

# 1 The COVID-19 crisis in urban and rural areas

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The COVID-19 pandemic has brought much human suffering. It has underlined that risks to the foundations of human well-being are real global threats with multiple knock-on effects on economy and society. While the crisis is global, the impacts are territorially different. Well-connected urban areas were among the first exposed to the pandemic. In rural areas, older and less healthy populations often faced limited healthcare capacity. In urban and rural regions alike, poor areas with crowded living and working conditions have suffered worse health outcomes.

The economic crisis COVID-19 has triggered exceeds the global financial and economic crisis from 2008 in scale and regional differentiation. Employment at risk varied from less than 15% to more than 35% across 314 regions in 2020, often reflecting sectoral specialisation, such as in tourism. Potentials for remote working are also uneven. Differences in non-standard employment contribute to regionally different employment and poverty impacts across regions. This includes undeclared, temporary or self-employed workers, who often benefit less from social protection.

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## COVID-19 has hit regions across the world but timing and impacts have differed

Since the World Health Organization (WHO) declared COVID-19 a “public health emergency of international concern” on 30 January 2020, the pandemic has triggered a global crisis, characterised by multiple knock-on effects on economies and societies, making this a systemic crisis. The impacts differ strongly across territories, including within countries. This applies to the spread of the virus and its health consequences as well as to the impacts of the ensuing economic crisis and its effects on employment and poverty. The COVID-19 pandemic, therefore, offers lessons in preventing and coping with systemic crises in the future.

### ***COVID-19 has hit urban regions early***

At the beginning of the pandemic, some of the largest global cities (e.g. London, Madrid, Milan, New York City) had the highest incidence of COVID-19 cases per capita. Epidemiological models predicted that without mitigation strategies, the disease would spread faster in urban metropolitan areas than rural areas (Stier, Berman and Bettencourt, 2020<sup>[11]</sup>). However, many areas that were initially hard hit by COVID-19 enacted containment measures such as widespread closures of commerce and strict limits on travel. These rules, combined with voluntary social distancing, led to large declines in mobility by foot, car and public transit, particularly in the largest cities (Ramuni, 2020<sup>[21]</sup>).

Indeed, some of the densest cities in the world managed to bring initial outbreaks of COVID-19 under control with a very low incidence of infections and deaths. For example, Australia, Japan and South Korea brought prevalence down dramatically – including in cities like Seoul, Sydney and Tokyo – emphasising anticipation, early preparation and a proactive approach when caseloads were still low and using mitigation measures such as mask-wearing (Chapter 2).

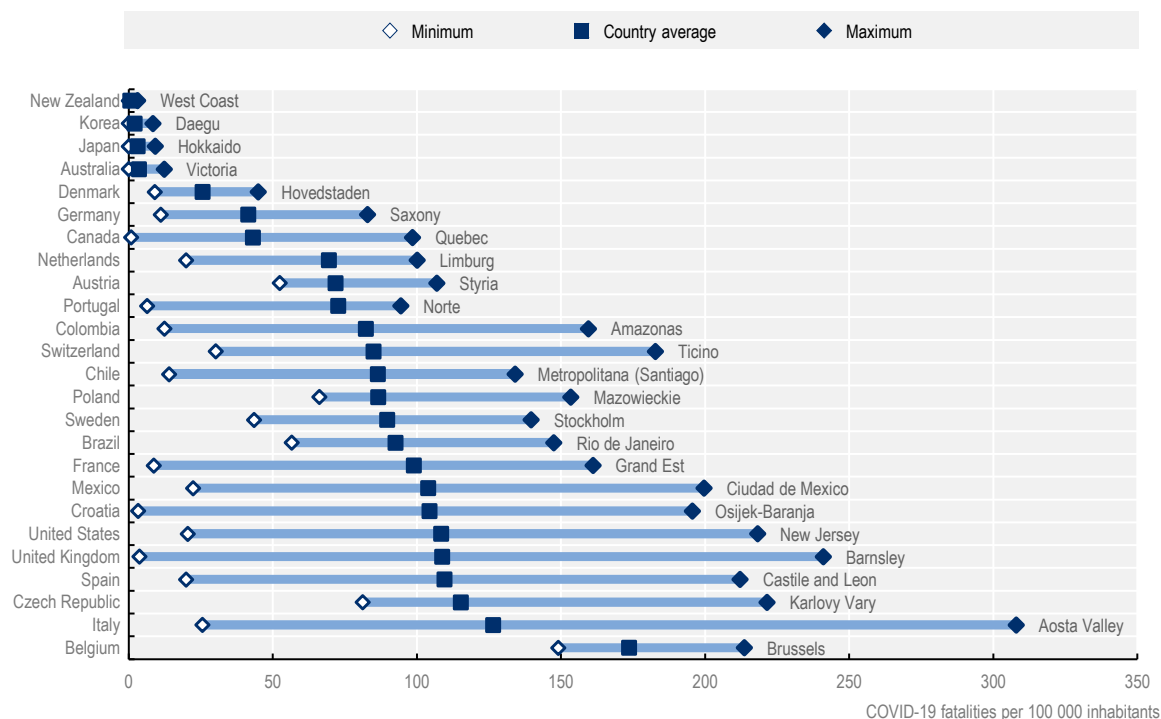
Whilst density itself does not appear to be a determining factor, in part reflecting the strong policy responses (Hamidi, Sabouri and Ewing, 2020<sup>[3]</sup>), many large cities such as Brussels, Mexico City, Paris, Santiago de Chile and Stockholm have fared worse than other regions (Figure 1.1). Places marked with inequalities and a high concentration of urban poor living in crowded housing do appear to be more vulnerable than those that are better resourced, less crowded and more equal (Iacobucci, 2020<sup>[41]</sup>).

Most cities rely on public transit networks but these do not appear to have been a significant vector of transmission (Florida, Rodriguez-Pose and Storper, 2020<sup>[5]</sup>). For instance, contact-tracing efforts in France and Japan have not identified any coronavirus clusters from transit use. There are a number of factors that may help to explain this. Coronavirus transmission may be lower in trains and subways (especially given the fact that many had advanced ventilation systems before COVID-19) than other enclosed spaces because commuters usually stay for brief periods of time and refrain from talking. In most OECD cities, widespread avoidance of public transit has continued since the onset of COVID-19, resulting in less crowded travel conditions coupled with mitigation measures such as mask-wearing rules to limit the virus’ spread. Equally, it is possible that contact tracing has not identified significant numbers of virus transmission on transit systems because of the dispersed nature of transit compared to other settings (O’Sullivan, 2020<sup>[6]</sup>). Certainly, the high incidence rates among public transit drivers and operators suggests some caution in interpretation, at least with respect to long travel times. Nevertheless, the evidence points strongly to household contacts as being the main source of contagion, followed by workplaces (Brandily et al., 2020<sup>[7]</sup>).

Large, global cities experienced earlier cases of COVID-19, due to their strong connectedness to other places. For example, South German and Northern Italian regions and their cities may well have been hit early within their countries because of their stronger connections to China via global value chains.

## Figure 1.1. Within-country differences in COVID-19 mortality

COVID-19 fatalities per 100 000 inhabitants, TL2 regions, as of January 2021



Note: COVID-19 mortality definitions and their attribution to location differ across countries. For example the location may be where death occurred or where the deceased lived. The 24 countries are OECD countries plus Brazil and Croatia. In some countries, including Belgium and France, the location of death is recorded rather than the location in which the deceased lived. As of the end of 2020, there were no subnational data for Estonia, Finland, Greece, Hungary, Iceland, Ireland, Israel, Latvia, Lithuania, Luxembourg, Norway, the Slovak Republic and Slovenia. For New Zealand, data is available by District Health Boards. For Canada and Japan, one province (Prince Edward Island) and one prefecture (Iwate) respectively are missing. For the United States, only the 50 states are considered. In the United Kingdom, data is available for upper-tier local authorities. Data were retrieved on 7 January 2021.

Source: OECD (2020<sup>[9]</sup>), "The territorial impact of COVID-19: Managing the crisis across levels of government", <https://www.oecd.org/coronavirus/policy-responses/the-territorial-impact-of-covid-19-managing-the-crisis-across-levels-of-government-d3e314e1/>.

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To slow the spread of COVID-19, many workplaces shifted in-person jobs to telework when the pandemic began in March and have continued to encourage remote work since. However, a large share of lower-wage workers in urban areas hold service jobs in hospitality, childcare, retail and personal services that depend on face-to-face interactions (OECD, 2020<sup>[9]</sup>). They reside in less affluent, more crowded, peripheral areas and have been more vulnerable to infection. Many of these service jobs were declared essential and continued to take place in person, while others were curtailed by social distancing.

Better high-speed Internet coverage in urban areas means that their residents are more able to use the Internet to replace in-person interactions with virtual ones (OECD, 2019<sup>[10]</sup>). Shifts to virtual interactions have happened for educational and social purposes (e.g. school, video chats with friends and family). Higher rates of digitisation have helped some cities compensate for physical space constraints, with large shifts from in-person to online shopping especially for grocery stores and pharmacies (Farrell et al., 2020<sup>[11]</sup>). Cities with weaker digital infrastructure may have been less able to substitute virtual for physical contacts, contributing to more infections.

Whilst there remains considerable uncertainty about the longer-term economic and social consequences of COVID-19, it is clear that the pandemic has, at least in the short term, dampened the vibrant activities of cities. Many trends that started before the crisis, such as digitalisation – including greater potential for remote working – have accelerated. The pandemic has also raised awareness among policy makers and the public at large about the importance of protecting sustainable ecosystems. As a result, city planners are already beginning to place higher emphasis on open spaces, mixed-use architecture and contactless digital commerce.

### ***Rural areas have not been spared***

In theory, lower population density should make the risk of COVID-19 transmission lower in rural areas. However, since the virus arrived in rural areas later, residents may have developed a false sense of security and taken fewer precautions (Peters, 2020<sup>[12]</sup>). Super-spreader events including wedding parties and religious services fuelled the spread of COVID-19 in rural parts of many countries. Meatpacking plants emerged as virus hot spots in rural areas of Germany, Ireland and the US. In the US, rural area COVID-19 case rates outpaced urban area rates from August 2020 onward (Leatherby, 2020<sup>[13]</sup>). College towns in the US were also disproportionately affected by outbreaks and there was more resistance to mask-wearing in rural areas than urban ones (Haischer et al., 2020<sup>[14]</sup>).

Within countries, densely populated urban areas were the hardest hit in the first half of 2020. In rural areas, COVID-19 mortality rates increased particularly from August 2020 onwards. Socio-economic indicators, (such as teleworking and income per capita) may explain why, in the second half of 2020, the outbreak was more deadly in rural areas in France, Italy and the US and, to a lesser extent, the UK (Figure 1.2). Once the pandemic reached rural areas, their larger shares of the elderly population were more vulnerable to it.

The populations of rural areas are at greater risk of COVID-19 complications and mortality. The virus is particularly dangerous for older individuals and rural areas generally have higher proportions of older residents. Rural residents also have a higher prevalence of pre-existing conditions and comorbidities (e.g. diabetes, heart disease, obesity and smoking) that put them at greater risk of COVID-19 complications (Peters, 2020<sup>[12]</sup>). Some remote, Indigenous communities face additional barriers such as limited access to public health information (including community-based data collection), healthcare and sanitation (UN, 2020<sup>[15]</sup>).

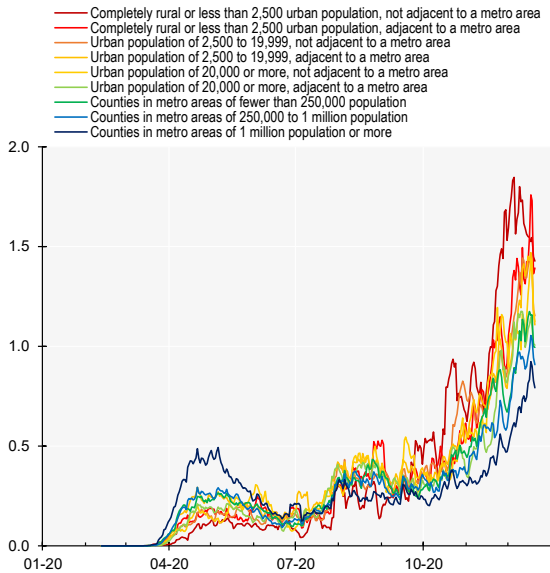
Rural hospitals are less able to handle an influx of COVID-19 patients because they tend to have fewer specialists and less technology and capacity (e.g. intensive care unit [ICU] beds per capita) (OECD, 2020<sup>[16]</sup>). In the US, for example, mortality from cancer, diabetes and influenza is generally higher in rural areas in normal times. Furthermore, across different countries, a number of urban dwellers have moved away from cities to spend the lockdown in secondary houses or with their families in rural regions. This movement of people increased the risk of spreading the virus to lower density areas. With low rural hospital density, virus outbreaks can easily overwhelm a single hospital. Urban hospital systems have a greater ability to handle idiosyncratic surges. For example, if an outbreak happens in one part of a large city, doctors and emergency services can direct patients to a nearby hospital with spare capacity. Instead, in rural areas, the next-closest hospital may be prohibitively far.

Indigenous communities residing in rural areas face particular challenges. There are approximately 39 million Indigenous peoples across 13 OECD countries. Countries that work closely with the OECD also have significant Indigenous populations (e.g. Argentina, Brazil, Costa Rica, Indonesia and Peru). Indigenous peoples are nearly three times as likely to be living in extreme poverty, making it more difficult to sustain themselves when unable to work. Indigenous peoples are also more concentrated in rural areas than non-Indigenous populations. Many Indigenous communities experience overcrowded and multi-generational housing, poorer health outcomes, with limited access to health services and infrastructure. All these factors exacerbate the risk of contracting COVID-19, especially in remote communities. Research

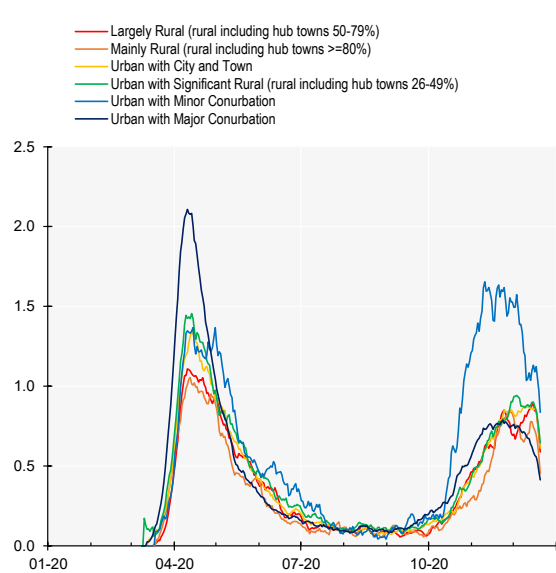
from the US suggests that the rate of new COVID-19 cases per 1 000 people is four times higher in Indian reservations than in other parts of the US.

**Figure 1.2. COVID-19 mortality per 100 000 inhabitants, daily average**

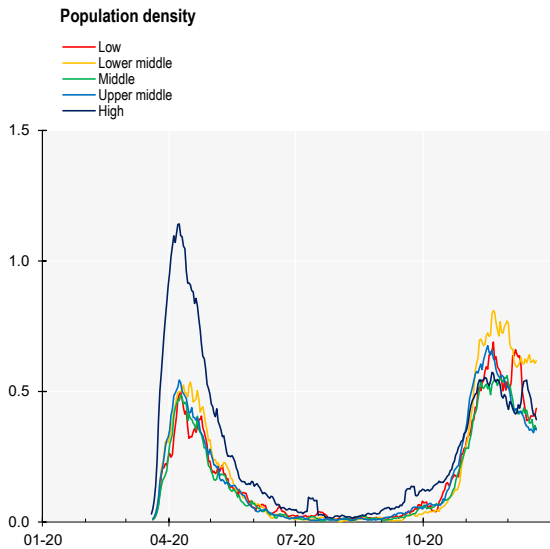
**United States**, average daily COVID-19 deaths by county (TL3) (7-day rolling average), by rural-urban classification groups



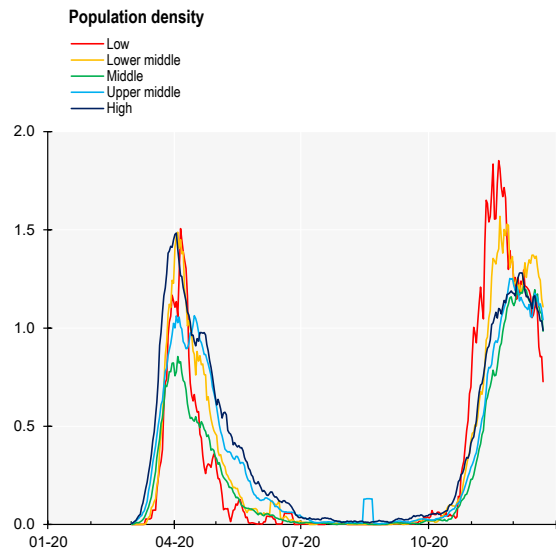
**United Kingdom**, average daily COVID-19 deaths by LTLA (7-day rolling average), by rural-urban classification groups



**France**, average daily COVID-19 deaths by départements (TL3) (7-day rolling average), by population density groups



**Italy**, average daily COVID-19 deaths by regione (TL2) (7-day rolling average), by population density groups



Note: COVID-19 mortality definitions and their attribution to location differ across countries. For example the location may be where death occurred or where the deceased lived. In France, population density is low where population per square kilometre ranges from 0 and 45 inhabitants, lower-middle from 46 to 67, middle from 68 to 110, upper-middle from 110 to 215 and high if greater than 215. In Italy, population density is low where population per square kilometre ranges from 0 to 72 inhabitants, lower-middle from 73 to 126, middle from 127 to 171, upper-middle from 171 to 268 and high if greater than 268.

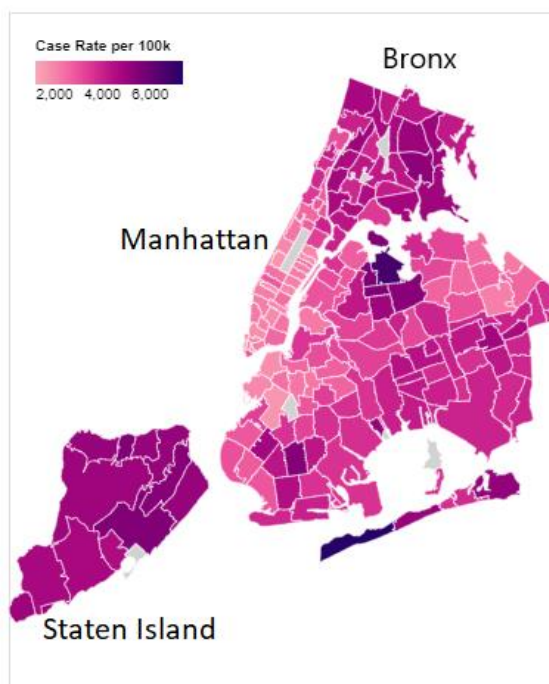
Source: OECD (2020<sup>[9]</sup>), "The territorial impact of COVID-19: Managing the crisis across levels of government", <https://www.oecd.org/coronavirus/policy-responses/the-territorial-impact-of-covid-19-managing-the-crisis-across-levels-of-government-d3e314e1/>.

### Poorer populations are more affected

In most OECD countries, the number of residents living in crowded and deprived conditions is larger in urban than rural areas but, wherever they live, vulnerable populations experienced elevated rates of COVID-19 contagion and adverse health outcomes. Poorer, working-class boroughs of New York City such as the Bronx and Staten Island had up-to-three-times the incidence of COVID-19 compared to the richer borough of Manhattan (Figure 1.3). Regions in the south of England (UK) had lower virus prevalence whereas poorer regions in the north – especially those around Hull, Liverpool, Newcastle and Sheffield – had a higher prevalence (Figure 1.4).

#### Figure 1.3. New York City COVID-19 cases by zip code

Cumulative cases per 100 000 inhabitants as of 10 December 2020



Source: New York City (n.d.<sub>[17]</sub>), *Total Data*, <https://www1.nyc.gov/site/doh/covid/covid-19-data-totals.page> (accessed on 10 December 2020).

In rural areas in some countries, crowded living quarters for many migrant workers, refugees and Indigenous peoples resemble the overcrowding of households in deprived areas of large cities. In urban areas, deprived residents face crowded living conditions along with other problems faced by rural residents: namely, less Internet connectivity, more COVID-19 comorbidities and, in some countries, substantially less access to healthcare (Brandily et al., 2020<sub>[7]</sub>).

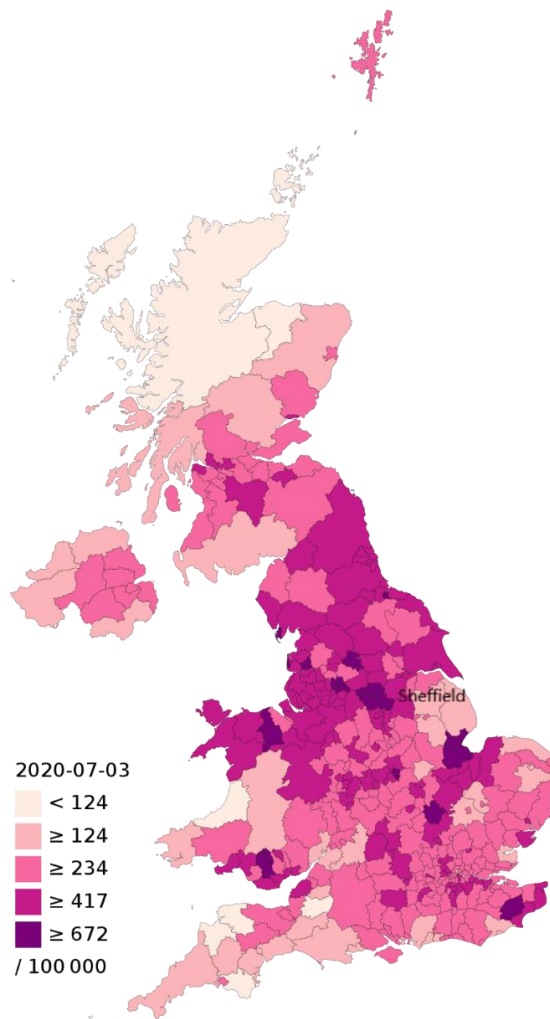
Residents of crowded housing are also more likely to be essential workers in the provision of essential services. Whilst the scope of essential jobs is broad (including medical professions), jobs designated as essential in food retailing, passenger and freight transport, for example – often on modest wages – require in-person interactions that increase virus exposure (Brandily et al., 2020<sub>[7]</sub>). In fact, essential workers have an estimated 55% higher likelihood of being positive for COVID-19 than those classified non-essential. The effect is not only driven by the healthcare and social assistance workers. Dependents cohabiting with an essential worker have a 17% higher likelihood of being COVID-19 positive compared to those cohabiting with a non-essential worker and 38% for roommates cohabiting with an essential worker. Intrahousehold transmission appears to be an important transmission mechanism (Song et al., 2021<sub>[18]</sub>).

Workers in informal employment, of which there are 2 billion (sixty-one percent of the world's employed population), are particularly vulnerable. In addition to having higher exposure to health and safety risks, informal workers are often obliged to work without appropriate physical protection such as masks or hand disinfectants. Moreover, informal workers have limited (often negligible) social protection and less recourse to benefit from health and safety standards, including hygiene and social distancing protocols introduced by most governments around the world. Nor can they access paid sick leave, which, when sufficiently generous, can reduce workplace transmission by convincing workers who might have contracted the virus to stay home.

The impact of COVID has compounded existing socio-economic vulnerabilities and disproportionately affected vulnerable populations and minorities, in terms of infection and health risks (OECD, 2020<sup>[19]</sup>). In addition, while a disproportionate share of essential workers are low-paid workers, low-paid workers in non-essential jobs have also been the most vulnerable to job and income loss in many regions, in part reflecting the lower possibilities to telework.

### Figure 1.4. United Kingdom COVID-19 cases by lower-tier local authority area

Cumulative cases per 100 000 inhabitants as of 4 June 2020



Source: Ythlev (2020<sup>[20]</sup>), *COVID-19 Outbreak UK Per Capita Cases Map*, [https://commons.wikimedia.org/wiki/File:COVID-19\\_outbreak\\_UK\\_per\\_capita\\_cases\\_map.svg](https://commons.wikimedia.org/wiki/File:COVID-19_outbreak_UK_per_capita_cases_map.svg).

## **Worldwide environmental challenges contribute to sparking and diffusing pandemics**

Human interference with biodiversity helps create the conditions for pathogens to leap from animals to humans, creating zoonotic diseases, such as COVID-19 (OECD, 2020<sup>[21]</sup>). According to the 2020 Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) Workshop Report on Biodiversity and Pandemics “the underlying causes of pandemics are the same global environmental changes that drive biodiversity loss and climate change (IPBES, 2020<sup>[22]</sup>).” Land-use change, in particular deforestation, degradation and fragmentation of animals’ habitat, agriculture intensification, as well as wildlife trade and climate change have all played a role. Another important driver of infectious diseases is agriculture expansion and intensification, and particularly mass animal farming (Rohr et al., 2019<sup>[23]</sup>). High-density industrialised livestock operations are already more vulnerable to losses of animals to diseases. Both increased host density and increased contact rates between people and animals facilitate the transmission of diseases and can cause increases in infectious diseases. In addition, increased poaching of wildlife and illegal resource extraction in some countries contributes to the loss of rural livelihoods and reduced capacity for monitoring and enforcement (OECD, 2020<sup>[21]</sup>). It is therefore paramount to understand and integrate into policymaking the connection between the environmental and public health agendas (O’Callaghan-Gordo and Antó, 2020<sup>[24]</sup>). Along with COVID-19, many deadly pathogens in recent memory – such as dengue and more recently HIV, Ebola, SARS – have taken this interspecies leap: 70% of emerging diseases and almost all known pandemics are zoonotic. Effective biodiversity conservation and sustainable land use, including halting deforestation, will limit the risk of zoonotic transfer while also helping to maintain the existing ecosystem services (OECD, 2020<sup>[21]</sup>).

Land use change is a particularly large driver of pandemics, responsible for more than 30% of emerging disease events (IPBES, 2020<sup>[22]</sup>). Regional governments can contribute towards more sustainable land use governance and reduce the role of land use change in pandemic emergence since they are often in charge of local spatial planning and land use policies. Biodiversity benefits, including lower risks to human health from zoonotic diseases, should be assessed and incorporated in major developments and land use projects. Additionally, policies targeting the reduced role of land use change to pandemics through ecological restoration and biodiversity conservation have synergies with combating climate change and its effects, and can promote jobs (OECD, 2020<sup>[25]</sup>). The conservation and restoration of ecosystems can reduce the risk of zoonotic diseases. Limiting climate change will therefore also contribute to avoiding rising zoonotic disease risk.

The pandemic also highlighted the link between air pollution and mortality from COVID-19. Indoor and outdoor air pollution exacerbate the airborne transmission of SARS-CoV-2 as well as the health impacts once infected (OECD, 2020<sup>[21]</sup>). A number of studies have demonstrated that a small increase in particulate matter (PM<sub>2.5</sub>) is associated with an increase in the COVID-19 death rate of 8%-16%, depending on the region. Socially disadvantaged groups are more exposed and vulnerable to air pollution, which makes them potentially more vulnerable to adverse health impacts, including from COVID-19.

Policies to reach net-zero greenhouse gas (GHG) emissions as targeted by many OECD countries for 2050 and policies to adapt to now inevitable climate change offer important synergies with this agenda, as argued in Part II of this *Regional Outlook*, although also a few trade-offs, which need to be minimised. Better air quality, improved water quality, effective waste management and enhanced biodiversity protection will go hand in hand with emission reduction if well-designed and reduce the vulnerability of communities to pandemics. It will also improve overall societal well-being and resilience.

As argued in Part II, integrating environmental health in policies to improve resilience offers many benefits beyond limiting risks related to pandemics. Good air quality generates wide benefits for public health and well-being along with economic benefits as a result of fewer air pollution-related illnesses, positive impacts on cognition and learning, and higher productivity. Similarly, improving access to safely managed drinking water and sanitation will bring important benefits to the most disadvantaged in both OECD and non-OECD countries. In OECD countries, improved access can significantly enhance inclusiveness for under-



privileged groups such as people with health conditions, groups in substandard housing, migrants and homeless people. In many developing countries, women and girls, in particular, are often responsible for collecting water and suffer most from inadequate access to sanitation. Biodiversity conservation and sustainable use are also key as biodiversity and ecosystem services provide benefits of USD 125-140 trillion per year (i.e. more than one and a half times the size of global gross domestic product [GDP]).

## The economic crisis is profound and geographically diverse

The economic crisis triggered by COVID-19 may be the most serious economic crisis in a century. The social and economic impacts of the lockdowns and other restrictions to slow the pandemic are diverse and more geographically differentiated than in the 2008 global financial crisis. Whilst a number of factors, as shown above, help to explain differences in rates of infections or death across regions, differences in economic impacts are largely driven by industrial structures, degree of integration into global value chains, and, of course, the stringency and length of containment measures. Indeed, although most policy responses were initially implemented at the national level, in many countries, as the crisis unfolded, these became more localised. (OECD, 2020<sup>[8]</sup>).

Wholesale and retail trade, accommodation and food service sectors were heavily affected by closures, physical distancing and travel disruption, hitting metropolitan regions and tourist regions first. Lower local consumption reinforced the impact of lost tourism – affecting large retailers, general-purpose stores and businesses in the hospitality industry. Box 1.1 shows impacts on a selection of cities. Manufacturing is also a high-risk sector, as it is particularly affected by disruptions of value chains, especially by lockdowns and mobility restrictions.

### Box 1.1. Estimates of economic impacts in cities

Many cities across the OECD reported major impacts:

- COVID-19 caused a marked contraction in the economy of Greater Montreal in the second quarter of 2020. The social distancing required to avoid infection and reduce mortality slowed economic activity in retail businesses, personal services and passenger transport (especially air and public transport). Supply chain disruptions and recessions among major trading partners weaken exports, investment and tourism in the medium term.
- An impact study of confinement on the job market in Madrid, Spain, estimated that 2 months of confinement would result in the loss of 60 500 jobs and even 108 000 if counting indirect employment. This represents 5.4% of total employment. The breakdown by sector of the data places hospitality as the most affected sector (31.8%, with 19 227 fewer jobs) followed by retail trade (11.3%, with 6 850 fewer jobs), personal services (5.6%, which means 3 425 fewer jobs) and culture (2.5%, with 1 497 fewer jobs).
- After 2 months of confinement, Bogotá's (Colombia) GDP was estimated to fall around 4% and unemployment reached 18%. With 3 months of confinement, the drop would be -8%, never seen in the history of the city.

Source: OECD (2020<sup>[19]</sup>), "Cities policy responses", <https://www.oecd.org/coronavirus/policy-responses/cities-policy-responses-fd1053ff/>.

In the US, the initially hardest-hit counties and metropolitan areas constitute the core of its productive capacity. The 50 hardest-hit US counties “support more than 60 million jobs and 36% of its GDP” (Muro, Whiton and Maxim, 2020<sup>[42]</sup>). Economically vulnerable regions may often have been at bigger risk, for example, because of less sectoral diversification and less digital infrastructure. Indeed, in the European Union (EU), regions that received significant cohesion funds from the EU before the crisis have experienced larger relative declines in GDP (European Committee of Regions, 2020<sup>[26]</sup>), suggesting the crisis may widen geographic disparities in economic performance. Rural areas may have benefitted from temporarily higher demand but their structural characteristics have also made them more vulnerable (Box 1.2).

### Box 1.2. Economic impacts in rural regions

The temporary relocation of urban dwellers to rural areas may have produced positive consumption effects in some rural areas, despite the overall decline in demand with confinement. Researchers in the US observed a temporary increase in consumption of primary consumption goods, though the demand for luxury goods declined in urban and rural areas. Rural areas specialised in agriculture and food processing may have been able to boost production and sales.

Nonetheless, rural regions have been particularly vulnerable because they have:

- A much less diversified economy.
- A large share of workers in essential jobs (agriculture, food processing, etc.), coupled with a limited capability to undertake these jobs from home, and poorer high-speed Internet infrastructure. This has made telework and social distancing much harder to implement.
- Lower incomes and lower savings may have forced rural people to continue to work and/or not visit the hospital when needed.

Shortages of seasonal and temporary workers have been a significant challenge, with some jurisdictions at risk of losing a planting season as a result of border closures. Disruptions of perishable cargo trade that affect food markets created an additional burden for rural food businesses.

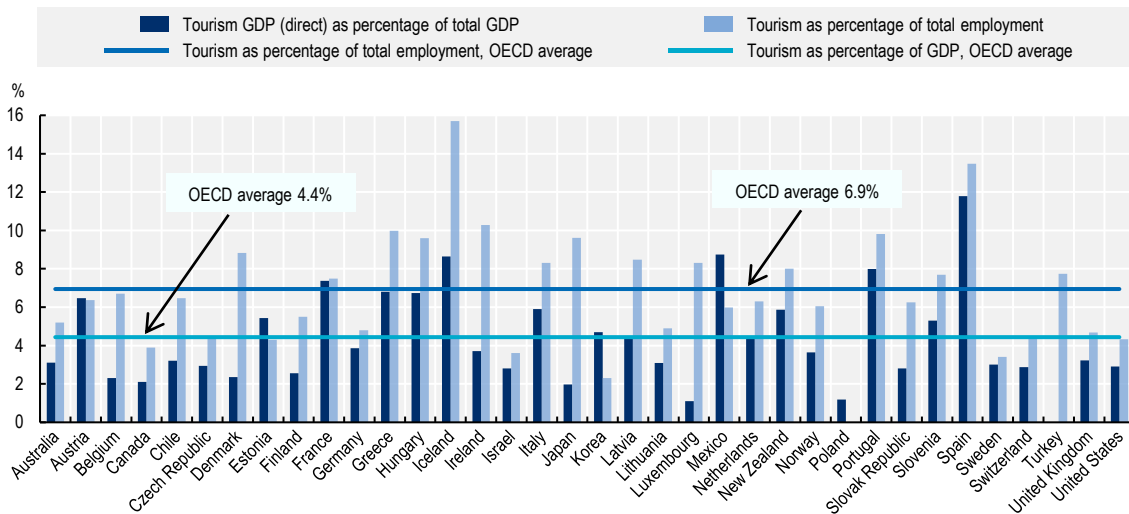
Source: OECD (2020<sup>[16]</sup>), “Policy implications of coronavirus crisis for rural development”, [https://read.oecd-ilibrary.org/view/?ref=134\\_134479-8kq0i6epcq&title=Policy-Implications-of-Coronavirus-Crisis-for-Rural-Development](https://read.oecd-ilibrary.org/view/?ref=134_134479-8kq0i6epcq&title=Policy-Implications-of-Coronavirus-Crisis-for-Rural-Development).

### ***The fall in travel hurts regions that depend heavily on tourism***

The emergence of COVID-19 around the globe led to concerns over travellers contracting and transmitting the virus. Before the pandemic, the tourism sector directly accounted for nearly 5% of GDP and 7% of employment worldwide (Figure 1.5) but it collapsed as many countries instituted testing and quarantine restrictions for international travellers and even outright bans. The OECD estimates that international tourism fell by 80% in 2020.

Business travel was hard hit and many cultural activities, festivals, cruises and large events were cancelled or rescheduled for post-COVID times (OECD, 2020<sup>[27]</sup>). Even after some bans were lifted, tourism – especially involving international travel – remained very depressed. The fall in domestic tourism was smaller but still enormous. For example, both Spain and the UK expect declines of around 50% in their domestic tourism in 2020 (OECD, 2020<sup>[28]</sup>).

Figure 1.5. Direct contribution of tourism in OECD economies



Note: GDP refers to gross value added [GVA] for Canada, Chile, Colombia, Denmark, Finland, Germany, Greece, Hungary, Israel, Italy, Latvia, Lithuania, Mexico, the Netherlands, New Zealand, Portugal, Sweden, Switzerland, the United Kingdom and the United States. GDP data for France refer to internal tourism consumption. GDP data for Korea and Spain includes indirect effects.

Source: OECD Tourism Statistics (Database).

Affected places include coastal areas, mountainous regions, small cities and other places with natural and social attractions. In these places, tourist spending supports local restaurants, shops and cultural activities and many businesses in related industries (e.g. food production, agriculture, transport, business services). Small places that depend on tourism have less diversified economies and are thus less resilient to shocks. When tourism workers' income falls, the entire local economy is affected through demand effects.

Islands, such as Crete, Greece's South Aegean and Ionian islands and Spain's Balearic and Canary Islands, are among the most tourist-centric economies (OECD, 2020<sup>[9]</sup>). Islands also have minimal surface transport links and are thus more dependent on mass transit air and ship arrivals. In addition to islands, some mainland port cities suffered disproportionately because of the halt in cruise ship travel.

Ski resorts, especially those with a high share of international travellers, have been severely impacted by COVID-19 and related containment measures. While many European countries had lulls in the prevalence of the virus over the summer, the peak winter season for ski resorts coincided with a virus resurgence. As a result, most countries decided to prohibit ski activity during their regions' peak 2020-21 tourist season.

Cities experienced large drops in tourism while some mountain and lake regions within driving distance of large cities received more visitors than usual in their off-seasons. Some places even instituted temporary tourism bans (e.g. Norway) and ran public campaigns (e.g. Canada) to protect rural populations and their health systems.

Urban destinations usually rely on a mix of international and domestic tourists that visit for business and leisure purposes. Business travel plunged with the advent of COVID-19 and since then, most meetings and conferences have been called off or replaced with virtual events. Leisure travel dropped due to cancelled events, restrictions on commerce and movement, and real and perceived COVID-19 risks. Although larger cities are not wholly reliant on tourism, the decline in travel had a negative impact on many low-skilled, vulnerable workers. In the US, employment in the leisure and hospitality sector was halved from February to April; despite a partial recovery, the sector shed more than 3 million employees (20% of its workforce) from November 2019 to November 2020 (U.S. Bureau of Labor Statistics, 2020<sup>[29]</sup>).

### ***The drop in economic activity resulted in significant but temporary environmental improvements***

CO<sub>2</sub> emissions declined by 8% worldwide in 2020, to levels of 10 years ago (OECD, 2020<sub>[21]</sub>). However, this temporary reduction is not expected to have any long-term impact. Moreover, unless energy use, land use and urban policies are profoundly transformed, the annual flow of emissions will continue to rise. As highlighted in Part II of this *Regional Outlook* report, it is the stock of cumulated CO<sub>2</sub> emissions that counts for the climate. Only moving to net-zero CO<sub>2</sub> emissions can halt global warming.

Air pollution also declined temporarily as industrial activity, ground transport and air travel dropped for several months. Reduced transport in particular has had a positive impact on air quality during confinement in many cities (OECD, 2020<sub>[19]</sub>). In regions with lockdowns, there was a decrease of 50%-75% in road transport and up to 95% in rush-hour traffic congestion in major cities. Compared with 2019, levels of pollution in New York, US, have decreased by nearly 50%. Cities in China and India also recorded major reductions in sulphur oxide concentrations as industrial activities were curtailed (OECD, 2020<sub>[19]</sub>) but countries have since reported a rapid return to rising levels (OECD, 2020<sub>[21]</sub>).

The drop-in economic activity has also led to an improvement in water quality in waterways and coastal zones. However, this will also be a temporary phenomenon as water pollution is expected to increase once economic activity resumes. By contrast, waste management challenges have increased as governments deal with major increases in protective equipment and demand for single-use plastics while recycling diminished (OECD, 2020<sub>[21]</sub>). The impacts on the most vulnerable segments of society need to be taken into account, especially from contaminated sites and in areas that lack access to adequate housing and clean water.

The temporary nature of the environmental improvements illustrates how closely environmental impacts still relate to economic activity. To address the risks to the foundations of human well-being from climate change while improving inclusive economic prosperity, it is necessary to decouple economic activity from GHG emissions not only in relative but in absolute terms, requiring broad and profound transformation of regional economies, the theme of Part II of this *Regional Outlook* report.

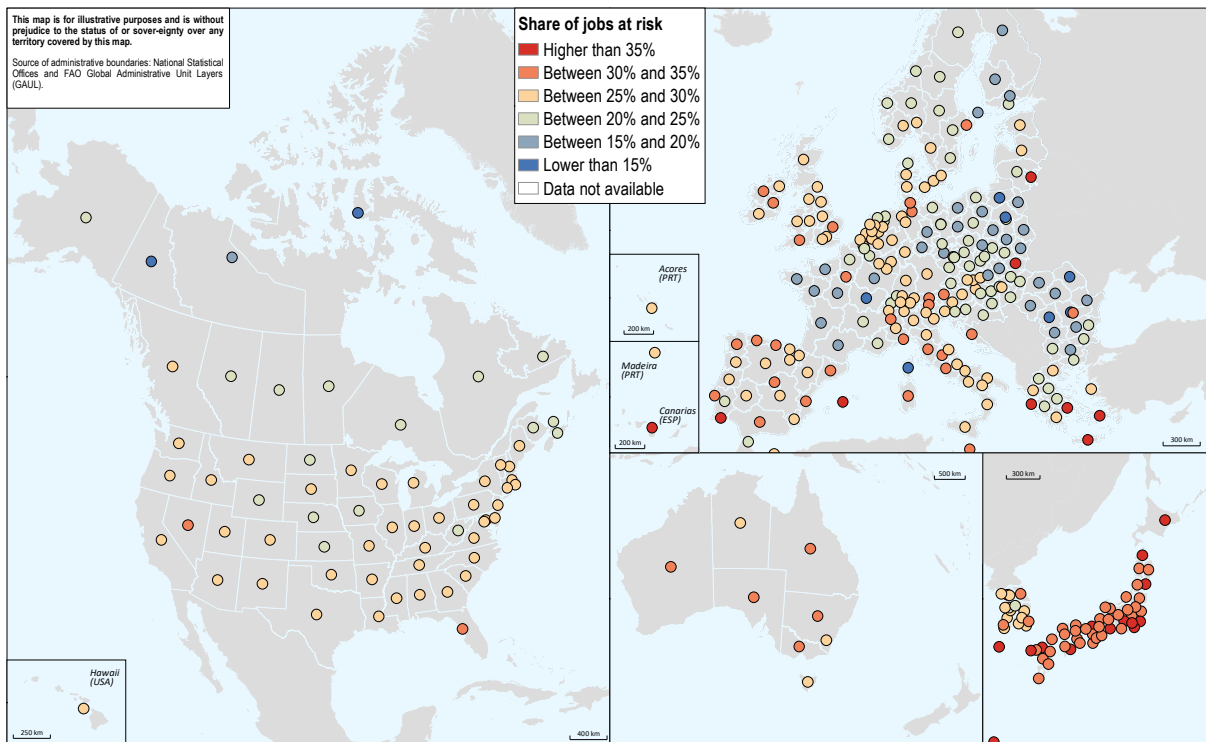
### **Employment at risk varies strongly with the sectoral specialisation of regions**

Evaluating regional employment at risk from a lockdown in a region can be estimated based on the specific sectors of activity. On this basis, employment at risk may vary from less than 15% to more than 35% across 314 regions in 30 OECD and 4 non-OECD European countries in May 2020 (Figure 1.6). In 1 of 5 OECD/EU regions, more than 30% of jobs are potentially at risk during a lockdown.

In Europe, several major tourist regions have over 40% of jobs at risk. In Korea, the largest share of jobs at risk is in Jeju-do, a region where tourism is important too. Similarly, in North America, Nevada stands out as having the highest share of jobs at risk, followed by Hawaii. In most regions, accommodation and food, wholesale and retail as well as art and entertainment account for most jobs at risk (Figure 1.7).

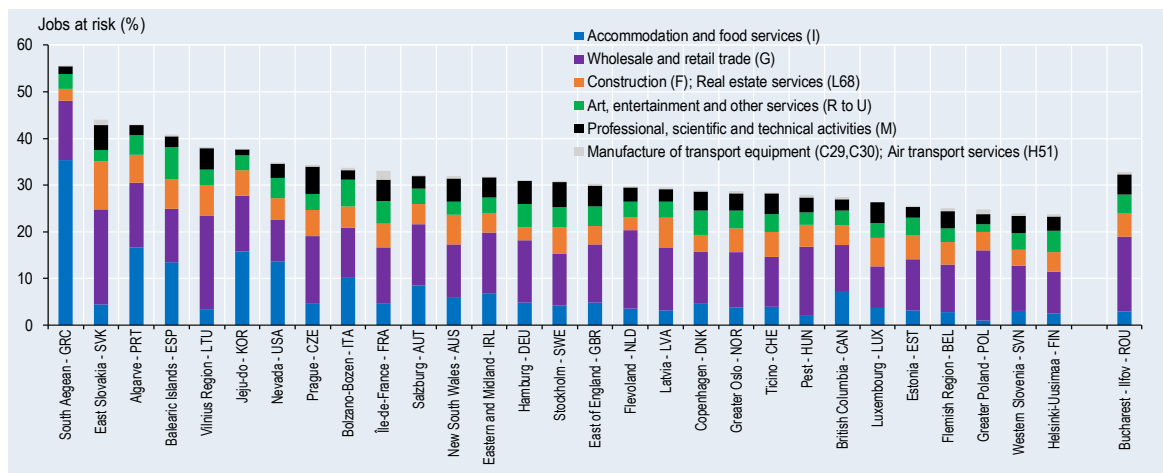
In roughly one-quarter of countries, the capital region has the highest share of jobs at risk. This includes the Czech Republic, Denmark, Finland, France, Lithuania, Norway, Sweden, as well as Romania. Greece and Spain follow the same pattern if their island regions, which are highly exposed to the decline in tourism, are excluded. On the other hand, large cities tend to have other protective factors – a more diverse economy, a more skilled labour force, a larger share of jobs compatible with teleworking – which can help them adapt and facilitate economic recovery (OECD, 2020<sub>[30]</sub>).

Figure 1.6. Share of jobs potentially at risk from COVID-19 containment measures



Source: OECD (2020<sup>[9]</sup>), “The territorial impact of COVID-19: Managing the crisis across levels of government”, <https://www.oecd.org/coronavirus/policy-responses/the-territorial-impact-of-covid-19-managing-the-crisis-across-levels-of-government-d3e314e1/>.

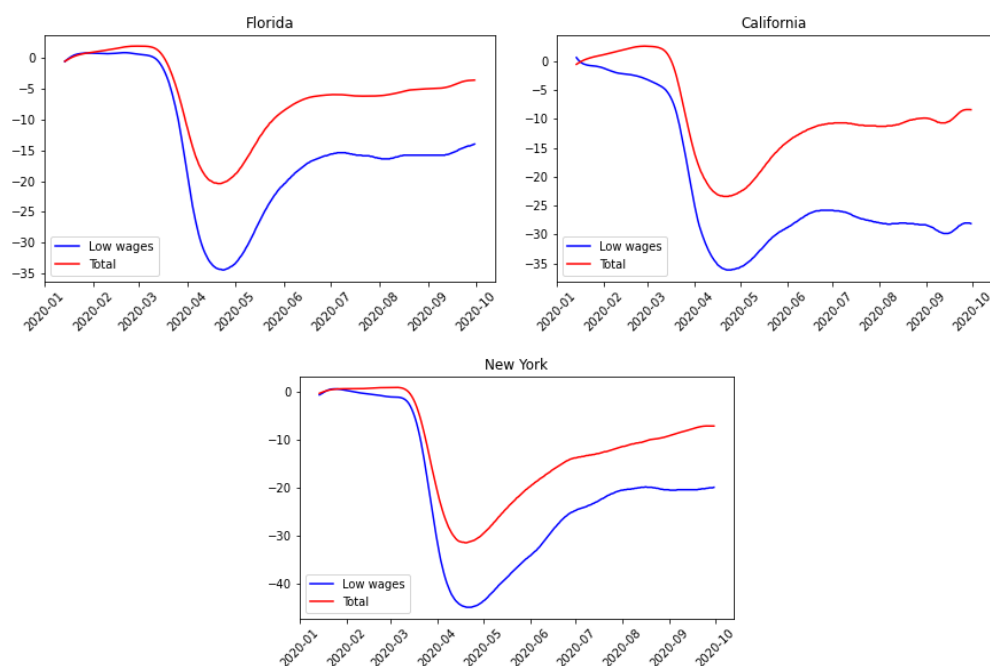
Figure 1.7. Regions with the highest share of jobs at risk by country, TL2 regions



Source: OECD (2020<sup>[30]</sup>), *Job Creation and Local Economic Development 2020: Rebuilding Better*, <https://dx.doi.org/10.1787/b02b2f39-en>.

The pace of employment recovery has been uneven. In the US, some states such as Florida have seen employment levels rebound considerably from the crisis lows, although remaining below pre-crisis levels, while in others, such as California, employment levels have only seen a marginal improvement from the crisis lows. (Figure 1.8).

Figure 1.8. Employment changes relative to January 2020



Note: Low wages are annual wages below USD 27 000 per year.

Source: Opportunity Insights (n.d.<sup>[31]</sup>), *Economic Tracker*, <https://www.tracktherecovery.org/>.

Unemployment is spiking unevenly across local labour markets. Countries that relied on expanded unemployment benefits or stimulus payments to support workers through job losses or reductions in working hours saw unemployment significantly increase in the first half of 2020. In contrast, countries that made widespread use of job retention schemes, such as short-time work programmes, which cover the wages of furloughed workers, staved off initial increases in unemployment. However, when these schemes are rolled back and businesses manage prolonged drops in demand, unemployment will pick up in many places. In countries where unemployment increased significantly and with available data, regional divides are apparent. For example, in the US, the August 2020 unemployment rate ranged from 4.0% in Nebraska to 13.2% in Nevada. Across the US, unemployment rose more in urban areas than rural ones (USDA ERS, 2020<sup>[32]</sup>). Some of this rise reflects cancellations of large in-person events such as conferences and music performances in urban areas. Urban areas with many knowledge workers also have many low-pay service jobs that depend on in-person interactions and demand for such services fell sharply. Cities in which many high-pay workers can telework saw disproportionate declines in job postings in services like retail and food preparation (Kolko, 2020<sup>[33]</sup>).

### ***Regions with high shares of precarious workers are particularly hit***

Regional differences in non-standard employment can also explain within-country differences in job losses. Workers in non-standard employment, including informal, undeclared, part-time employment, are often low-pay workers, who generally experience lower levels of job security (if any). Employers may choose not to renew temporary contracts even when dismissal protection regulations prevent them from laying off permanent workers. Workers in non-standard employment are amongst the hardest hit by the crisis. They are highly represented in some of the most impacted sectors, such as the arts, entertainment and tourism. They are often less well covered by social protection, notably unemployment insurance, may not benefit from paid sick leave nor possibly from health insurance, in countries where there is no universal health

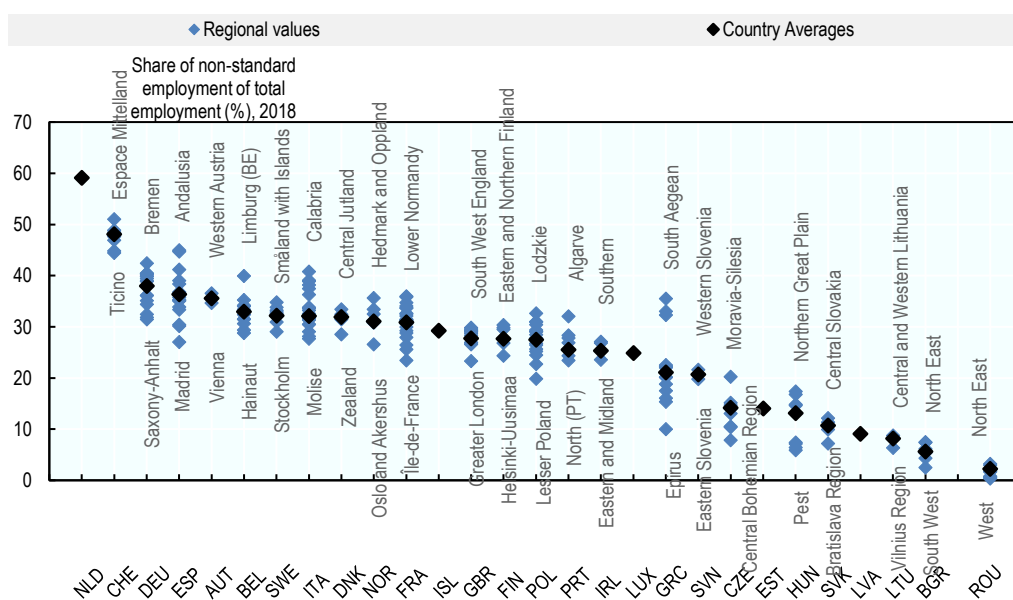


insurance scheme. Evidence from Canada, France and Italy suggest workers on temporary contracts were among the first to lose their jobs. Part-time workers may also be subject to less protection.

Temporary work is not evenly spread across territories and is more common in regions with a lower-educated workforce, higher unemployment and a smaller share of gross value-added in tradeable sectors. In over half of European countries with more than 1 region, the share of temporary employment varies over 5 percentage points across regions and, in several, over 10 percentage points. Overall, low-skilled workers are at higher risk of being in temporary work than the higher-skilled, and that likelihood is even higher in rural areas than in cities (OECD, 2020<sub>[30]</sub>).

**Figure 1.9. Temporary employment patterns are not uniform within countries**

Temporary employment as a share of dependent employment across selected European countries, large TL2 regions, 2018



Note: Non-standard employment includes individuals in temporary contracts (both full- and part-time) as well as workers in a permanent part-time employment.

Source: OECD (2020<sub>[30]</sub>), *Job Creation and Local Economic Development 2020: Rebuilding Better*, <https://dx.doi.org/10.1787/b02b2f39-en>.

### **Small- and medium-sized enterprises (SMEs) are overrepresented in sectors that have been highly impacted**

On average across OECD countries, SMEs are estimated to account for 75% of employment in the most affected sectors. In Ireland, for example, SMEs accounted for 79% of annual turnover in 2017 in highly affected sectors while the share of SMEs in total business sector value-added was 44% in 2016 (OECD, 2020<sub>[30]</sub>). SMEs are less equipped to manage major shocks since they have much lower equity and financial reserves and less scope to access external debt or equity.

On average across OECD countries, about 15% of working people are self-employed and about one-third of them are employers, with marked differences across regions. They do not always benefit from unemployment insurance and sick leave. The way in which many of the self-employed engage with their customers, suppliers, staff and collaborators are being uprooted by the COVID-19 crisis. Many are losing clients, particularly where their businesses involve consumer or business services that are delivered face-to-face, fields in which the self-employed often dominate. While some of the self-employed are able to

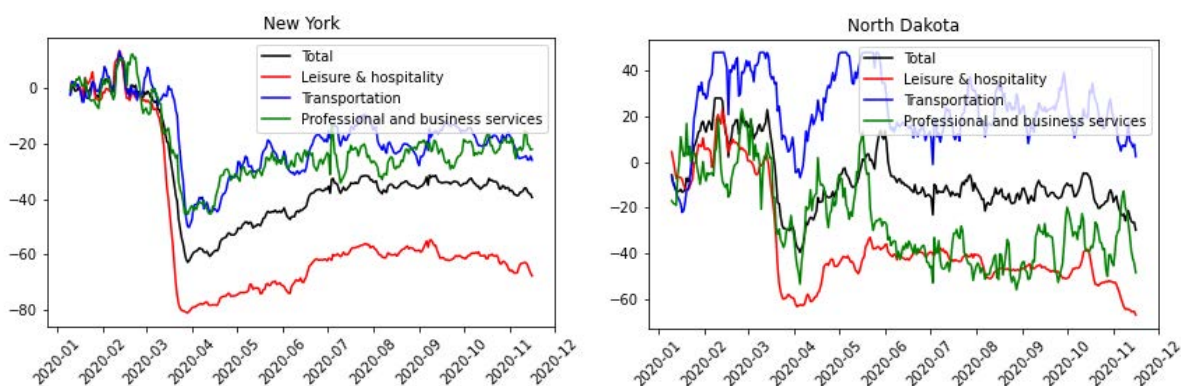
mitigate the adverse impacts by going online for customer and staff interactions, low digital capacities often holds them back and there is a risk that this could lead to new digital gaps emerging with early adopters. In addition, emergency support measures do not reach all SMEs (especially informal SMEs). (OECD, 2021<sup>[34]</sup>).

SMEs and the self-employed are particularly dependent on their local economies for demand and access to business support but local economies and communities also depend on healthy SMEs. Beyond the jobs they provide, they are often active corporate citizens and are an important component of dynamic and vital local communities. Thus, the impact of potential SME closures goes beyond just the economic activity and jobs they are directly responsible for (OECD, 2020<sup>[30]</sup>).

The impact on small business may be long-lasting, as customers may be permanently lost to larger (especially digital) competitors, consumer confidence in the ability of smaller firms to provide products safely is dented, business networks are damaged, skilled employees that were furloughed find new jobs elsewhere, and deferred investment decisions impact on output. In the United States, small businesses' income remained around 40% below the pre-crisis level in the state of New York end-2020 (Figure 1.10) with similar patterns in other north-eastern states, despite the reductions in COVID-19 case load and death rates. More generally, sunk-cost characteristics of business investment may imply that a loss of capital stock following a large shock is not recovered, especially if uncertainty remains large and even if demand returns. This is likely to impact employment too. This may be especially true for small businesses, which cannot borrow easily.

**Figure 1.10. Business income has remained low in New York and fell more recently in North Dakota**

Small business income relative to January 2020



Source: Opportunity Insights (n.d.<sup>[31]</sup>), *Economic Tracker*, <https://www.tracktherecovery.org/>.

### **Cultural activities and their locations have been badly hit**

Social distancing brings ongoing challenges to venue-based cultural activities such as theatres and museums (see Box 1.3). Cultural and creative activities account for about 1% to somewhat above 5% of employment across OECD regions. The high share of self-employed, freelancers and SMEs in the cultural sector creates unique challenges that general public support schemes are not always well-tailored to address.



### Box 1.3. Cultural and creative sectors risk long-lasting decline, impacting creativity and well-being

Venue-based sectors (such as museums, the performing arts, live music, festivals, cinema, etc.) are the hardest hit by social distancing measures. The abrupt drop in revenues puts their financial sustainability at risk and has resulted in reduced earnings and layoffs. It also has repercussions throughout their supplier networks, hitting suppliers in both creative and non-creative sectors. Some cultural and creative sectors, such as online content platforms, have seen an increase in demand for cultural content streaming during lockdowns but the benefits from this extra demand have largely accrued to the largest firms in the industry.

The effects will be long lasting due to a combination of several factors. The impacts on distribution channels and the drop in investment will affect the production of cultural goods and services and their diversity in the months, if not years, to come. Over the medium term, the anticipated lower levels of international and domestic tourism, drop in general demand and reductions of public and private funding for arts and culture, especially at the local level, could amplify this negative trend even further.

In the absence of responsive public support and recovery strategies, the downsizing of cultural and creative sectors will have a negative impact on cities and regions in terms of jobs and revenues, creation, innovation, citizen well-being and overall vibrancy and diversity. Much of the broad support to workers and firms rolled out in response to COVID-19 was not well suited to the peculiarities of the sector. Cultural and creative sectors largely consist of micro firms, non-profit organisations and creative professionals, often operating on the margins of financial sustainability. Large public and private cultural institutions and businesses depend on this dynamic ecosystem for the provision of creative goods and services. Employment and income support measures are not always accessible or adapted to the new and non-standard forms of employment (freelance, intermittent, hybrid – e.g. combining salaried part-time work with freelance work) that tend to be more precarious and are more common in this sector. SME finance measures could also be better adapted to businesses with significant intangible assets.

Source: OECD (2020<sup>[30]</sup>), *Job Creation and Local Economic Development 2020: Rebuilding Better*, <https://dx.doi.org/10.1787/b02b2f39-en>.

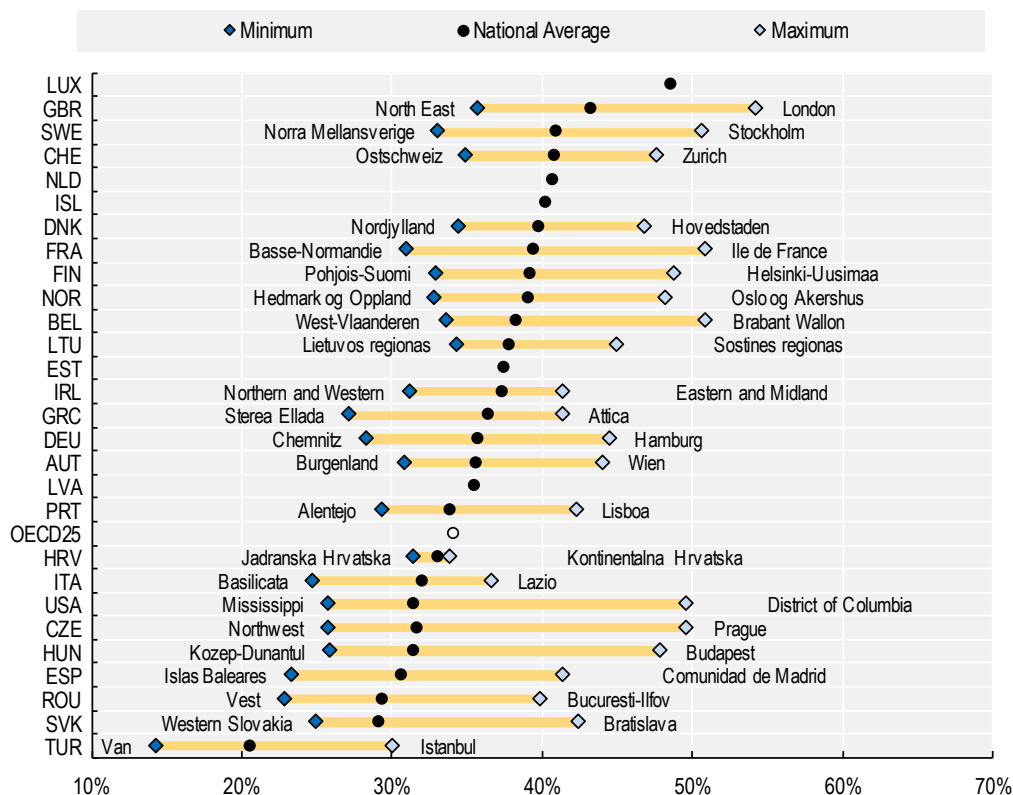
### ***Telework mitigates the impact of confinement on jobs in some regions***

The extent to which occupations can be performed remotely is an important mitigating factor with respect to the economic impact and cost of COVID-19 containment and contributes to territorial differences in resilience. This strongly depends on the nature of the tasks. The OECD recently estimated the share of occupations amenable to remote working in OECD regions based on the tasks performed by workers. The potential for remote working is unevenly distributed within countries (Figure 1.11). Urban areas display a 9 percentage point higher share of occupations that can be performed remotely than rural areas.

In most countries, large cities and capital regions offer the largest potential for remote working. On average, there is a 15-percentage point difference between the region with the highest and lowest potential for remote working in a given country. These findings hold under the assumption that all workers – regardless of location – have access to an efficient Internet connection and the necessary equipment. As a consequence, differences arising from connectivity and available equipment might also determine the potential for actual telework opportunities, most likely reinforcing urban-rural divides.

**Figure 1.11. The possibility to work remotely differs among and within countries**

Share of jobs that can potentially be performed remotely (%), 2018, NUTS-1 or NUTS-2 (TL2) regions



Note: The number of jobs in each country or region that can be carried out remotely as the percentage of total jobs. Countries are ranked in descending order by the share of jobs in total employment that can be done remotely at the national level. Regions correspond to NUTS-1 or NUTS-2 regions depending on data availability. Outside European countries, regions correspond to Territorial Level 2 (TL2) regions, according to the OECD Territorial Grid.

Source: OECD (2020<sup>[8]</sup>), "The territorial impact of COVID-19: Managing the crisis across levels of government", *OECD Policy Responses to Coronavirus (COVID-19)*, <https://www.oecd.org/coronavirus/policy-responses/the-territorial-impact-of-covid-19-managing-the-crisis-across-levels-of-government-d3e314e1/>.

Going forward, it is likely that there will be a "new normal" whereby many employees and companies will leverage the potential of teleworking. More recently, a poll in Belgium indicated that up to 90% of employees would like to continue teleworking when restrictions are lifted. Digitalisation, a major game-changer during the crisis, will remain a key component of a "new normal", although teleworking ability varies both across and within countries. House price movements also suggest people relocating to less densely areas but still connected to urban areas. Such relocation appears to be more marked among individuals who can telework (Ramani and Bloom, 2021<sup>[35]</sup>).

## Recovery may be marked by structural change and increased poverty risk

If past patterns hold true, the hardest-hit places could struggle for years to come (OECD, 2020<sup>[30]</sup>). Stop-and-go measures may continue until vaccination is widely available. Some of the sectors that have been particularly hard hit by containment measures are unlikely to recover quickly. For example, culture and creative industries take a deep and prolonged hit.

Many job losses during recessions are not cyclical but rather reflect an acceleration of structural changes. Accordingly, these jobs are unlikely to recover even when the economic situation improves. This can be especially problematic for local economies where concentrated job losses in specific sectors can have large negative spill-overs in the local economy more generally. Poor labour market outcomes, such as unemployment and low wages, can be associated with a broader range of quality-of-life challenges at the individual and community level, including poor mental and physical health. Likewise, local downturns can put significant pressure on local public budgets, impacting local quality of life and public services such as education and infrastructure (OECD, 2020<sub>[30]</sub>).

Some labour market transitions initiated before the COVID-19 pandemic could gather momentum and become abrupt changes. Technological change, globalisation, the green transition and demographic change were already reshaping the geography of jobs and labour forces prior to the COVID-19 crisis. These transitions will both create and destroy jobs, but not necessarily in the same places or requiring the same skills. The green transition could also receive new momentum as part of stimulus packages (OECD, 2020<sub>[30]</sub>).

. The share of jobs at risk from automation ranges from around 4% to almost 40% across regions. While places facing higher risks tend to have a lower-educated workforce and are less urbanised, the rapid uptake of teleworking could expand job creation outside of traditional high-growth centres.

There is some discussion around whether increased possibilities for teleworking will lead many people to leave cities and establish their residencies in remote areas, yet there are reasons that make this unlikely. People are attracted to dense places for their employment opportunities but also for the access to services and amenities they offer. At the same time, people could access these benefits and additional ones such as lower housing prices and less congestion in intermediate cities and/or well-connected rural areas. The long-term impact on the urban/rural spatial equilibrium may be difficult to predict, though telework at least in a hybrid form is likely to remain a permanent feature of work to some degree (OECD, 2020<sub>[8]</sub>).

### ***Tourism should rebound with a highly effective vaccine but risks remain***

As a labour-intensive sector, the impacts on local employment in tourism destinations will be profound. Even after COVID-19 risks fade, travel faces considerable headwinds to a full rebound. Some of the telework that necessitated online meetings enabled technology and habits that may prove to be permanent, leading to lower demand for in-person business meetings and conferences. Even with a highly effective vaccine, some travellers – particularly older ones – may be reluctant to board cruise ships, travel in trains and airplanes, and interact with groups in tours and hotels. Finally, the COVID-19-induced global economic crisis will almost certainly dampen consumer confidence and spending. On the other hand, since domestic and international travel has been risky and restricted for a year or more, there is pent-up demand for travel. For example, some countries that eased their containment measures (e.g. Denmark, Iceland, New Zealand) have already seen rebounds in domestic tourism (OECD, 2020<sub>[28]</sub>).

The supply-side of tourism may also be restricted in the future. The tourism sector is dominated by SMEs such as hotels, restaurants and shops that are less resilient to downturns compared to larger businesses (OECD, 2020<sub>[36]</sub>). Some of the hardest-hit small businesses have closed, especially in areas with incomplete government aid. They may not reopen if their owners' skills and business fixed assets can be transferred to other uses. In Mexico, which relies heavily on tourism, more than 1 million SMEs have closed permanently (Téllez, 2020<sub>[37]</sub>). Some large tourist-dependent businesses (e.g. hotels) also shut because they could not withstand the loss in revenue from extended COVID-related closures. In addition to business closures, staggering declines in cultural and recreational activities combined with an uncertain future could imply less investment in such infrastructure (e.g. museums, theatres, ski lifts, casinos, amusement parks) going forward. Some organisers and performers may have already changed their livelihoods to depend less on in-person group events.

### ***Poverty and adverse well-being impact on vulnerable groups is set to increase sharply***

In large cities with often expensive housing in urban centres, polarised labour markets often mean strong divides between high-skilled workers with relatively secure jobs and low-skilled workers in face-to-face service and retail jobs at risk and subject to higher infection risk and higher risk of heavy symptoms (OECD, 2020<sub>[30]</sub>). For Manchester, UK, for example, socio-economic inequalities are considered the priority emergency to recover from the crisis (OECD, 2020<sub>[19]</sub>). In Bristol, UK, findings from a survey showed that black, Asian-origin workers and other ethnic minorities were overrepresented in sectors that have been hit the hardest, including taxi drivers and low-income jobs among the self-employed. This was compounded by unequal access in terms of health, housing and information and communication technology (ICT) access (OECD, 2020<sub>[19]</sub>). Homeless people, estimated to be 1.9 million across OECD countries, have no or limited means of isolating and protecting themselves from infection.

For the elderly, COVID-19 places a severe restriction on their autonomous daily life, in addition to the higher risk of complication in case of infection. Many of whom live alone may not have a family member or friend to rely on and those who live in care homes are most affected by physical distancing. Non-elderly persons with a high risk of COVID-19 complications and their households are also more affected than the rest of the population. Among the elderly, COVID-19-related lockdowns has generated particularly marked loneliness and other psychological impacts. Low-income households may not have access to local professional help, especially if local and regional governments lack resources to provide them where demand may be particularly high (see below).

Women, who are overrepresented in service sectors that rely on contact with customers (e.g. tourism, hotels, restaurants) are more likely to be negatively affected by the economic downturn from the COVID-19 pandemic and women face additional risks of infection (including for hospital and long-term care staff) and domestic violence. In some countries, including Canada and Japan, additional childcare burdens at home led to large declines in women's labour force participation, which could have longer-run impacts on gender employment gaps (Djankov and Zhang, 2020<sub>[38]</sub>).

School closures also risk exacerbating inequities in education outcomes as parents play a larger role in their children's learning when schools are closed or virtual. The pandemic and its economic crisis have also brought a higher incidence of mental illnesses, notably depression, to which vulnerable groups including youth are more sensitive. For example, in France, the incidence of depression among young people has increased and this incidence is also likely to be geographically uneven. In terms of economic impacts, many young entrants to the labour market are unable to find work yet are ineligible for furlough and unemployment insurance schemes (Cajner et al., 2020<sub>[39]</sub>). Recent graduates may be disproportionately disadvantaged in their later careers (Altonji, Kahn and Speer, 2016<sub>[40]</sub>) and the effects may be stronger in countries with dual labour markets.

Workers in informal undeclared jobs are typically not covered by social safety nets, such as unemployment or housing benefit. In the Global South, up to 80% of urban employment is in the informal sector. Some of the biggest challenges from the crisis are likely to be a significant rise in income inequality and poverty. Estimates suggest that up to 400 million people worldwide could be pushed into extreme poverty, adding to the roughly 700 million in poverty prior to the pandemic. A large share of the new extremely poor is projected to be in South and Southeast Asia and Sub-Saharan Africa. These are also countries where large numbers of urban citizens live in precarious, densely packed and underserved slums, characterised by high levels of informal employment and often an inability to adhere to social distancing measures, even more so if its inhabitants want to avoid starvation (Gulati et al., 2020<sub>[41]</sub>). Young people entering the labour market are at particularly stark risk of being durably affected in their earnings prospects. Labour market entrants with relatively weak labour market prospects are particularly likely to suffer for many years from the impact of a local recession on their career entry.

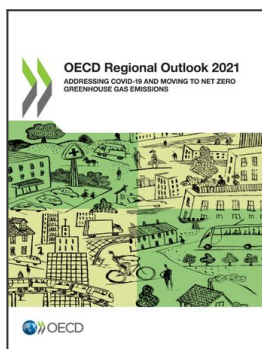
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