of the 20 principles enshrined in the Pillar and will effectively contribute to an inclusive economic recovery. Together with EU and national authorities, employers' organisations, trade unions and other stakeholders will play an active role in the implementation of the European Pillar of Social Rights ([302]). Social partners at company level are a key stakeholders in national training systems. Skills and productivity go hand-in-hand and a well-functioning social dialogue can enhance skills acquisition. This role is important, considering the reported need for up-skilling.

national professional associations which represent the interest of motor trade and repair businesses and European Dealer Councils (CECRA), European Association of Automotive Suppliers (CLEPA), European Tyre & Rubber Manufacturers Association (ETRMA), metal, engineering and technology-based industry employers (CEEMET).

([296]) Joint statement of IndustriAll Europe, Ceemet, ACEA, CLEPA, CECRA and ETRMA on a call for an ambitious recovery plan for the automotive sector

([297]) https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age/european-industrial-strategy_en

([298]) ES-2020-27/934 COVID-19 EU PolicyWatch.

([299]) The International Road Transport Union (IRU) and the European Transport Workers' Federation (ETF), together with CORTE, ECR, and ROADPOL. https://www.iru.org/system/files/Joint%20Statement%20IRU%20CORTE%20ECR%20ETF%20ROADPOL.PDF

([300]) Cantner, & Krüger, (2020).

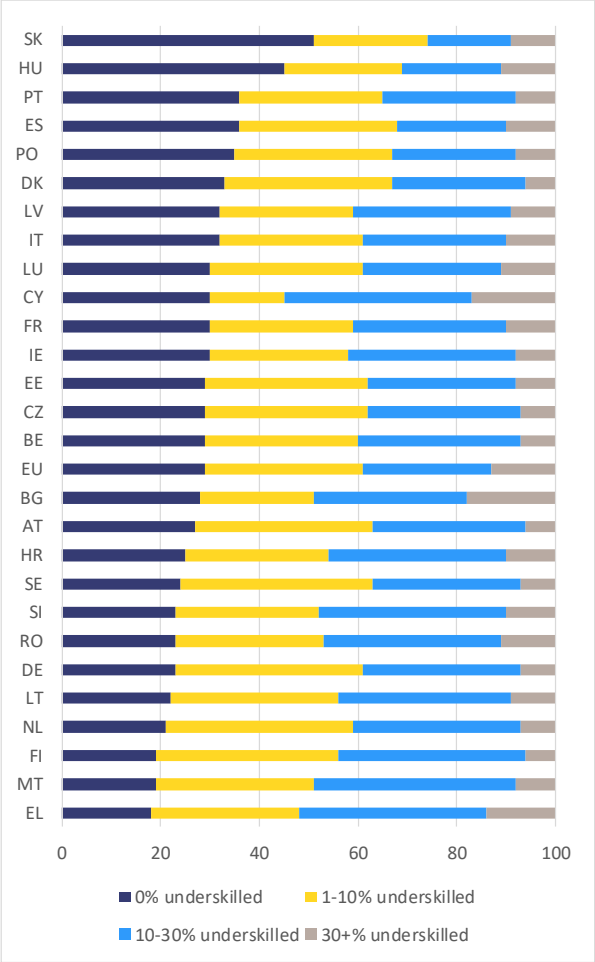
([301]) Cantner and Krueger (2008).

([302]) https://ec.europa.eu/commission/presscorner/detail/en/qanda_21_821

Chart 4.5

The share of companies with no underskilled workers range from one fifth to half across EU

Share of underskilled workers reported by companies, by country.



Source: Own calculation based on European Company Survey 2019

Click here to download chart.

A skilled labour force will play a key role in the recovery, but only three out of ten companies in Europe do not report employing underskilled workers. The EU is determined to tackle challenges related to digitalisation and environmental sustainability alongside the economic recovery. To fully reap the benefits of the digital transition and to adopt new methods for more sustainable production, a skilled labour force is necessary ([303]). However, the majority of company management representatives indicate that their employees are in need of training (see *Chart 4.5*). One third of EU companies report that around one tenth of their employees are underskilled, ([304]) and one quarter of the companies report between 10 and 30 %. This need for skills is reported similarly across sectors ([305]). However, there are marked variations across companies of different sizes. Only 11 % of big companies report no under-skilled workers, with exactly half of them reporting a share between 1 and 10 %, and one third a share between 10 and 30 %. Strikingly, in all Member States, large companies are more likely to report having under-skilled workers, and are more likely to report a share between 1 and 10 % of underskilled workers ([306]). This may also reflect different capacities of conducting skills assessment between large and small companies, which tend to rely more on informal and non-formal training. ([307]) These figures suggest an important need for upskilling and reskilling of the labour force – a need which becomes more urgent in light of ongoing rapid technological developments. Social partners can play an important role in this process and thereby shape and support the recovery.

In Member States with a well-functioning social dialogue, social partners support labour market coordination. Active labour market and social policies, combined with coordinated collective bargaining can be conducive to higher productivity. High investment in skills, together with the coordinating function of social partners, tends to improve training and to reduce skills mismatches. In turn, this positively impacts productivity. This also holds at the company level, where the presence of trade unions appears to positively impact the matching of skills with the required tasks. Overqualification tends to be impacted by different issues – for example migrant and EU mobile workers tend be overqualified more often than workers born in the country where they work. Overqualification of the highly educated tends to be higher for younger workers. Generally, in Member States where labour market institutions, including social dialogue, play an important role, the share of overqualified workers tend to be lower ([308]).

The involvement of trade unions increases the likelihood that workers will receive appropriate training. Often, those workers that are most in need of training are less likely to have access to it. Lower-skilled workers in smaller companies are less likely to receive training and are less likely to participate in lifelong learning. Worker representation at company level tends to improve their training prospects ([309]). The involvement of social partners generally increases the likelihood that workers will enrol in schemes.

The provision of training and including workers in company decision-making are positively related to innovation. Based on the 2019 wave of the European Company Survey, *Chart 4.6* shows the factors correlated with the introduction in companies of new or significantly changed products, services, or

([303]) Communication from the Commission on an Annual Sustainable Growth Strategy – COM(2020) 575 final.

([304]) Share of underskilled according to respondents of ECS (2019) survey (owner/managers/Human Resources managers, training managers of finance/accounting managers). ECS question: What percentage of employees have a lower level of skills than is needed for the job?

([305]) The breakdown used was: construction, production, and services to maintain large samples at sectoral level.

([306]) In Estonia, Ireland, Cyprus, Latvia, Luxembourg, Malta, Portugal, Slovenia and Sweden the number of large companies included in the survey was too small to be reliable. Apart from Sweden, in all countries large companies are also less likely to report a share of under-skilled workers beyond 30%.

([307]) See, Cedefop, 2015; Stone, 2012.

([308]) See Rieff and Peschner (2020) for a more detailed discussion.

([309]) See European Commission (2019).

processes, either for producing goods or supplying services (covering the 2016-2019 period). The direct involvement of employees in both the organisation and efficiency of the work processes, and in the training and skills development, is positively associated with marked improvements in the development of new products and services. The same chart shows that with the increasing engagement of staff members, firms are more likely to have introduced innovative products or work processes. There are two possible explanations for this. First, employees can facilitate collaboration between different units of production and stimulate knowledge sharing. Second, employees who take part in exchanges in a stimulating environment, together with sufficient training possibilities, are more likely to absorb new ideas and thereby increase innovative capacity of companies ([310]).

Worker engagement must go hand in hand with training and the adoption of technological development. A high engagement of firms with workers tends to increase the likelihood of the firms' innovation – more so than the use of robots or data analytics in production processes or service delivery. Of course, employee engagement is only one supporting factor for innovation. The provision of continuous training for them strongly impacts innovation. Process innovation is higher in companies in which workers are continuously being trained, than in companies where no employee is undergoing continuous training. In addition, companies where robots are used in production processes and data analytics are applied are also more likely to innovate. The evidence presented in *Chart 4.6* suggests that, together, technology, training of workers, and workers direct involvement positively impact a firm's likelihood to innovate ([311]).

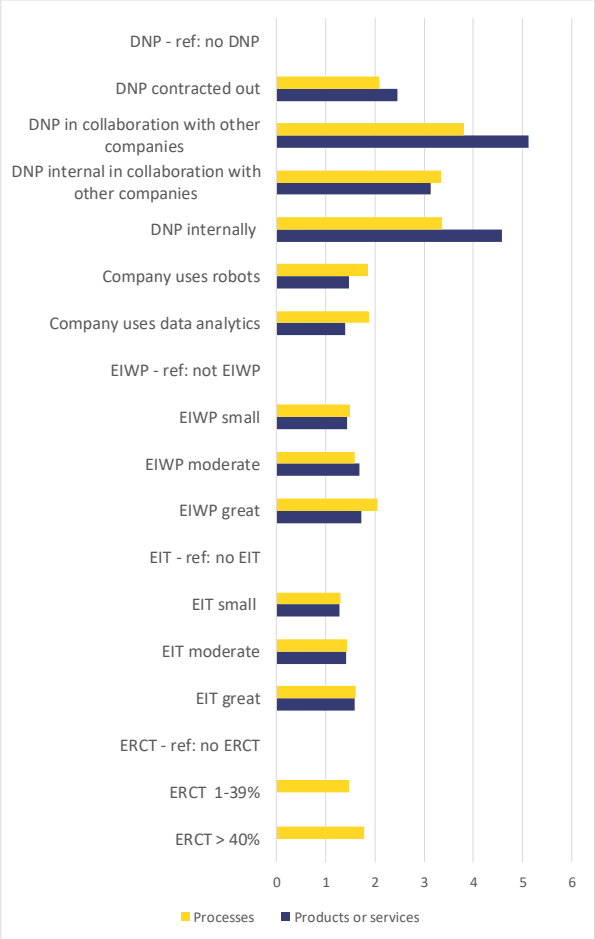
([310]) While the above discussion is based on mere correlations, Rangus,, & Slavec, (2017) find more empirical evidence for this relationship.

([311]) See also Rangus & Slavec (2017) for further discussions on the role of employees for company innovation.

Chart 4.6

Factors linked with company-level innovation (significantly changed products, services, and processes) between 2016 and 2019

Influence of employees on work processes and training is linked with innovation



Note: The chart reports the odds ratios of an ordered logistic regression, comparing different categories of a variable to a reference category. The regression contains control variables at sectoral and country level, as well as company level characteristics (age of establishment and profit). Lines are present only if results are statistically significant.

List of acronyms:

DNP: developing new products (mainly done through contracting out, with other companies, internally);
EIWP: employees influence work programme (to some extent);
EIT: employees influence training (to some extent)
ERCT: employees requiring continuous training

Source: Own calculation based on European Company Survey 2019

Click here to download chart.

Giving workers a voice in the production process increases acceptance of change and enhances company adaptation. This, in turn, may increase their overall satisfaction and well-being. *Chart 4.6* concerns the direct involvement of workers in decisions regarding work process innovation and product adaptation. The engagement of workers in these processes is linked to greater acceptance of new measures and lower job-related anxiety. Trade unions can play the role of a mediator between workers and companies in organisational adaptations ([312]). This reduces workers' grievances and staff turnover, which allows the retention of talent. In combination with

([312]) Bryson, et al. (2013).

further investments in workers' skills, companies can thus increase productivity ([313]).

Social partners fulfil central roles beyond companies in training and education systems. They: (i) take part in the governance and designing of the systems, (ii) bargain over the setting of standards for the systems and (iii) are involved in the provision and administration of the training systems ([314]). In Austria, the Netherlands and Germany, social partners play an active role in defining and managing the training system, whereas in Portugal, Greece and Ireland, they have a consultative role in the governance of training systems ([315]).

Social partners are involved in the governance and design of national training systems. The involvement of social partners in the identification of skills takes different forms ([316]). In Austria, social partners are part of a committee on skills within the employment agency. In the framework of this committee, social partners help identify qualification needs and support the expert group in designing the employment agency's training programme for the unemployed ([317]). In Sweden, social partners are stakeholders in the national skills assessment and anticipation programme. There are several skills anticipation programmes, for which the national statistical institute and the public employment service produce forecasts of employment and qualifications needs forecasts. The involvement of social partners, together with other stakeholders, such as education institutions, results in additional information on developments in the labour market ([318]).

Social partners are involved in the administration and provision of training and education. In Spain, continued vocational education and training has been reformed by the new legislation. Social partners are establishing a permanent structure in order to manage the planning of such activities, which are extensively funded by the Government. Furthermore, several million euro have been allocated to training for trade unions and employers' organisations ([319]). In the Netherlands, trade unions frequently negotiate with employers to establish training funds ("O&O fondsen"), typically funded by employer levies. Approximately one fifth of worker training in the country is paid for by such funds ([320]). These funds also create important training infrastructure: forming networks and education agreements, regulating the supply and demand of education, researching financial solutions, providing guidance for employees, and so on.

Social partners can improve training opportunities for vulnerable groups ([321]). In Ireland, for example, the Irish Congress of Trade Unions (ICTU) and its affiliates financially support charities and civil society organisations to promote professional development opportunities for vulnerable groups. In addition, the ICTU is involved in the management of the People's Colleges, which provides adult education to workers in Dublin ([322]). In Belgium, the trade union federation Confédération des syndicats chrétiens (ACV-CSC) helps workers and jobseekers, especially older unemployed people, to steer their careers ([323]). It provides guidance on job applications, lifelong learning, and legal rights and obligations of job seekers, among other subjects ([324]). In Finland, trade unions provide career services to members and non-members, paying special attention to young people. They provide free advice on summer jobs and organise lectures in schools on employability and the job market ([325]).

Training schemes are established by collective bargaining agreements. To enhance training, and up- and reskilling possibilities, French social partners negotiated collective agreements to set up learning accounts. In France, a cross-industry collective agreement resulted in the creation of the personal training account, "compte personnel de formation". The account allows workers to collect 'points' for experience gathered over their working period. These hours give the account holder the right to access a certain amount of funds, which are dedicated to training, and are of a size proportional to the number of hours gathered. These funds can then be used by the employee to finance training participation. Should the training take place during working hours, with the agreement of the employer, a dedicated fund can be used to compensate the employer for the absence of the worker. The workers are free to decide how to use the respective funds. Another example concerns the German Ministry of Labour, which with the financial support of the European Social Fund (ESF) is supporting social partners in developing and providing

([313]) The impact of trade unions on innovation depends on the collective bargaining structure and the national systems. Earlier studies highlight a negative relationship between trade union presence and innovation. However, this seems no longer to be true. See Bryson, & Dale-Olsen, (2020).

([314]) TUAC (2020): Unions and Skills II – Why social dialogue and collective bargaining matter for skills systems and training provisions

([315]) OECD (2019a).

([316]) With differences across Member States. Cedefop (2020). Vocational education and training in Europe, 1995-2035: scenarios for European vocational education and training in the 21st century. Luxembourg: Publications Office of the European Union. Cedefop reference series; No 114.

([317]) Also from the flake report – general cross industry report.

([318]) https://skillspanorama.cedefop.europa.eu/en/analytical_highlights/skills-anticipation-sweden#_methods_and_tools

([319]) Flake et al. 2018, p.26.

([320]) TUAC 2020, p. 20.

([321]) This is not limited to Member States. For example, in Iceland social partners instituted a Vocational Rehabilitation Fund (VIRK), to fund and provide training and vocational support to individuals following injury or illness. See TUAC 2020, p. 20.

([322]) The college is a charitable body, which the ICTU supports financially. See : https://www.peoplescollege.ie/about/

([323]) A programme called bijblijfwerking.

([324]) TUAC 2020, p. 20.

([325]) TUAC 2020, p. 21.

workplace training schemes. The central goal of this initiative is to increase the number of opportunities for access to training, especially in SMEs, to contribute to a higher labour market participation of women and to increase their career opportunities. Under this scheme, measures related to staff development, training networks and dialogue, such as workshops and sectoral analysis, have to be organised under the umbrella of social partner agreement ([326]).

The EU provides guidance to improve and develop training systems. The Pact for Skills launched by the European Commission in November 2020 as one of the flagship actions of the new EU skills agenda is a model of engagement for skills development in Europe. Under the pact, national, regional and local authorities, social partners, cross-industry and sectoral organisations, education and training providers, chambers of commerce, and employment services will work together to develop the skills capital of EU companies and workers ([327]). In the European Pillar of Social Rights Action Plan, issued in March 2021, the European Commission committed to propose an initiative on Individual Learning Accounts to overcome training accessibility barriers and to empower adults to manage career transitions in the last quarter of 2021. This support will help workers to adopt new skills enabling companies to use new technologies in the light of structural changes.

4.3. Adapting to a changing world of work – remote work

During the pandemic, remote work has risen as a factor of resilience ([328]). The need for physical distancing measures induced a massive shift to telework, subjecting households and businesses to a large-scale forced experiment. Before the pandemic, there was a gap between the potential and the actual number of people working remotely. The increase in the number of people working remotely during the pandemic has shown that there is unexploited potential in teleworking ([329]). The importance of telework as an integral, structural aspect of work organisation may increase after the crisis, regardless of whether individual workers and businesses had embraced teleworking in the past or not ([330]).

Before the outbreak of the pandemic, only a small minority of EU workers had practised teleworking, where this was made available by the employer. In 2017, only 15-17 % of EU workers had *ever* engaged in telework or mobile work, while by 2019 only 5.4 % of employed people in the EU-27 regularly worked from home ([331]). This presents a stark difference from the near-40 % of those currently working in the EU, who began teleworking fulltime as a result of the pandemic ([332]) – including approximately 25 % of all workers in teleworkable economic segments ([333]). This substantial and sudden expansion is likely confronting both workers and employers with challenges, which may vary considerably, depending, inter alia, on prior experience with telework.

Telework has a long pre-COVID-19 history. It is linked to the constant evolution of innovative technological capital – starting with the internet – and to new modes of organising work and employment relations enabled by such capital ([334]). Telework, together with home office and homeworking, belongs to the category of so-called remote work, which is characterised by the performance of ICT-based work at an approved alternative location other than the employer's premises, such as the employee's residence, for at least several working hours. The approved work at an alternative location is to be performed either permanently or temporarily, including regularly on agreed weekdays ([335]). The benefits of telework are a modernised form of work organisation aimed at increasing productivity and competitiveness, and balancing businesses' and workers' requirements for flexibility to enhance job quality. In addition, telework contains the promise of better access to the formal labour market for vulnerable groups of workers, such as those with disabilities or extensive caring responsibilities ([336]).

([326]) https://www.initiative-fachkraefte-sichern.de/fileadmin/redaktion/offizielle_Dokumente/RL_Fachkraefte_sichern.pdf

([327]) https://ec.europa.eu/social/main.jsp?catId=1517&langId=en

([328]) See also chapter 2, sections 3.2 and 3.3 for the effect that the degree of 'technical teleworkability' of occupations had on the evolution of employment in each type of occupation.

([329]) European Commission (2020): Labour market and wage developments in Europe. Luxembourg publication office.

([330]) OECD (2020), "Supporting people and companies to deal with the COVID-19 virus: Options for an immediate employment and social-policy response", OECD Policy Responses to Coronavirus (COVID-19), http://www.oecd.org/coronavirus/policy-responses/supporting-people-and-companies-to-deal-with-the-covid-19-virus-options-for-an-immediate-employment-and-social-policy-response-d33dffe6/

([331]) 'Teleworkers [What Europe does for you]' (European Parliamentary Research Service), 10/8/2018, https://epthinktank.eu/2018/08/10/teleworkers-what-europe-does-for-you/ and 'Telework in the EU before and after COVID-19: where we were, where we head to', Science for Policy Briefs, Joint Research Center, 2020.

([332]) Eurofound (2020a.

([333]) M. Fana et al. (2020).

([334]) See ESDE 2018, ch. 2 and ILO 2020.

([335]) Different types of teleworking: Eurofound and the International Labour Office, 'Working anytime, anywhere: The effects on the world of work' classifies telework or ICT-mobile work employees in relation to their place of work (home, office or another location) and the intensity and frequency of their work using ICT outside the employer's premises. The following groups were identified: home-based teleworkers - employees working from home regularly, using ICT; high mobile teleworkers (or ICTM workers) - employees working in several places regularly, with a high level of mobility and using ICT; occasional teleworkers (or ICTM workers) – employees working in one or more places outside the employer's premises only occasionally and with a much lower degree of mobility than the high mobile group.

([336]) European Parliamentary Research Service (2016), 'Smart workplace: Relativity of space and time', 2016, http://www.europarl.europa.eu/RegData/etudes/ATAG/2016/579107/EPRS_ATA(2016)579107_EN.pdf

Telework offers numerous benefits to employees and employers alike. At the same time, it may pose challenges that need to be addressed through the appropriate policy tools. Beside public policies, social dialogue and collective agreements play a central role in addressing these challenges and ensuring that all players can reap the full benefits of telework and the digitalisation of the world of work in general. In addition to the 2002 social partners' Framework Agreement on Telework, in June 2020, cross-industry social partners signed an Autonomous Framework Agreement on Digitalisation. This agreement already deals with certain aspects related to telework, including the modalities of connecting and disconnecting. The Commission will proactively support social partners in their endeavour to address the challenges raised by digitalisation and telework and the implementation of the 2020 Framework Agreement. In parallel, it will further explore the context, evolution and implications of telework, to underpin its considerations for potential future EU initiatives in this area. During the pandemic, social partners were involved in the roll-out of teleworking in many Member States.

The overall impact of telework on workers' well-being and productivity is ambiguous. On one hand, workers reported an appreciation of the flexibility in organisation of working time and the absence of time and money spent commuting to the workplace. On the other hand, some general effects can be highlighted. Among the frequently-reported negative effects was an effective expansion of unpaid work: unpaid overtime at home, or in other words, supplemental telework. This tends to have a particularly negative effect on workers' well-being, not only because it infringes upon private time including the disruption of family life, but also because it increases feelings of guilt about neglecting home issues ('work-home interference') ([337]). Section 2 has discussed that where telework and family time are irreconcilable, the general experience of telework is perceived as negative. Telework can also improve work-life balance and thereby well-being. But the evidence on its overall impact on well-being cannot easily be generalised ([338]). Some evidence from the period of the ongoing pandemic points to benefits for work-life balance only when telework is based on clear rules and functions as a complement to – rather than a substitute for – work on the employer's premises ([339]).

Overcoming obstacles to telework has called for cooperation between the social partners. To ensure that telework improves welfare and security as well as efficiency and competitiveness, EU social partners' adopted the Framework Agreement on Telework in 2002 ([340]). It was negotiated, signed and implemented by the European cross-industry social partners, ETUC, UNICE, UEAPME, and CEEP. This landmark agreement set up a general framework of rules at European level to promote telework by ensuring that teleworkers enjoy the same rights as those working on employer's premises, while safeguarding the employer interests ([341]). Its guidelines cover data protection, privacy, work organisation, health and safety, training, and career prospects. They have been implemented in accordance with each country's 'procedures and practices specific to management and labour in each Member State', through changes to legislation or collective agreements ([342]).

The EU Framework Agreement on Telework gives guidance on how to structure telework. Social partners want to ensure that telework does not amount to a new employment status. The agreement stresses that teleworkers should enjoy the same legal protection as employees working at the employer's premises. It also identifies aspects specific to distance working which require adaptation of, among other aspects, employment conditions, data protection, privacy, equipment, health and safety, organisation of work, training, and collective rights.

([337]) According to Ojala, & Pyöriä, (2013) home-based telework is not related to an enhanced work–family interface as it finds only weak evidence for telework and/or informal work at home supporting family life.

([338]) Eurofound and International Labour Office (2017), Working anytime, anywhere : the effects on the world of work., Publications Office of the European Union, Luxembourg, p. 29 https://www.eurofound.europa.eu/publications/report/2017/working-anytime-anywhere-the-effects-on-the-world-of-work

([339]) This is the case evidenced by examples from Germany in Ahlers, Elke, Sandra Mierich and Aline Zucco (2021), Homeoffice: was wir aus der Zeit der Pandemie für die zukünftige Gestaltung von Homeoffice lernen können, Wirtschaft-und Sozialwissenschaftliches Institut, Report No. 65, April 2021.

([340]) Art. 2 of the agreement defines telework as form of organising and/or performing work, using information technology, in the context of an employment contract/relationship, where work that could be performed at the employer's premises is carried out away from those premises on a regular basis. Teleworkers are defined as any person carrying out telework as defined above.

([341]) Teleworkers are afforded protection also by EU rules on working time and health and safety. The Working Time Directive sets

([342]) Eurofound. (2010). and European Commission. (2008).

Box 4.1: Collective bargaining in times of the pandemic

The principle of voluntariness: In several collective agreements, the voluntariness of teleworking is a crucial feature. For example in Italy, this principle is stressed by the agreements of the telecommunications sector, the steel company AST (Acciai Speciali Terni) agreement, the banking groups ING and Cassa Centrale Banca-Credito Cooperativo Italiano as well as the pharmaceutical company Merck Serono agreements. In Lithuania, the sector-specific collective agreement covering all health-system employees funded by the state budget, signed in December 2018, not only defines teleworking as voluntary, it additionally makes the employer responsible for enabling an employee to work remotely following a simple request. The voluntary nature of teleworking is also a central principle in the position paper published in late November 2020 by IndustriALL ([1]).

Collective bargaining agreements stipulating working conditions: The collective agreement concluded in Italy between the telecommunication company, TIM, and the trade unions specifies rights for 'smart-workers', such as the right to disconnect, the entitlement to restaurant tickets for meals (also when working remotely), trade union rights, and the provision of adequate IT equipment by the company ([2]). Several collective agreements make explicit mention of working time, reflecting concerns over teleworking risks that pre-COVID-19 empirical findings had identified, notably the expansion of working time for many teleworkers. Reflecting the same concerns, IndustriALL stresses that working time conditions must be the same no matter where the work is carried out. More flexibility and autonomy should be to the worker's advantage and his/her work-life balance, and not result in unpaid overtime, pressure to be flexible and always available, and huge psychological strains. The umbrella organisation emphasises the needs to guarantee and enforce the right to disconnect properly.

Defining working time limits: In Slovakia, the collective agreement between the VSE Holding and its employees enables the use of homeworking for an unlimited time. In the Lithuanian healthcare collective agreement, management has to enable teleworking for at least 20% of working time of an individual worker, upon the latter's request, provided the tasks can be performed remotely. In all other cases, collective agreements, in particular those that seek to introduce the practice as a structural measure beyond the pandemic, provide for more limited use of the practice. In France, the Suez Group agreement provides for teleworking at the rate of two days per week on average over the calendar year (ca. 40% of working time). Among other implications, this means that telework remains a partial and often easily reversible working arrangement in tandem with work on employers' premises, which therefore remain the central workplace ([3]).

Responsibilities on the provision of equipment: In January 2021, in Portugal the social partners' consultation led to the promulgation of a temporary measure that gives responsibility for the tools and communication equipment provision to the employer. When this is not possible, the worker's means can be used, although the employer remains responsible for adaptation. The same company responsibility is stated in the Merck–Sarono agreement, and the Italian framework collective agreement in the telecommunications sector. Also in the French Suez Group collective agreement, the company makes available to teleworkers a laptop, remote VPN access, and a telephony solution that guarantees respect for privacy. Furthermore, the company provides a lump-sum and an allowance for employees that telework an average of two days per week over the year to compensate for energy use and other expenses. In Luxembourg, an agreement covering all private-sector employees nationwide makes the employer responsible for providing the employee with the technical equipment necessary to telework efficiently ([4]).

([1]) The cases analysed are documented in Eurofound's EU Policy Watch under the codes IT-2020-38/1453, IT-2020-40/1455, IT-2021-6/1447, LT-2020-29/1114 and EU-2020-48/1577, COVID-19 EU PolicyWatch.

([2]) COVID-19 EU PolicyWatch, case IT-2020-32/1195.

([3]) The cases analysed are documented in Eurofound's EU Policy Watch under the codes SK-2020-18/1476, LT-2020-29/1114, IT-2020-32/1195, IT-2020-38/1453, FR-2020-46/1466 and IT-2021-6/1447 (in the latter, a 30-day notice is required of the employee to withdraw from an existing teleworking arrangement).

([4]) The cases analysed are documented in Eurofound's EU Policy Watch under the codes PT-2020-13/307, IT-2021-6/1447, IT-2020-31/1188, FR-2020-46/1466 and LU-2020-43/1387.

During the pandemic teleworking was a matter of health and safety. The agreements concluded at the start of the pandemic mention telework as a tool for the health and safety of workers, and for ensuring the continuity of production and service to communities – from local to national level. For instance, in the state-owned energy group Ignitis in Lithuania, COVID-19 prompted management to maximize employee safety by adapting offices and by creating the conditions for more people working from home. Similarly, in Slovakia, consultation through tripartite social dialogue resulted in an agreement to preserve first and foremost workers' health and provide uninterrupted service to consumers as well as protect employment. The government introduced new rules that allowed wider use of telework in Slovakia. In

Italy, too, protection of workers' health was the primary principle mentioned in the collective agreement signed between employer association, Asstel, and the three most representative trade unions of the telecommunication industry, Fistel-Cisl, Slc-Cgil, Uilcom-Uil. The agreement, 'Principles and Guidelines for the new agile work in the telecommunications supply chain', sets a framework for company-level bargaining in companies belonging to the telecommunications sector, which comprehensively employs around 150 000 workers ([343]).

Collective agreements on telework in the aftermath of the pandemic stipulate working conditions and the provision of equipment. The agreements embrace the principle of voluntariness and leave the initiative to the individual worker ([344]). They clearly stipulate the same rights and working conditions for teleworkers as those of in-situ workers. All of the collective agreements concluded by social partners on telework in the aftermath of the pandemic state explicitly that teleworkers enjoy all of the same rights as those working on the premises of the employer. However, the practical differences of teleworking necessitates the provision of specific rights that can only be relevant to teleworkers. The majority of collective agreements define limits to telework working times. They do so either in terms of individual or aggregate working time, or as a share of the total number of workers with the same employer. While the relevant collective agreements aim to expand the use of telework, they do so through a measure that envisages telework as complementary to work on the employer's premises, both at individual and at company level. This is visible from the collective agreements concluded in Slovakia and France, for example, which are presented in Box 4.1. The collective agreements on telework include clauses about the responsibilities regarding the provision of technical and logistical support. This is consistent with the EU Framework Agreement on Telework. The collective bargaining agreements discussed in Box 4.1 on provision of equipment stipulate that employers must provide equipment, such as laptops, that workers need to fulfil their duties from home.

The majority of collective agreements explicitly adopt telework to seize the advantages of structural change beyond the duration of the pandemic. The company level and sectoral collective agreements concluded in Italy attempt to regulate the use of teleworking beyond the simplified regime adopted by the government in order to cope with COVID-19. The collective agreements convey a sense of the opportunity for structural modernisation, suggesting that reliance on 'smart' or 'agile' working arrangements will outlive the health emergency. The collective agreement at Acciai Speciali Terni defines the objective as the promotion of better work-life balance, stronger digitalisation of the work in the company, a boost in productivity, and the promotion of a higher degree of social, economic and environmental sustainability. Modernisation beyond the horizon of the crisis is also the aim of the collective agreement from Suez, France, in November 2020, which generalises and perpetuates telework beyond the COVID-19 crisis, 'to strengthen quality of working life and promote flexibility' ([345]).

As regards teleworking, social partners actively address structural change. In the immediate aftermath of the pandemic, the social partners have negotiated a number of collective bargaining agreements to accommodate the shift to effective and fulltime teleworking of a large share of EU employed in teleworkable functions. These agreements reflect the principles outlined in the 2005 EU Framework Agreement on Telework. The bipartite and tripartite initiatives taken by the social partners illustrate their willingness to steer structural change judiciously by regulating teleworking in ways that make it complementary to, but not a substitute for, in-situ work, to reap the benefits of this working mode. However, the structural change related to digitalisation goes beyond telework. It also concerns adaptation of the workplaces at the employers' premises.

5. Challenges for social dialogue

Social dialogue is an important institution for the world of work, but it is under increasing pressure to adapt. The pandemic has made interactions between social partners increasingly difficult or, at times, even prohibited them. While social partners have made contributions to support workers and companies to adapt to the pandemic (see Section 3), they have also been put to the test. In the months after the outbreak of the pandemic, the adoption of nationwide restrictions limited collective bargaining and social partners' activities in some Member States. Collective bargaining has been losing momentum since the early 2000s. In this context, Section 5.1 will discuss collective bargaining in the immediate aftermath of the outbreak of the pandemic and show how the previous changes in the economy, such as the rise of digital platforms, reduce the room for manoeuvre of collective bargaining. Although social dialogue in the EU has a high potential to support workers, employers, and governments to adjust to structural change, it will also have to adapt itself. Section 5.2 discusses this need for adjustment, relating to the aspects of recovery and structural transitions discussed in Section 4.

([343]) The cases analysed are documented in Eurofound's EU Policy Watch (http://eurofound.link/covid19eupolicywatch) under the codes LT-2020-12/1388, SK-2020-18/1476 and IT-2020-31/1188.

([344]) Art. 3 of the July 2002 EU-level framework agreement on telework establishes the voluntary character of telework for both worker and employer and forbids the termination of an employment relationship because of a worker's refusal to opt for telework.

([345]) The cases analysed are documented in Eurofound's EU Policy Watch under the codes IT-2020-31/1188, IT-2020-38/1453 and FR-2020-46/1466

5.1. Social dialogue in the aftermath of the crisis

EU level social partners have been reporting on short-comings of national social dialogue in the aftermath of the outbreak of the pandemic. The European Trade Union Confederation (ETUC) reported on the situation of collective bargaining across Member States. In Belgium, there has been, overall, a good climate in social dialogue, yet ETUC highlights that measures to reduce the impact of the pandemic have been taken by the government without social consultation. ETUC and IndustriAll criticised the measures taken by the Hungarian government during the initial phase of the pandemic in March 2020. ETUC highlighted that the measures weaken workers' rights and undermine the labour code and autonomous collective bargaining agreements. IndustriAll reports that they, together with ETUC and the national social partners, prevented the introduction of a measure by the Croatian government, allowing it to unilaterally cancel collective agreements ([346]). UniEuropa pointed out that remote working could be used to diminish or obstruct workers' rights to form or join a trade union and that in this way it could undermine social dialogue and collective bargaining ([347]).

In the aftermath of the outbreak of the pandemic, 'traditional' collective bargaining was put on hold in some Member States. In Member States, such as Czechia and Finland, the planned collective bargaining rounds for 2020 were held from the end of 2019 to the beginning of 2020, and could thus be concluded. Yet, in many Member States, anticipated pay raises have been frozen, as the pandemic raised a lot of concerns about increasing economic uncertainty. In Sweden, new collective bargaining rounds were due to take place in 2020 ([348]). Due to uncertainty related to the public health crisis, social partners agreed to put the bargaining round on hold. In Spain, the outbreak of the pandemic has led to a considerable adjustment of the general agenda of the parties at the collective bargaining table. Many of the negotiations had to be postponed due to the outbreak. Saving jobs has been prioritised over wage adjustments – the minimum wage has been frozen for 2021 and collectively agreed wages decreased in 2020 compared with 2019. In almost 500 companies, collective agreement clauses related to wages have been suspended. The suspensions have been negotiated with workers and are related to schemes, such as short-time work, to alleviate the economic pressure on companies due to the crisis ([349]).

In some Member States, the pandemic prohibited the normal functioning of collective bargaining and social dialogue. In Romania, Hungary and Portugal, governmental decrees linked to the state of emergencies limited the right to strike of workers. In the aftermath of the confinements of spring 2020, Romanian trade unions pointed out that their bargaining power decreased, as their potential to strike has been undermined by the pandemic. In the aftermath of the outbreak of the pandemic, the negotiation procedures for collective agreements have been put on hold in Greece ([350]). According to the law, the Greek statutory minimum wage should be revised annually, in concertation with social partners. However, this process was also put on hold following the outbreak of the pandemic and has been further postponed ([351]). In April 2021, consultations with the social partners were finally launched. Even before the pandemic, Greek reforms relating to the right to strike and the implementation of a digital registry for trade unions were discussed in the framework of a labour law modernisation ([352]). The legislative process for these reforms was also delayed in spring 2021. In Poland, there was little active tripartite and bipartite social dialogue at the beginning of 2020. Only in September 2020 did social partners' reach bipartite resolutions on public aid to transport companies, for example. Yet none of those motions have been endorsed by the government.

Collective bargaining coverage has been decreasing in many Member States. In several Member States, collective bargaining came under pressure after the financial crisis in 2008. Trade union and collective bargaining coverage were already decreasing prior to that, however (see *Chart 4.7*) ([353]). A decrease in multi-employer bargaining at the sectoral or national level appears to explain the drop in collective bargaining coverage. These decreases occur in concert with regulatory changes, such as the discontinuation of national agreements and multi-employer bargaining or changes in rules on the automatic extension of the collective bargaining agreement ([354]). In Austria or Belgium for example, extensions to collective bargaining agreements are widely used ([355]). Collective bargaining coverage is

([346]) https://news.industriall-europe.eu/Article/436

([347]) https://www.uniglobalunion.org/sites/default/files/files/news/uni_remote_work_guidelines_report.pdf#overlay-context=news/covid-19-forces-millions-work-home-right-disconnect-has-never-been-more-important, p. 3.

([348]) In Sweden, collective bargaining takes place every three years. The previous round was held in 2017.

([349]) The country information is derived from Eurofound (2021): Working life in the pandemic 2020. Working papers on Finland, Sweden and Spain.

([350]) The country information is derived from Eurofound (2021): Working life in the pandemic 2020. Working papers on Romania and Greece, Dublin.

([351]) Initially for a period of 6 months, subsequently extended twice, for additional 3 months, Art.110, law 4764/2020.

([352]) This register will be a prerequisite for trade unions to acquire legal personality, allowing them to exercise the rights of collective bargaining and striking. The legislative proposal further regulates the right to strike and provides for an increase in minimum services operation during strikes for public service firms (to be set at 33% compared to the current 20% level).

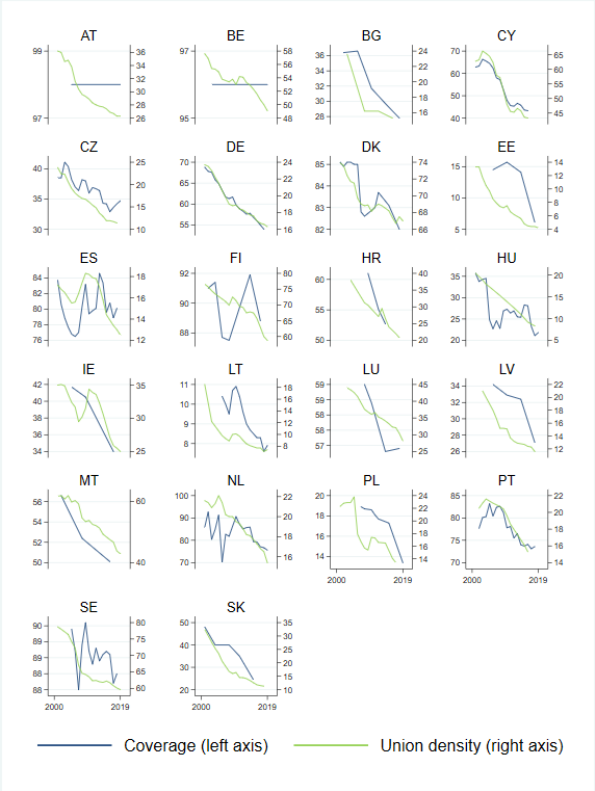
([353]) See also Chapter 4 in European Commission (2020).

([354]) Visser (2016).

([355]) Extensions are based on legislation, mandating the government (or courts) to apply provisions of collective agreements beyond its signatories, to non-organised employers (Visser, 2016, p. 6). Despite automatic extensions, collective agreements may still leave room for specific company level adjustments.

usually high in Member States where collective agreements are negotiated with several employers and where the collective agreements are concluded at sectoral or national levels. Where employer density is high, collective bargaining coverage tends to be higher. Trade union membership can also affect collective bargaining coverage: particularly in countries where collective bargaining is concluded at the company level, trade union membership tends to be more aligned with collective bargaining coverage (OECD, 2019b) ([356]).

Chart 4.7
Development of collective bargaining coverage and trade union density between 2001 and 2019



Note: Collective bargaining coverage is based on the historical trend in the adjusted bargaining (or union) coverage rate. This represents the proportion of employees covered by collective (wage) agreements in force among employees with the right to bargain based on combined administrative and/or survey data sources (AdjCov and AdjCov_s from OECED/AISA ITCWSS database). Trade union density is the proportion of employees among the total number of employees that are members of trade union.

Source: European Commission computation based on OECD/AIAS ICTWSS database https://www.oecd.org/employment/ictwss-database.htm

Click here to download chart.

Collective bargaining coverage needs to be ensured by appropriate frameworks. The developments just outlined hamper the effectiveness of collective bargaining across the EU. To maintain high collective bargaining coverage, an appropriate regulatory framework, in agreement with social partners, remains imperative. The European Commission proposed a Directive on Adequate minimum wages in the European Union ([357]). This includes measures aiming to increase collective bargaining coverage in the Member States. Article 4 of the proposal underlines that Member States should take action to promote and strengthen social dialogue and to increase collective bargaining coverage.

Many citizens attach a lower importance to social dialogue compared to other components of the European social model. A number of studies point to a positive relationship between strong collective bargaining and income inequality ([358]). In countries with strong collective bargaining institutions, overall in-work poverty tends to be lower. Rapid changes in economies and labour markets inevitably imply a modified agenda for social dialogue. Yet, when confronted with a number of policies and political aims in the realm of employment and social affairs, EU citizens rank social dialogue and the involvement of workers amongst the least important factors for the future of the EU ([359]). The range of policy issues, presented in *Chart 4.8*, with which survey respondents have been confronted include a large variety of issues. Social dialogue is a process that deals with different policy issues. While social dialogue can play an important role in the implementation and improvement of the respective policies, citizens across the EU appear to attach a lower importance to it. Generally, trust in social partners across the EU is high. But this perception of social dialogue reflects the decreasing afflux of trade unions ([360]). The capacity of social partners to negotiate and to have a substantial impact also depends on membership size and the coverage of their agreements.

To maintain the ability to advise policymakers, social partners need to have the necessary capacity. In itself, the crisis has created extraordinary and unprecedented challenges that will need to be addressed through a revamped social dialogue, at EU, national and sectoral/local levels. It is clear that increased administrative capacity to lead on bipartite and tripartite social dialogue will be necessary in some particular countries and/or regions in Europe. The capacity of social partners to be involved in policymaking and conclude agreements is determined by structural and institutional factors. The social partners need to have the capacity to respond to new challenges; the skills and expertise to advise public policymakers; and stable cooperation between themselves and with public authorities ([361]). Capacity is of particular relevance in light of the ongoing transitions, to which social partners have to adapt, in addition to attracting new members. Promoting a more supportive legal framework for social dialogue and sectoral collective bargaining, while respecting the autonomy of social partners, can reinforce the capacities of both employers' organisations and trade unions' to embrace structural change and to engage in

([356]) In Poland or Latvia for example, collective bargaining mostly takes place at the company level.

([357]) Proposal for a Directive of the European Parliament and of the Council on adequate minimum wages in the European Union COM/2020/682 final.

([358]) For a discussion, see European Commission (2020 a).

([359]) According to the special Eurobarometer 509 survey on social issues.

([360]) See European Commission (2020).

([361]) Eurofound (2020 b).

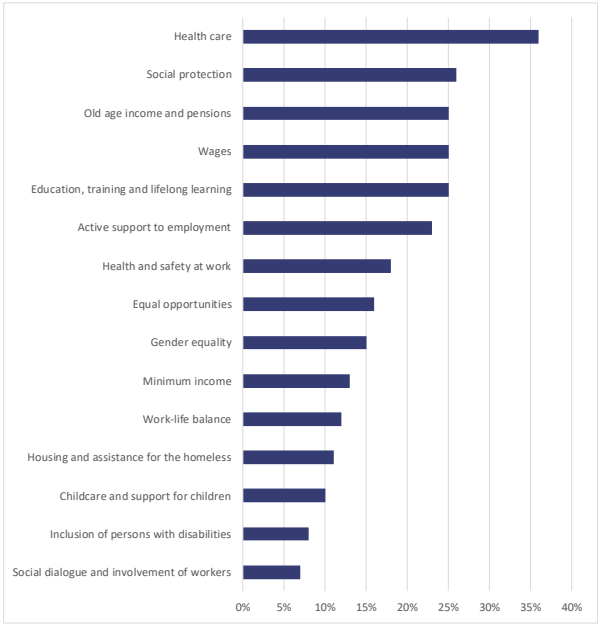
challenging policy discussions stemming from the national Resilience and Recovery Plans ([362]).

The need for capacity building is recognised by the European Commission. It proposed for the new European Social Fund Plus (ESF+) that all Member States shall allocate an appropriate amount of ESF+ resources for building the capacity of social partners and civil society organisations. Furthermore, the Commission's 2020 EU Programme for Employment and Social Innovation (EaSI) budget supports to social partners. It aims to strengthen the role of national social partners in mitigating the economic and social impact of the COVID-19 crisis. In addition, the prerogative budget lines "Support for social dialogue" call for proposals will be strengthened for actions aimed at capacity-building of national social partners affected by the pandemic. The central role, however, for capacity building remains with social partners. In addition, the European Commission provides concrete guidance on how to reinforce social dialogue at national and EU levels. In this respect, Andrea Nahles, Special Advisor to Commissioner Nicolas Schmit has published a Report ([363]), laying out concrete actions feeding into the initiative to support social dialogue at EU and national level social, which the Commission will present in 2022 as set out in the European Pillar of Social Rights Action Plan. This will include the launch of a new award for innovative social dialogue practices; an information and visiting programme for young future social partner leaders; the review of sectoral social dialogue at EU level; and a new supporting framework for social partner agreements at EU level.

([362]) As highlighted by Article 18(4) (q) of the Regulation (EU) 2021/241 of the European Parliament and of the Council of 12 February 2021 establishing the Recovery and Resilience Facility.

([363]) See: https://ec.europa.eu/social/main.jsp?langId=en&catId=89&furtherNews=yes&newsId=9916 (last access: 23.06.2021)

Chart 4.8
Elements of social policies considered important by EU citizens for the future of the EU



Source: Own illustration based on the special Eurobarometer 509 survey on social issues. Click here to download chart

Click here to download chart.

5.2. Adopting new strategies in a changing environment

Economic recovery after COVID-19 is taking place in a changing environment. As highlighted in Section 4, the recovery will be accompanied by major structural changes. The previous section has shown that social partners are actively shaping structural change ([364]). In this context, they are also adapting to tackle climate change. While social partners have the potential to accompany these changes, they will have to adapt and reinvent themselves to keep up with these developments. The following subsection will illustrate how social partners can resolve these tensions. The review below will discuss two main structural changes: digitalisation in the context of the gig economy, and environmental sustainability.

Both employers and trade unions have expressed support for EU's Climate policies ([365]). Some sectors will have to adapt more than others. As opposed to traditional issues dealt with in the realm of collective bargaining, employers and workers have shared interests relating to environmental sustainability. Beyond the traditional motive of earning profits and maintaining jobs, social partners recognise the importance of a future-proof operation. They also have shared interests in those elements of climate policy that help maintain the competitiveness of EU businesses, such as infrastructure investment and emission trading arrangements that align carbon prices faced by EU producers and importers, along with

([364]) Their role in helping the reskilling and upskilling of workers is recognised explicitly in several EU instruments, most notably, ESF+ and Horizon Europe.

([365]) See for example https://www.etuc.org/en/document/etuc-resolution-fit-55-package and https://www.businesseurope.eu/policies/energy-and-environment/climate-change

as public investment in skills. At the same time, employers' and workers' interests on the one hand and the overarching social interest in climate sustainability on the other are not automatically aligned in the context of high-emission sectors, such as coal, where a shift to greener operation would be costly or impracticable ([366]). EU policies, such as the Just Transition Fund, aim at leaving no one behind so that the most directly-affected workers and regions can adapt to the climate transition.

Social partners from different sectors are adopting different strategies to embrace environmental sustainability. For regions dependent on activities related to high carbon intensiveness, the goal should be to gradually replace these activities with more environmentally friendly activities, while ensuring job creation and stability. In the coal sector, social partners are adopting a more defensive strategy. In France, social partners in the sector have been defending the coal-based status quo, whereas in Germany social partners have been demanding a lengthier transition process ([367]). In addition, the works council is to be advised on future product strategies by the management and to be allowed to make proposals. ENEL, an Italian electricity producer, announced in 2017 the closure of two large coal based power plants and its aim to become climate neutral by 2050, underpinned by a collective agreement with Italian trade unions. This included provisions for recruitment combined with apprenticeships to ensure knowledge transfer from old to young and training opportunities to ensure employability and the creation of new skills ([368]). The automobile sector faces two transitions at the same time: decarbonisation and automation. Cooperative industrial relations continue to be of utmost importance in facilitating employment transitions. In Germany, the general works council of Daimler has reached a company level agreement under which worker job security is extended until 2030.

Social partners have also started to adopt new strategies for the new world of work ([369]). Traditional collective bargaining structures, strategies, and methods might not be as effective in the platform economy. Platform workers often work remotely and independently of each other, which may have repercussions for their collective representation. There is great diversity in platform work: workers in the platform economy range from students who are interested in an occasional job to designers or programmers who offer services that are highly paid. In addition to the geographical dispersion, this poses challenges as the workers' needs, demands and preferences may be highly heterogeneous. ETUC is critical of the fact that platforms are often not willing to recognise workers' representations and to enter into dialogue with them, as new topics and issues beyond the traditional collective bargaining topics will have to be addressed. The design of customer ratings or privacy and data protection are new issues arising in the realm of collective bargaining ([370]).

Digitalisation in the workplace is another issue that social partners are confronted with, and actions vary across countries and sectors. Although social partners have taken on the issue of platform work and telework, as discussed in previous sections, there is a variety of social partner involvement across sectors and countries in the broader discussion of workplace digitalisation. A recent survey, carried out in eight countries, revealed that about 63 % of employer and trade union representatives consider digitalisation a concern for the social dialogue within their sector and companies. Yet, the proportion of those who share this assertion variates between 81 % of respondents from Germany, to about 55 % in France, Italy, Portugal and Spain ([371]). In Sweden and Belgium for example, there is consensus that digitalisation should be accommodated in collective bargaining. In the Spanish financial sector, digitalisation has only been discussed in a small number of larger companies. In the postal service and logistics as well the tourism sector, social dialogue has not yet entered the social partners' agenda.

Social partners at the company level have adopted different strategies to accommodate digitalisation. Digitalisation goes beyond telework, and recent evidence suggests that national social partners are adopting increasing numbers of initiatives to tackle related changes. These range from information sharing to consultation and anticipatory negotiation ([372]). A lack of knowledge and expertise among bargaining parties and a dearth of information on digitalisation processes, as well as an absence of coordination along the value chain, prohibit constructive collective bargaining. Generally, existing social dialogue structures were found to impact the adoption of digitalisation into the social partners' agendas. Therefore, well developed social dialogue and collective bargaining structures that are sufficiently agile to take on new issues, are important to address the issue of digitalisation.

A renewed social dialogue to tackle the twin challenge of the digital and green transitions is emerging. The implementation of climate targets and the transition to a low-carbon economy are expected to result in changes to the sectoral composition and quality of employment. Rapid changes in economies and labour markets inevitably entail a modified

([366]) For a more detailed overview over these examples, see: Galgóczi, (2020).

([367]) Galgoczi (2020).

([368]) For a more detailed overview over these examples, see: Galgóczi, (2020).

([369]) European Commission (2019).

([370]) ETUC (2018).

([371]) Franssen et al. (2020).

([372]) This is the result from a study carried out in 8 Member States, focusing on the following sectors: banking tourism, postal and logistical services, and manufacturing. See Teissier & Naedenoen (2020).

agenda for social dialogue. The social partners have started to systematically tackle the new topics arising through a number of joint texts. EU social partners in banking, insurance, telecommunications, urban transport, metal, engineering and technology-based industries, furniture, postal services, electricity, graphical industry and ports have issued joint texts to address the topic of digitisation. Furthermore, the cross-industry social partners also reached an autonomous agreement on digitisation in 2020 ([373]). Strengthening social dialogue institutions and enhancing the inclusiveness of collective representation at all levels will remain key. The European Commission launched a new call for proposals in 2021, which aims at supporting exchanges and dissemination of good practices, innovative approaches and experience, and mutual learning at EU level, in order to sustain social dialogue activities in the context of the COVID-19 crisis ([374]). This call is intended to assist national social partners in continuing their crucial role in developing and implementing joint responses and to contribute to national efforts to protect jobs and support economic recovery strategies.

6. Conclusions

EU level and national social partners have contributed to managing the COVID-19 crisis in many respects. The pandemic has led to economic distress across Member States and has raised health and safety issues. Social partners have been involved in public and private initiatives to ensure health and safety and the incomes of workers, thereby contributing to their increased well-being. The EU social partners developed guidelines on organisational health and safety and highlighted urgently needed public policy measures. At the national level, social partners have contributed to the design and organisation of policies to reduce the socioeconomic impact of the pandemic. In several Member States, they have played an important role for short time work schemes. Yet, in Member States with weak traditions of social dialogue, the speed at which policy measures had to be decided and administered resulted in the non-substantial involvement of social partners in national policymaking.

Countries with strong social dialogue institutions favoured the early involvement of social partners in the deployment of policies and measures. In Member States where the involvement of social partners is traditionally strong, this involvement was guaranteed and in some cases strengthened, despite substantial time pressures. In some cases, social partners facilitated the provision of information to public authorities and to workers. Well-established social dialogue institutions have proven to be important in times of crisis. Where the ties between social partners and public authorities are strong, social partners can contribute with greater ease to the requisite adaptation.

Social partners must play a central role in the recovery and adapting to structural change. Social dialogue is a strong component of the European social model, and facilitates labour market transitions. They can play an important role in national training systems and enhance the adequacy of training and education. Social dialogue gives workers a voice, which increases the acceptance of changes in the production process, while shaping work processes and the creation of new products and services, thereby enhancing innovation and, ultimately, competitiveness.

In many Member States, social partners have accommodated telework. In the structural context of living up to the challenges posed by the macro drivers of change (digitalisation, automation, globalisation and demographic change), as well as in the context of the pandemic, social partners have negotiated a number of agreements to ensure good working conditions and the provision of equipment for employees working from home. Prior to and during the pandemic, social dialogue has proven to be an important enabler of teleworking arrangements.

Social dialogue remains under pressure to constantly adapt. Low coverage of collective bargaining and the need for capacity building of social partners remain important issues for which social partners will need the support of public authorities. The changing world of work raises new challenges, to which social partners must rise. The impact of the crisis on national social dialogue and collective bargaining has varied across Member States. In some Member States, traditional collective bargaining was limited due to sanitary measures, whereas in other Member States, the relevance of tripartite social dialogue increased in light of urgently-needed public interventions.

([373]) This is done through two main channels: outlining a joint dynamic process, taking into account the different responsibilities of the different actors; or by highlighting approaches, measures and actions that employers and workers can use.

([374]) https://ec.europa.eu/social/main.jsp?catId=629&langId=en&callId=605&furtherCalls=yes

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Statistical annex

1. SELECTED INDICATORS

Real GDP (yearly growth)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
European Union 27	0.6	-4.3	2.2	1.8	-0.7	0.0	1.6	2.3	2.0	2.8	2.1	1.6	-6.1
Euro Area 19	0.4	-4.5	2.1	1.7	-0.9	-0.2	1.4	2.0	1.9	2.6	1.9	1.3	-6.5
Belgium	0.4	-2.0	2.9	1.7	0.7	0.5	1.6	2.0	1.3	1.6	1.8	1.8	-6.3 p
Bulgaria	6.1	-3.4	0.6	2.4	0.4	0.3	1.9	4.0	3.8	3.5	3.1	3.7	-4.2
Czechia	2.7	-4.7	2.4	1.8	-0.8	0.0	2.3	5.4	2.5	5.2	3.2	2.3	-5.6
Denmark	-0.5	-4.9	1.9	1.3	0.2	0.9	1.6	2.3	3.2	2.8	2.2	2.8	-2.7
Germany	1.0	-5.7	4.2	3.9	0.4	0.4	2.2	1.5	2.2	2.6	1.3	0.6	-4.8 p
Estonia	-5.1	-14.4	2.7	7.4	3.1	1.3	3.0	1.8	3.2	5.5	4.4	5.0	-2.9
Ireland	-4.4	-5.1	1.8	0.6	0.1	1.2	8.6	25.2	2.0	9.1	8.5	5.6	3.4
Greece	-0.3	-4.3	-5.5 b	-10.1	-7.1	-2.7	0.7	-0.4	-0.5	1.3	1.6 p	1.9 p	-8.2 p
Spain	0.9	-3.8	0.2	-0.8	-3.0	-1.4	1.4	3.8	3.0	3.0	2.4 p	2.0 p	-10.8 p
France	0.3	-2.9	1.9	2.2	0.3	0.6	1.0	1.1	1.1	2.3	1.9	1.8 p	-7.9 p
Croatia	1.9	-7.3	-1.3	-0.2	-2.4	-0.4	-0.3	2.4	3.5	3.4	2.8	2.9 p	-8.0 p
Italy	-1.0	-5.3	1.7	0.7	-3.0	-1.8	0.0	0.8	1.3	1.7	0.9	0.3 p	-8.9 p
Cyprus	3.6	-2.0	2.0	0.4	-3.4	-6.6	-1.8	3.2	6.4	5.2	5.2	3.1 p	-5.1 p
Latvia	-3.3	-14.3	-4.4	6.5	4.3	2.3	1.1	4.0	2.4	3.3	4.0	2.0	-3.6
Lithuania	2.6	-14.8	1.7	6.0	3.8	3.6	3.5	2.0	2.5	4.3	3.9	4.3	-0.9
Luxembourg	-1.3	-4.4	4.9	2.5	-0.4	3.7	4.3	4.3	4.6	1.8	3.1	2.3	-1.3
Hungary	1.1	-6.7	1.1	1.9	-1.4	1.9	4.2	3.8	2.1	4.3	5.4	4.6 p	-5.0 p
Malta	3.8	-1.1	5.5	0.5	4.1	5.5	7.6	9.6	3.8	8.6	5.2	5.5	-7.8
Netherlands	2.2	-3.7	1.3	1.6	-1.0	-0.1	1.4	2.0	2.2	2.9	2.4	1.7 p	-3.7 p
Austria	1.5	-3.8	1.8	2.9	0.7	0.0	0.7	1.0	2.0	2.4	2.6	1.4	-6.3
Poland	4.2	2.8	3.7	4.8	1.3	1.1	3.4	4.2	3.1	4.8	5.4	4.7	-2.7 p
Portugal	0.3	-3.1	1.7	-1.7	-4.1	-0.9	0.8	1.8	2.0	3.5	2.8	2.5 p	-7.6 e
Romania	9.3	-5.5	-3.9	1.9	2.0	3.8	3.6	3.0	4.7	7.3	4.5	4.1 p	-3.9 p
Slovenia	3.5	-7.5	1.3	0.9	-2.6	-1.0	2.8	2.2	3.2	4.8	4.4	3.2	-5.5
Slovakia	5.6	-5.5	5.9	2.8	1.9	0.7	2.6	4.8	2.1	3.0	3.7	2.5	-4.8
Finland	0.8	-8.1	3.2	2.5	-1.4	-0.9	-0.4	0.5	2.8	3.2	1.3	1.3	-2.8
Sweden	-0.5	-4.3	6.0	3.2	-0.6	1.2	2.7	4.5	2.1	2.6	2.0	2.0	-2.8

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Employment rate (% population aged 20-64)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
European Union 27	69.5	68.2	67.8	67.9	67.6	67.5	68.2	69.1	70.1	71.3	72.4	73.1	72.4
Euro Area 19	70.1	68.7	68.3	68.4	68.0	67.7	68.2	69.0	70.0	71.0	72.0	72.7	71.8
Belgium	68.0	67.1	67.6	67.3	67.2	67.2	67.3	67.2	67.7	68.5 b	69.7	70.5	70.0
Bulgaria	70.7	68.8	64.7 b	62.9 b	63.0	63.5	65.1	67.1	67.7	71.3	72.4	75.0	73.4
Czechia	72.4	70.9	70.4	70.9 b	71.5	72.5	73.5	74.8	76.7	78.5	79.9	80.3	79.7
Denmark	78.7 b	76.1	74.9	74.8	74.3	74.3	74.7	75.4	76.0 b	76.6 b	77.5	78.3	77.8
Germany	74.0	74.2	75.0 b	76.5 b	76.9	77.3	77.7	78.0	78.6	79.2	79.9	80.6	80.0 bp
Estonia	77.1	70.0	66.8	70.6	72.2	73.3	74.3	76.5	76.6	78.7	79.5	80.2	78.8
Ireland	73.5	68.0	65.5	64.6	64.5	66.5	68.1	69.9	71.4	73.0	74.1	75.1	73.4
Greece	66.3	65.6 b	63.8	59.6	55.0	52.9	53.3	54.9	56.2	57.8	59.5	61.2	61.1
Spain	68.5	64.0	62.8	62.0	59.6	58.6	59.9	62.0	63.9	65.5	67.0	68.0	65.7
France	69.9 e	69.0 e	68.9 e	68.8 e	68.9 e	69.0 e	69.2	69.5	70.0	70.6	71.3	71.6	71.4
Croatia	64.9	64.2	62.1	59.8	58.1	57.2	59.2	60.6	61.4	63.6	65.2	66.7	66.9
Italy	62.9	61.6	61.0	61.0	60.9	59.7	59.9	60.5	61.6	62.3	63.0	63.5	62.6
Cyprus	76.5	75.3 b	75.0	73.4	70.2	67.2	67.6	67.9	68.7	70.8	73.9	75.7	74.9
Latvia	75.4	66.6	64.3	66.3	68.1	69.7	70.7	72.5	73.2	74.8	76.8	77.4	77.0
Lithuania	72.0	67.0	64.3	66.9	68.5	69.9	71.8	73.3	75.2	76.0	77.8	78.2	76.7
Luxembourg	68.8	70.4 b	70.7	70.1	71.4	71.1	72.1	70.9 b	70.7	71.5	72.1	72.8	72.1
Hungary	61.5	60.1	59.9	60.4	61.6	63.0	66.7	68.9	71.5	73.3	74.4	75.3	75.0
Malta	59.2	59.0	60.1	61.6	63.9	66.2	67.9	69.0	71.1	73.0	75.5	76.8	77.4
Netherlands	76.9	76.8	76.2	76.4	76.6	75.9	75.4	76.4	77.1	78.0	79.2	80.1	80.0
Austria	73.8	73.4	73.9	74.2	74.4	74.6	74.2	74.3	74.8	75.4	76.2	76.8	75.5
Poland	65.0	64.9	64.3 b	64.5	64.7	64.9	66.5	67.8	69.3	70.9	72.2	73.0	73.6
Portugal	73.1	71.1	70.3	68.8 b	66.3	65.4	67.6	69.1	70.6	73.4	75.4	76.1	74.7
Romania	64.4	63.5	64.8 b	63.8	64.8	64.7	65.7	66.0	66.3	68.8	69.9	70.9	70.8
Slovenia	73.0	71.9	70.3	68.4	68.3	67.2	67.7	69.1	70.1	73.4	75.4	76.4	75.6
Slovakia	68.8	66.4	64.6	65.0 b	65.1	65.0	65.9	67.7	69.8	71.1	72.4	73.4	72.5
Finland	75.8	73.5	73.0	73.8	74.0	73.3	73.1	72.9	73.4	74.2	76.3	77.2	76.5
Sweden	80.4	78.3	78.1	79.4	79.4	79.8	80.0	80.5	81.2	81.8	82.4 b	82.1	80.8

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Activity rate (% population aged 15-64)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
European Union 27	70.0	70.1	70.3	70.5	71.0	71.3	71.7	71.9	72.3	72.8	73.1	73.4	72.9
Euro Area 19	71.2	71.2	71.3	71.5	72.0	72.2	72.4	72.5	72.9	73.1	73.4	73.7	73.0
Belgium	67.1	66.9	67.7	66.7	66.9	67.5	67.7	67.6	67.6	68.0 b	68.6	69.0	68.6
Bulgaria	67.8	67.2	66.7 b	65.9 b	67.1	68.4	69.0	69.3	68.7	71.3	71.5	73.2	72.2
Czechia	69.7	70.1	70.2	70.5 b	71.6	72.9	73.5	74.0	75.0	75.9	76.6	76.7	76.4
Denmark	79.3 b	78.7	78.0	77.8	77.2	76.6	76.6	76.9	77.5 b	77.9 b	78.2	79.1	79.0
Germany	75.9	76.3	76.7 b	77.3 b	77.2	77.6	77.7	77.6	77.9	78.2	78.6	79.2	79.3 bp
Estonia	74.2	74.0	73.9	74.7	74.8	75.1	75.2	76.7	77.5	78.8	79.1	78.9	79.3
Ireland	74.8	73.0	71.6	71.2	71.1	71.8	71.8	72.1	72.7	72.7	72.9	73.3	71.9
Greece	66.7	67.4 b	67.8	67.3	67.5	67.5	67.4	67.8	68.2	68.3	68.2	68.4	67.4
Spain	72.7	73.1	73.5	73.9	74.3	74.3	74.2	74.3	74.2	73.9	73.7	73.8	72.2
France	69.5 e	69.9 e	70.0 e	69.9 e	70.4 e	70.9 e	71.0	71.3	71.4	71.5	71.9	71.7	71.0
Croatia	65.8	65.6	65.1	64.1	63.9	63.7	66.1	66.9	65.6	66.4	66.3	66.5	67.1
Italy	62.9	62.3	62.0	62.1	63.5	63.4	63.9	64.0	64.9	65.4	65.6	65.7	64.1
Cyprus	73.6	73.0 b	73.6	73.5	73.5	73.6	74.3	73.9	73.4	73.9	75.0	76.0	75.8
Latvia	74.2	73.5	73.0	72.8	74.4	74.0	74.6	75.7	76.3	77.0	77.7	77.3	78.2
Lithuania	68.4	69.6	70.2	71.4	71.8	72.4	73.7	74.1	75.5	75.9	77.3	78.0	78.5
Luxembourg	66.8	68.7 b	68.2	67.9	69.4	69.9	70.8	70.9 b	70.0	70.2	71.1	72.0	72.2
Hungary	61.2	61.2	61.9	62.4	63.7	64.7	67.0	68.6	70.1	71.2	71.9	72.6	72.8
Malta	59.1	59.4	60.4	61.8	63.9	66.3	67.8	68.8	70.6	72.2	74.7	75.9	77.1
Netherlands	77.8	78.1	77.9	78.1	79.0	79.4	79.0	79.6	79.7	79.7	80.3	80.9	80.9
Austria	73.9	74.3	74.4	74.6	75.1	75.5	75.4	75.5	76.2	76.4	76.8	77.1	76.6
Poland	63.8	64.7	65.3 b	65.7	66.5	67.0	67.9	68.1	68.8	69.6	70.1	70.6	71.0
Portugal	73.9	73.4	73.7	73.6 b	73.4	73.0	73.2	73.4	73.7	74.7	75.1	75.5	74.3
Romania	62.9	63.1	64.9 b	64.1	64.8	64.9	65.7	66.1	65.6	67.3	67.8	68.6	69.2
Slovenia	71.8	71.8	71.5	70.3	70.4	70.5	70.9	71.8	71.6	74.2	75.0	75.2	74.6
Slovakia	68.8	68.4	68.7	68.7 b	69.4	69.9	70.3	70.9	71.9	72.1	72.4	72.7	72.4
Finland	76.0	75.0	74.5	74.9	75.2	75.2	75.4	75.8	75.9	76.7	77.9	78.3	78.3
Sweden	79.3	78.9	79.1	79.9	80.3	81.1	81.5	81.7	82.1	82.5	82.7 b	82.9	82.5

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Unemployment rate (% labour force 15-74)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
European Union 27	7.2	9.1	9.8	9.9	10.8	11.4	10.8	10.0	9.1	8.1	7.2	6.7	7.0
Euro Area 19	7.5	9.6	10.1	10.2	11.3	12.0	11.6	10.8	10.0	9.0	8.1	7.5	7.8
Belgium	7.0	7.9	8.3	7.2	7.6	8.4	8.5	8.5	7.8	7.1 b	6.0	5.4	5.6
Bulgaria	5.6	6.8	10.3 b	11.3 b	12.3	13.0	11.4	9.2	7.6	6.2	5.2	4.2	5.1
Czechia	4.4	6.7	7.3	6.7 b	7.0	7.0	6.1	5.1	4.0	2.9	2.2	2.0	2.6
Denmark	3.7 b	6.4	7.7	7.8	7.8	7.4	6.9	6.3	6.0 b	5.8 b	5.1	5.0	5.6
Germany	7.5	7.8	7.0 b	5.8 b	5.4	5.2	5.0	4.6	4.1	3.8	3.4	3.1	3.8 bp
Estonia	5.5	13.5	16.7	12.3	10.0	8.6	7.4	6.2	6.8	5.8	5.4	4.4	6.8
Ireland	6.8	12.6	14.6	15.4	15.5	13.8	11.9	10.0	8.4	6.7	5.8	5.0	5.7
Greece	7.8	9.6 b	12.7	17.9	24.5	27.5	26.5	24.9	23.6	21.5	19.3	17.3	16.3
Spain	11.3	17.9	19.9	21.4	24.8	26.1	24.5	22.1	19.6	17.2	15.3	14.1	15.5
France	7.4 e	9.1 e	9.3 e	9.2 e	9.8 e	10.3 e	10.3	10.4	10.1	9.4	9.0	8.4	8.0
Croatia	8.6	9.2	11.7	13.7	16.0	17.3	17.3	16.2	13.1	11.2	8.5	6.6	7.5
Italy	6.7	7.8	8.4	8.4	10.7	12.2	12.7	11.9	11.7	11.2	10.6	10.0	9.2
Cyprus	3.7	5.4 b	6.3	7.9	11.9	15.9	16.1	15.0	13.0	11.1	8.4	7.1	7.6
Latvia	7.7	17.5	19.5	16.2	15.0	11.9	10.8	9.9	9.6	8.7	7.4	6.3	8.1
Lithuania	5.8	13.8	17.8	15.4	13.4	11.8	10.7	9.1	7.9	7.1	6.2	6.3	8.5
Luxembourg	5.1	5.1 b	4.4	4.9	5.1	5.9	5.9	6.7 b	6.3	5.5	5.6	5.6	6.8
Hungary	7.8	10.0	11.2	11.0	11.0	10.2	7.7	6.8	5.1	4.2	3.7	3.4	4.3
Malta	6.0	6.9	6.9	6.4	6.2	6.1	5.7	5.4	4.7	4.0	3.7	3.6	4.3
Netherlands	3.7	4.4	5.0	5.0	5.8	7.3	7.4	6.9	6.0	4.9	3.8	3.4	3.8
Austria	4.1	5.3	4.8	4.6	4.9	5.4	5.6	5.7	6.0	5.5	4.9	4.5	5.4
Poland	7.1	8.2	9.7 b	9.7	10.1	10.3	9.0	7.5	6.2	4.9	3.9	3.3	3.2
Portugal	7.7	9.6	11.0	12.9 b	15.8	16.4	14.1	12.6	11.2	9.0	7.1	6.5	6.9
Romania	5.8	6.9	7.0 b	7.2	6.8	7.1	6.8	6.8	5.9	4.9	4.2	3.9	5.0
Slovenia	4.4	5.9	7.3	8.2	8.9	10.1	9.7	9.0	8.0	6.6	5.1	4.5	5.0
Slovakia	9.5	12.0	14.4	13.6 b	14.0	14.2	13.2	11.5	9.7	8.1	6.5	5.8	6.7
Finland	6.4	8.2	8.4	7.8	7.7	8.2	8.7	9.4	8.8	8.6	7.4	6.7	7.8
Sweden	6.2	8.4	8.6	7.8	8.0	8.1	8.0	7.4	7.0	6.7	6.4 b	6.8	8.3

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Youth unemployment rate (% labour force 15-24)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
European Union 27	16.0	20.4	21.5	21.8	23.7	24.4	23.4	21.7	20.0	17.9	16.0	15.0	16.8
Euro Area 19	15.8	20.4	21.2	21.2	23.5	24.2	23.6	22.2	20.8	18.6	16.8	15.6	17.3
Belgium	18.0	21.9	22.4	18.7	19.8	23.7	23.2	22.1	20.1	19.3 b	15.8	14.2	15.3
Bulgaria	12.7	16.2	21.9 b	25.0 b	28.1	28.4	23.8	21.6	17.2	12.9	12.7	8.9	14.2
Czechia	9.9	16.6	18.3	18.1 b	19.5	19.0	15.9	12.6	10.5	7.9	6.7	5.6	8.0
Denmark	9.5 b	13.5	15.6	16.4	15.8	14.8	14.2	12.2	12.2 b	12.4 b	10.5	10.1	11.6
Germany	10.6	11.2	9.8 b	8.5 b	8.0	7.8	7.7	7.2	7.1	6.8	6.2	5.8	7.4 bp
Estonia	12.0	27.4	32.9	22.4	20.9	18.7	15.0	13.1	13.4	12.1	11.8	11.1	17.9
Ireland	13.5	24.5	28.1	29.6	30.8	26.7	23.4	20.2	16.8	14.4	13.8	12.5	15.3
Greece	21.9	25.7 b	33.0	44.7	55.3	58.3	52.4	49.8	47.3	43.6	39.9	35.2	35.0
Spain	24.5	37.7	41.5	46.2	52.9	55.5	53.2	48.3	44.4	38.6	34.3	32.5	38.3
France	19.0 e	23.6 e	23.3 e	22.7 e	24.4 e	24.9 e	24.2	24.7	24.5	22.1	20.8	19.5	20.2
Croatia	23.7	25.2	32.4	36.7	42.1	50.0	45.5	42.3	31.3	27.4	23.7	16.6	21.1
Italy	21.2	25.3	27.9	29.2	35.3	40.0	42.7	40.3	37.8	34.7	32.2	29.2	29.4
Cyprus	9.0	13.8 b	16.6	22.4	27.7	38.9	36.0	32.8	29.1	24.7	20.2	16.6	18.2
Latvia	13.6	33.3	36.2	31.0	28.5	23.2	19.6	16.3	17.3	17.0	12.2	12.4	14.9
Lithuania	13.3 u	29.6	35.7	32.6	26.7	21.9	19.3	16.3	14.5	13.3	11.1	11.9	19.6
Luxembourg	17.9	17.2 b	14.2	16.8	18.8	15.5	22.6	17.3 b	18.9	15.4	14.2	17.0	23.2
Hungary	19.5	26.4	26.4	26.0	28.2	26.6	20.4	17.3	12.9	10.7	10.2	11.4	12.8
Malta	11.7	14.5	13.2	13.3	13.8	12.7	11.7	11.6	10.7	10.6	9.1	9.3	10.7
Netherlands	8.6	10.2	11.1	10.0	11.7	13.2	12.7	11.3	10.8	8.9	7.2	6.7	9.1
Austria	8.5	10.7	9.5	8.9	9.4	9.7	10.3	10.6	11.2	9.8	9.4	8.5	10.5
Poland	17.3	20.6	23.7 b	25.8	26.5	27.3	23.9	20.8	17.7	14.8	11.7	9.9	10.8
Portugal	16.7	20.3	22.8	30.3 b	37.9	38.1	34.8	32.0	28.0	23.9	20.3	18.3	22.6
Romania	18.6	20.8	22.1 b	23.9	22.6	23.7	24.0	21.7	20.6	18.3	16.2	16.8	17.3
Slovenia	10.4	13.6	14.7	15.7	20.6	21.6	20.2	16.3	15.2	11.2	8.8	8.1	14.2
Slovakia	19.0	27.3	33.6	33.4 b	34.0	33.7	29.7	26.5	22.2	18.9	14.9	16.1	19.3
Finland	16.5	21.5	21.4	20.1	19.0	19.9	20.5	22.4	20.1	20.1	17.0	17.2	21.4
Sweden	20.2	25.0	24.8	22.8	23.6	23.5	22.9	20.4	18.9	17.9	17.4 b	20.1	23.9

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Long term unemployment rate (% labour force 15-74)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
European Union 27	2.8	3.1	4.0	4.3	4.9	5.5	5.5	5.0	4.4	3.8	3.2	2.8	2.5
Euro Area 19	2.9	3.4	4.3	4.6	5.2	5.9	6.0	5.5	5.0	4.4	3.8	3.3	2.9
Belgium	3.3	3.5	4.0	3.5	3.4	3.9	4.3	4.4	4.0	3.5 b	2.9	2.3	2.3
Bulgaria	2.9	3.0	4.7 b	6.3 b	6.8	7.4	6.9	5.6	4.5	3.4	3.0	2.4	2.3
Czechia	2.2	2.0	3.0	2.7 b	3.0	3.0	2.7	2.4	1.7	1.0	0.7	0.6	0.6
Denmark	0.5 b	0.6	1.4	1.8	2.1	1.8	1.7	1.6	1.2 b	1.2 b	1.0	0.8	0.9
Germany	3.9	3.5	3.3 b	2.8 b	2.4	2.3	2.2	2.0	1.7	1.6	1.4	1.2	1.1 bp
Estonia	1.7	3.7	7.6	7.1	5.5	3.8	3.3	2.4	2.1	1.9	1.3	0.9	1.2
Ireland	1.7	3.5	6.9	8.8	9.2	8.0	6.6	5.3	4.2	3.0	2.1	1.6	1.3
Greece	3.7	3.9 b	5.7	8.8	14.5	18.5	19.5	18.2	17.0	15.6	13.6	12.2	10.9
Spain	2.0	4.3	7.3	8.9	11.0	13.0	12.9	11.4	9.5	7.7	6.4	5.3	5.0
France	2.9 e	3.3 e	3.9 e	3.9 e	4.2 e	4.5 e	4.5	4.6	4.6	4.2	3.8	3.4	2.9
Croatia	5.3	5.1	6.6	8.4	10.2	11.0	10.1	10.2	6.6	4.6	3.4	2.4	2.1
Italy	3.0	3.4	4.0	4.3	5.6	6.9	7.7	6.9	6.7	6.5	6.2	5.6	4.7
Cyprus	0.5	0.6 b	1.3	1.6	3.6	6.1	7.7	6.8	5.8	4.5	2.7	2.1	2.1
Latvia	1.9	4.5	8.8	8.8	7.8	5.7	4.6	4.5	4.0	3.3	3.1	2.4	2.2
Lithuania	1.3 u	3.3	7.4	8.0	6.6	5.1	4.8	3.9	3.0	2.7	2.0	1.9	2.5
Luxembourg	1.6	1.2 b	1.3	1.4	1.6	1.8	1.6	1.9 b	2.2	2.1	1.4	1.3	1.7
Hungary	3.6	4.2	5.5	5.2	5.0	4.9	3.7	3.1	2.4	1.7	1.4	1.1	1.1
Malta	2.6	2.9	4.1	3.9	3.8	3.5	2.9	2.7	2.4	2.0	1.8	0.9	1.1
Netherlands	1.2	1.1	1.3	1.6	1.9	2.5	2.9	3.0	2.5	1.9	1.4	1.0	0.9
Austria	1.0	1.2	1.2	1.2	1.2	1.3	1.5	1.7	1.9	1.8	1.4	1.1	1.3
Poland	2.4	2.5	3.0 b	3.6	4.1	4.4	3.8	3.0	2.2	1.5	1.0	0.7	0.6
Portugal	3.6	4.2	5.7	6.2 b	7.7	9.3	8.4	7.2	6.2	4.5	3.1	2.8	2.3
Romania	2.4	2.2	2.4 b	2.9	3.0	3.2	2.8	3.0	3.0	2.0	1.8	1.7	1.5
Slovenia	1.9	1.8	3.2	3.6	4.3	5.2	5.3	4.7	4.3	3.1	2.2	1.9	1.9
Slovakia	6.6	6.5	9.2	9.2 b	9.4	10.0	9.3	7.6	5.8	5.1	4.0	3.4	3.2
Finland	1.2	1.4	2.0	1.7	1.6	1.7	1.9	2.3	2.3	2.1	1.6	1.2	1.2
Sweden	0.8	1.1	1.6	1.5	1.5	1.4	1.4	1.5	1.3	1.2	1.1 b	0.9	1.1

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At-risk-of-poverty or social exclusion (% of total population)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
European Union 27			23.9 e	24.5 e	24.9 e	24.6 e	24.5 e	23.8 e	23.7 e	22.5 e	21.6 e	20.9 e
Euro Area 19	21.7	21.6	22.0	22.9	23.3	23.1	23.5	23.1	23.1	22.1	21.6	20.8
Belgium	20.8	20.2	20.8	21.0	21.6	20.8	21.2	21.1	20.9	20.6	20.0	19.5 b
Bulgaria	44.8 b	46.2	49.2	49.1	49.3	48.0	40.1 b	41.3	40.4 b	38.9	32.8	32.8
Czechia	15.3	14.0	14.4	15.3	15.4	14.6	14.8	14.0	13.3	12.2	12.2	12.5
Denmark	16.3	17.6	18.3	17.6 b	17.5	18.3	17.9	17.7	16.8	17.2	17.0	16.3
Germany	20.1	20.0	19.7	19.9	19.6	20.3	20.6	20.0	19.7	19.0	18.7	17.4
Estonia	21.8	23.4	21.7	23.1	23.4	23.5	26.0 b	24.2	24.4	23.4	24.4	24.3
Ireland	23.7	25.7	27.3	29.4	30.1	29.9	28.3	26.2	24.4	22.7	21.1	20.6
Greece	28.1	27.6	27.7	31.0	34.6	35.7	36.0	35.7	35.6	34.8	31.8	30.0
Spain	23.8 b	24.7	26.1	26.7	27.2	27.3	29.2	28.6	27.9	26.6	26.1	25.3
France	18.5 b	18.5	19.2	19.3	19.1	18.1	18.5	17.7	18.2	17.0	17.4	17.9
Croatia			31.1	32.6	32.6	29.9	29.3	29.1	27.9	26.4	24.8	23.3
Italy	25.5	24.9	25.0	28.1	29.9	28.5	28.3	28.7	30.0	28.9	27.3	25.6
Cyprus	23.3 b	23.5	24.6	24.6	27.1	27.8	27.4	28.9	27.7	25.2	23.9	22.3
Latvia	34.2 b	37.9	38.2	40.1	36.2	35.1	32.7	30.9	28.5	28.2	28.4	27.3
Lithuania	28.3	29.6	34.0	33.1	32.5	30.8	27.3	29.3	30.1	29.6	28.3	26.3
Luxembourg	15.5	17.8	17.1	16.8	18.4	19.0	19.0	18.5	19.1 b	19.4	20.7	20.6
Hungary	28.2	29.6	29.9	31.5	33.5	34.8	31.8	28.2	26.3	25.6	19.6	18.9
Malta	20.1	20.3	21.2	22.1	23.1	24.6	23.9	23.0	20.3	19.3	19.0	20.1
Netherlands	14.9	15.1	15.1	15.7	15.0	15.9	16.5	16.4	16.7 b	17.0	16.7	16.5
Austria	20.6 b	19.1	18.9	19.2	18.5	18.8	19.2	18.3	18.0	18.1	17.5	16.9
Poland	30.5 b	27.8	27.8	27.2	26.7	25.8	24.7	23.4	21.9	19.5	18.9	18.2
Portugal	26.0	24.9	25.3	24.4	25.3	27.5	27.5	26.6	25.1	23.3	21.6	21.6
Romania	44.2	43.0	41.5	40.9	43.2	41.9	40.3	37.4	38.8	35.7	32.5	31.2
Slovenia	18.5	17.1	18.3	19.3	19.6	20.4	20.4	19.2	18.4	17.1	16.2	14.4
Slovakia	20.6	19.6	20.6	20.6	20.5	19.8	18.4	18.4	18.1	16.3	16.3	16.4
Finland	17.4	16.9	16.9	17.9	17.2	16.0	17.3	16.8	16.6	15.7	16.5	15.6
Sweden	16.7 b	17.8	17.7	18.5	17.7	18.3	18.2	18.6	18.3	17.7	18.0	18.8

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At-risk-of-poverty (% of total population)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
European Union 27			16.5 e	16.9 e	16.9 e	16.8 e	17.3 e	17.4 e	17.5 e	16.9 e	16.8 e	16.5 e
Euro Area 19	16.1	16.2	16.3	16.8	16.9	16.7	17.2	17.2	17.4	17.0	17.0	16.4
Belgium	14.7	14.6	14.6	15.3	15.3	15.1	15.5	14.9	15.5	15.9	16.4	14.8 b
Bulgaria	21.4	21.8	20.7	22.2	21.2	21.0	21.8	22.0	22.9 b	23.4	22.0	22.6
Czechia	9.0	8.6	9.0	9.8	9.6	8.6	9.7	9.7	9.7	9.1	9.6	10.1
Denmark	11.8	13.1	13.3	12.1	12.0	11.9	12.1	12.2	11.9	12.4	12.7	12.5
Germany	15.2	15.5	15.6	15.8	16.1	16.1	16.7	16.7	16.5	16.1	16.0	14.8
Estonia	19.5	19.7	15.8	17.5	17.5	18.6	21.8	21.6	21.7	21.0	21.9	21.7
Ireland	15.5	15.0	15.2	15.2	16.3	15.7	16.8	16.2	16.8	15.6	14.9	13.1
Greece	20.1	19.7	20.1	21.4	23.1	23.1	22.1	21.4	21.2	20.2	18.5	17.9
Spain	19.8	20.4	20.7	20.6	20.8	20.4	22.2	22.1	22.3	21.6	21.5	20.7
France	12.5	12.9	13.3	14.0	14.1	13.7	13.3	13.6	13.6	13.2	13.4	13.6
Croatia			20.6	20.9	20.4	19.5	19.4	20.0	19.5	20.0	19.3	18.3
Italy	18.9	18.4	18.7	19.8	19.5	19.3	19.4	19.9	20.6	20.3	20.3	20.1
Cyprus	15.9	15.8	15.6	14.8	14.7	15.3	14.4	16.2	16.1	15.7	15.4	14.7
Latvia	25.9	26.4	20.9	19.0	19.2	19.4	21.2	22.5	21.8	22.1	23.3	22.9
Lithuania	20.9	20.3	20.5	19.2	18.6	20.6	19.1	22.2	21.9	22.9	22.9	20.6
Luxembourg	13.4	14.9	14.5	13.6	15.1	15.9	16.4	15.3	15.8 b	16.4	16.7	17.5
Hungary	12.4	12.4	12.3	14.1	14.3	15.0	15.0	14.9	14.5	13.4	12.8	12.3
Malta	15.3	14.9	15.5	15.6	15.1	15.8	15.8	16.6	16.5	16.7	16.8	17.1
Netherlands	10.5	11.1	10.3	11.0	10.1	10.4	11.6	11.6	12.7 b	13.2	13.3	13.2
Austria	15.2	14.5	14.7	14.5	14.4	14.4	14.1	13.9	14.1	14.4	14.3	13.3
Poland	16.9	17.1	17.6	17.7	17.1	17.3	17.0	17.6	17.3	15.0	14.8	15.4
Portugal	18.5	17.9	17.9	18.0	17.9	18.7	19.5	19.5	19.0	18.3	17.3	17.2
Romania	23.6	22.1	21.6	22.3	22.9	23.0	25.1	25.4	25.3	23.6	23.5	23.8
Slovenia	12.3	11.3	12.7	13.6	13.5	14.5	14.5	14.3	13.9	13.3	13.3	12.0
Slovakia	10.9	11.0	12.0	13.0	13.2	12.8	12.6	12.3	12.7	12.4	12.2	11.9
Finland	13.6	13.8	13.1	13.7	13.2	11.8	12.8	12.4	11.6	11.5	12.0	11.6
Sweden	13.5 b	14.4	14.8	15.4	15.2	16.0	15.6	16.3	16.2	15.8	16.4	17.1

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Severe Material Deprivation (% of total population)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
European Union 27			8.9 e	9.4 e	10.2 e	9.8 e	9.1 e	8.4 e	7.9 e	6.9 e	6.1 e	5.5 e
Euro Area 19	5.9	6.0	6.1	6.9	7.8	7.5	7.4	7.0	6.6	5.9	5.5	4.9
Belgium	5.6	5.2	5.9	5.7	6.3	5.1	5.9	5.8	5.5	5.2	5.0	4.4 b
Bulgaria	41.2	41.9	45.7	43.6	44.1	43.0	33.1	34.2	31.9 b	30.0	20.9	20.9
Czechia	6.8	6.1	6.2	6.1	6.6	6.6	6.7	5.6	4.8	3.7	2.8	2.7
Denmark	2.0	2.3	2.7	2.3	2.7	3.6	3.2	3.7	2.6	3.1	3.4	2.6
Germany	5.5	5.4	4.5	5.3	4.9	5.4	5.0	4.4	3.7	3.4	3.1	2.6
Estonia	4.9	6.2	9.0	8.7	9.4	7.6	6.2	4.5	4.7	4.1	3.8	3.3
Ireland	5.5	6.1	5.7	7.8	9.9	9.9	9.2	8.5	6.7	5.2	4.9	5.4
Greece	11.2	11.0	11.6	15.2	19.5	20.3	21.5	22.2	22.4	21.1	16.7	16.2
Spain	3.6	4.5	4.9	4.5	5.8	6.2	7.1	6.4	5.8	5.1	5.4	4.7
France	5.4	5.6	5.8	5.2	5.3	4.9	4.8	4.5	4.4	4.1	4.7	4.7
Croatia			14.3	15.2	15.9	14.7	13.9	13.7	12.5	10.3	8.6	7.2
Italy	7.5	7.3	7.4	11.1	14.5	12.3	11.6	11.5	12.1	10.1	8.5	7.4
Cyprus	9.1	9.5	11.2	11.7	15.0	16.1	15.3	15.4	13.6	11.5	10.2	9.1
Latvia	19.3	22.1	27.6	31.0	25.6	24.0	19.2	16.4	12.8	11.3	9.5	7.8
Lithuania	12.5	15.6	19.9	19.0	19.8	16.0	13.6	13.9	13.5	12.4	11.1	9.4
Luxembourg	0.7	1.1	0.5	1.2	1.3	1.8	1.4	2.0	1.6 b	1.2	1.3	1.3
Hungary	17.9	20.3	21.6	23.4	26.3	27.8	24.0	19.4	16.2	14.5	10.1	8.7
Malta	4.3	5.0	6.5	6.6	9.2	10.2	10.3	8.5	4.4	3.3	3.0	3.6
Netherlands	1.5	1.4	2.2	2.5	2.3	2.5	3.2	2.6	2.6 b	2.6	2.4	2.5
Austria	5.9	4.6	4.3	4.0	4.0	4.2	4.0	3.6	3.0	3.7	2.8	2.6
Poland	17.7 b	15.0	14.2	13.0	13.5	11.9	10.4	8.1	6.7	5.9	4.7	3.6
Portugal	9.7	9.1	9.0	8.3	8.6	10.9	10.6	9.6	8.4	6.9	6.0	5.6
Romania	32.7	32.1	30.5	29.5	31.1	29.8	25.9	22.7	23.8	19.7	16.8	14.5
Slovenia	6.7	6.1	5.9	6.1	6.6	6.7	6.6	5.8	5.4	4.6	3.7	2.6
Slovakia	11.8	11.1	11.4	10.6	10.5	10.2	9.9	9.0	8.2	7.0	7.0	7.9
Finland	3.5	2.8	2.8	3.2	2.9	2.5	2.8	2.2	2.2	2.1	2.8	2.4
Sweden	1.8 b	2.0	1.9	1.7	1.8	1.9	1.0	1.1	0.8	1.1	1.6	1.8

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Share of people living in low work intensity households (% of people aged 0-59)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
European Union 27			9.9 e	10.4 e	10.2 e	10.6 e	11.1 e	10.5 e	10.4 e	9.4 e	8.8 e	8.3 e
Euro Area 19	9.3	9.1	10.4	11.0	10.7	11.2	11.9	11.2	11.1	10.2	9.4	9.0
Belgium	11.7	12.3	12.7	13.8	13.9	14.0	14.6	14.9	14.9	13.9	12.6	12.4 b
Bulgaria	8.1 b	6.9	8.0	11.0	12.5	13.0	12.1	11.6	11.9 b	11.1	9.0	9.3
Czechia	7.2	6.0	6.4	6.6	6.8	6.9	7.6	6.8	6.7	5.5	4.5	4.2
Denmark	8.5	8.8	10.6	10.5	10.2	11.9	12.2	11.6	10.7	10.0	9.8	9.3
Germany	11.7	10.9	11.2	11.2	9.9	9.9	10.0	9.8	9.6	8.7	8.1	7.6
Estonia	5.3	5.6	9.0	10.0	9.1	8.4	7.6 b	6.6	5.8	5.8	5.2	5.4
Ireland	13.7	20.0	22.9	24.2	23.4	23.9	21.0	18.7	17.8	16.2	13.0	13.6
Greece	7.5	6.6	7.6	12.0	14.2	18.2	17.2	16.8	17.2	15.6	14.6	13.8
Spain	6.6	7.6	10.8	13.4	14.3	15.7	17.1	15.4	14.9	12.8	10.7	10.8
France	8.8	8.4	9.9	9.4	8.4	8.1	9.6	8.6	8.4	8.1	8.0	7.9
Croatia			13.9	15.9	16.8	14.8	14.7	14.4	13.0	12.2	11.2	9.2
Italy	10.4	9.2	10.6	10.5	10.6	11.3	12.1	11.7	12.8	11.8	11.3	10.0
Cyprus	4.5 b	4.0	4.9	4.9	6.5	7.9	9.7	10.9	10.6	9.4	8.6	6.8
Latvia	5.4	7.4	12.6	12.6	11.7	10.0	9.6	7.8	7.2	7.8	7.6	7.6
Lithuania	6.1	7.2	9.5	12.7	11.4	11.0	8.8	9.2	10.2	9.7	9.0	7.5
Luxembourg	4.7	6.3	5.5	5.8	6.1	6.6	6.1	5.7	6.6 b	6.9	8.3	7.5
Hungary	12.0	11.3	11.9	12.8	13.5	13.6	12.8	9.4	8.2	6.6	5.7	5.0
Malta	8.6	9.2	9.2	8.9	9.0	9.1	9.9	9.2	7.3	7.1	5.5	4.9
Netherlands	8.2	8.5	8.4	8.9	8.9	9.3	10.2	10.2	9.7 b	9.5	8.6	9.2
Austria	7.4 b	7.1	7.8	8.6	7.7	7.8	9.1	8.2	8.1	8.3	7.3	7.8
Poland	8.0	6.9	7.3	6.9	6.9	7.2	7.3	6.9	6.4	5.7	5.6	4.7
Portugal	6.3	7.0	8.6	8.3	10.1	12.2	12.2	10.9	9.1	8.0	7.2	6.2
Romania	8.5	8.1	7.7	7.3	7.9	7.6	7.2	7.9	8.2	6.9	7.4	6.0
Slovenia	6.7	5.6	7.0	7.6	7.5	8.0	8.7	7.4	7.4	6.2	5.4	5.2
Slovakia	5.2	5.6	7.9	7.7	7.2	7.6	7.1	7.1	6.5	5.4	5.2	6.2
Finland	7.5	8.4	9.3	10.0	9.3	9.0	10.0	10.8	11.4	10.7	10.8	9.7
Sweden	7.0 b	8.5	8.5	9.4	8.1	9.4	9.0	8.7	8.5	8.8	9.1	8.6

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Income quintile share ratio S80/S20

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
European Union 27			4.9	5.0	5.0	5.1	5.2 e	5.2 e	5.2 e	5.0 e	5.1 e	5.0 e
Euro Area 19	4.9	4.9	4.9	5.0	5.0	5.1	5.2	5.2	5.2	5.1	5.1	5.0
Belgium	4.1	3.9	3.9	3.9	4.0	3.8	3.8	3.8	3.9	3.8	3.8	3.6 b
Bulgaria	6.5	5.9	5.9	6.5	6.1	6.6	6.8	7.1	7.7 b	8.2	7.7	8.1
Czechia	3.4	3.5	3.5	3.5	3.5	3.4	3.5	3.5	3.5	3.4	3.3	3.3
Denmark	3.6	4.6	4.4 b	4.0 b	3.9	4.0	4.1	4.1	4.1	4.1	4.1	4.1
Germany	4.8	4.5	4.5	4.5	4.3	4.6	5.1	4.8	4.6	4.5	5.1	4.9
Estonia	5.0	5.0	5.0	5.4	5.4	5.5	6.5 b	6.2	5.6	5.4	5.1	5.1
Ireland	4.4	4.2	4.7	4.6	4.8	4.7	4.9	4.5	4.5	4.6	4.2	4.0
Greece	5.9	5.8	5.6	6.0	6.6	6.6	6.5	6.5	6.6	6.1	5.5	5.1
Spain	5.6 b	5.9	6.2	6.3	6.5	6.3	6.8	6.9	6.6	6.6	6.0	5.9
France	4.4 b	4.4	4.4	4.6	4.5	4.5	4.3	4.3	4.3	4.3	4.2	4.3
Croatia			5.5	5.6	5.4	5.3	5.1	5.2	5.0	5.0	5.0	4.8
Italy	5.2	5.3	5.4	5.7	5.6	5.9	5.8	5.8	6.3	5.9	6.1	6.0
Cyprus	4.3 b	4.4	4.5	4.3	4.7	4.9	5.4	5.2	4.9	4.6	4.3	4.6
Latvia	7.3	7.4	6.8	6.5	6.5	6.3	6.5	6.5	6.2	6.3	6.8	6.5
Lithuania	6.1	6.4	7.4	5.8	5.3	6.1	6.1	7.5	7.1	7.3	7.1	6.4
Luxembourg	4.1	4.3	4.1	4.0	4.1	4.6	4.4	4.3	4.6 b	4.6	5.2	5.3
Hungary	3.6	3.5	3.4	3.9	4.0	4.3	4.3	4.3	4.3	4.3	4.4	4.2
Malta	4.3	4.0	4.3	4.0	3.9	4.1	4.1	4.2	4.2	4.2	4.3	4.2
Netherlands	4.0	4.0	3.7	3.8	3.6	3.6	3.8	3.8	3.9 b	4.0	4.1	3.9
Austria	4.2 b	4.2	4.3	4.1	4.2	4.1	4.1	4.1	4.1	4.3	4.0	4.2
Poland	5.1	5.0	5.0	5.0	4.9	4.9	4.9	4.9	4.8	4.6	4.3	4.4
Portugal	6.1	6.0	5.6	5.7	5.8	6.0	6.2	6.0	5.9	5.8	5.2	5.2
Romania	7.0	6.5	6.1	6.2	6.6	6.8	7.2	8.3	7.2	6.5	7.2	7.1
Slovenia	3.4	3.2	3.4	3.5	3.4	3.6	3.7	3.6	3.6	3.4	3.4	3.4
Slovakia	3.4	3.6	3.8	3.8	3.7	3.6	3.9	3.5	3.6	3.5	3.0	3.3
Finland	3.8	3.7	3.6	3.7	3.7	3.6	3.6	3.6	3.6	3.5	3.7	3.7
Sweden	3.7 b	4.0	3.9	4.0	4.0	4.0	4.2	4.1	4.3	4.3	4.1	4.3

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NEET: Young people neither in employment nor in education and training (% of total population aged 15-29)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
European Union 27	13.0	14.8	15.3	15.4	15.9	16.1	15.6	15.1	14.4	13.6	13.0	12.5	13.7
Euro Area 19	13.2	14.9	15.3	15.2	15.8	15.9	15.5	15.0	14.4	13.7	13.1	12.6	13.8
Belgium	12.0	12.8	13.0	13.8	14.4	14.9	14.1	14.4	13.0	12.6 b	12.0	11.8	12.0
Bulgaria	18.5	20.8	23.5 b	24.7 b	24.7	25.7	24.0	22.2	22.4	18.9	18.1	16.7	18.1
Czechia	10.7	12.7	12.9	12.1 b	12.9	12.8	12.1	11.8	11.1	10.0	9.5	9.8	11.0
Denmark	5.8 b	7.4	8.2	8.4	9.0	8.2	8.0	8.5	8.4 b	9.8 b	9.6	9.6	10.2
Germany	11.0	11.4	10.8 b	9.7 b	9.3	8.7	8.7	8.5	8.9	8.5	7.9	7.6	8.6 bp
Estonia	11.7	18.3	18.1	14.7	15.1	14.3	13.7	12.5	13.8	11.0	11.7	9.8	11.2
Ireland	12.5	18.3	19.4	19.1	19.2	16.4	15.2	14.2	12.6	10.9	11.2	11.4	14.1
Greece	14.8	15.9 b	18.6	23.0	26.8	28.5	26.7	24.1	22.2	21.3	19.5	17.7	18.7
Spain	15.3	19.9	20.0	20.6	22.2	22.5	20.7	19.4	18.1	16.4	15.3	14.9	17.3
France							14.1	14.6	14.2	13.8	13.5	12.9	14.0
Croatia	13.0	14.9	17.6	19.1	19.7	22.3	21.8	19.9	19.5	17.9	15.6	14.2	14.6
Italy	19.2	20.4	21.9	22.5	23.7	25.9	26.1	25.5	24.2	24.0	23.3	22.1	23.3
Cyprus	10.9	11.5 b	12.9	14.8	17.3	20.4	19.5	18.5	18.0	17.6	14.9	14.1	15.3
Latvia	13.6	20.8	20.7	19.1	17.2	15.6	15.2	13.8	13.2	12.3	11.6	10.3	11.9
Lithuania	11.9	15.0	17.0	14.7	13.9	13.7	12.9	11.8	10.7	10.2	9.3	10.9	13.0
Luxembourg	9.2	7.5 b	6.1	6.6	7.6	7.2	6.5	7.6 b	6.8	6.6	7.5	6.5	7.7
Hungary	15.9	17.9	17.7	17.6	18.7	18.4	16.4	15.1	14.1	13.3	12.9	13.2	14.7
Malta	11.4	12.6	12.2	12.1	12.0	10.9	11.6	11.8	9.4	8.8	7.3	7.9	9.4
Netherlands	5.0	5.8	6.1	5.9	6.5	7.5	7.6	6.7	6.3	5.9	5.7	5.7	5.7
Austria	8.9	9.6	9.1	8.5	8.2	8.6	9.3	8.7	8.9	8.4	8.4	8.3	9.5
Poland	12.7	14.0	14.8 b	15.2	15.7	16.2	15.5	14.6	13.8	12.9	12.1	12.0	12.9
Portugal	11.9	12.5	13.6	13.9 b	15.6	16.4	14.6	13.2	12.8	10.6	9.6	9.2	11.0
Romania	13.2	15.7	18.9 b	19.5	19.3	19.6	19.9	20.9	20.2	17.8	17.0	16.8	16.6
Slovenia	7.5	9.3	9.4	9.4	11.8	12.9	12.9	12.3	10.9	9.3	8.8	8.8	9.2
Slovakia	15.3	17.3	19.0	18.7 b	18.8	19.0	18.2	17.2	15.9	16.0	14.6	14.5	15.2
Finland	9.0	11.3	10.5	10.0	10.3	10.9	11.8	12.4	11.7	10.9	10.1	9.5	10.3
Sweden	8.0	9.9	8.3	7.9	8.4	7.8	7.8	7.4	7.0	6.8	6.9 b	6.3	7.2

Click here to download table.

2. DATA SOURCES AND DEFINITIONS

Most of the data used in this report originates from Eurostat, the Statistical Office of the European Union. The main data sources used are:

- European Union Labour Force Survey (EU-LFS):

– https://ec.europa.eu/eurostat/statistics-explained/index.php?title=EU_labour_force_survey_statistics

- ESA2010 National Accounts:

– https://ec.europa.eu/eurostat/statistics-explained/index.php?title=National_accounts_(incl._GDP)

- EU-Statistics on Income and Living Conditions (EU-SILC):

– https://ec.europa.eu/eurostat/statistics-explained/index.php?title=EU_statistics_on_income_and_living_conditions_(EU-SILC)_methodology

2.1 Definitions and data sources of the selected indicators

Real GDP: Gross Domestic Product (GDP), volume, annual change (Source: Eurostat, ESA2010 National Accounts [nama_10_gdp]).

Employment rate: number of people employed divided by the population in the 20-64 age bracket (Source: Eurostat, EU-LFS [lfsi_emp_a]).

Activity rate: labour force (employed and unemployed) as a share of total population in the 15-64 age group (Source: Eurostat, EU-LFS [lfsi_emp_a]).

Unemployment and youth unemployment rate: unemployed as a share of the labour force (employed and unemployed persons) in the (respectively) 15-74 and 15-24 age group (Source: Eurostat, EU-LFS [une_rt_a]).

Long-term unemployment rate: persons in the 15-74 age group unemployed for a duration of 12 months or more as a share of the labour force (Source: Eurostat, EU-LFS [une_ltu_a]).

At-risk-of-poverty or social exclusion rate. Percentage of a population representing the sum of persons who are: at risk of poverty or severely materially deprived or living in households with very low work intensity (Eurostat, EU-SILC [ilc_peps01]).

At-risk-of-poverty rate. Share of people with an equivalised disposable income (after social transfer) below the at-risk-of-poverty threshold, which is set at 60 % of the national median equivalised disposable income after social transfers (Eurostat, EU-SILC [ilc_li02]).

Severe Material Deprivation rate. Inability to afford some items (at least 4 on a list of 9) considered by most people to be desirable or even necessary to lead an adequate life (Eurostat, EU-SILC [ilc_mddd11]).

Share of people living in low work intensity households. Share of persons living in a household having a work intensity below a threshold set at 0.20. The work intensity of a household is the ratio of the total number of months that all working-age household members have worked during the income reference year and the total number of months the same household members theoretically could have worked in the same period (Eurostat, EU-SILC [ilc_lvhl11]).

Income quintile share ratio S80/S20. Ratio of total income received by the 20 % of the population with the highest income (the top quintile) to that received by the 20 % of the population with the lowest income (the bottom quintile) (Eurostat, EU-SILC [ilc_di11]).

NEET: Young people not in employment, education or training. Share of people aged 15 to 29 who have left formal education with at most lower secondary education and who are not employed (i.e. either unemployed or economically inactive) nor engaged in any kind of further (formal or non-formal) education or training (Eurostat, EU-LFS [lfsi_neet_a]).

2.2 Footnotes in selected indicators tables

b = break in time series ; e = estimated ; p = provisional

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