OECD Regional Outlook 2023

THE LONGSTANDING GEOGRAPHY OF INEQUALITIES



OECD

OECD Regional Outlook 2023

THE LONGSTANDING GEOGRAPHY OF INEQUALITIES

BETTER POLICIES FOR BETTER LIVES

This document, as well as any data and map included herein, are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Note by the Republic of Türkiye
The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Türkiye recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Türkiye shall preserve its position concerning the "Cyprus issue".

Note by all the European Union Member States of the OECD and the European Union
The Republic of Cyprus is recognised by all members of the United Nations with the exception of Türkiye. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

Please cite this publication as:
OECD (2023), *OECD Regional Outlook 2023: The Longstanding Geography of Inequalities*, OECD Publishing, Paris, https://doi.org/10.1787/92cd40a0-en.

ISBN 978-92-64-81264-2 (print)
ISBN 978-92-64-34116-6 (pdf)
ISBN 978-92-64-32839-6 (HTML)
ISBN 978-92-64-84384-4 (epub)

OECD Regional Outlook
ISSN 2663-6395 (print)
ISSN 2663-6409 (online)

Photo credits: Cover © iStock/Getty Images Plus.

Corrigenda to OECD publications may be found on line at: www.oecd.org/about/publishing/corrigenda.htm.

© OECD 2023

The use of this work, whether digital or print, is governed by the Terms and Conditions to be found at https://www.oecd.org/termsandconditions.

Foreword

Over the last two decades, while income gaps between OECD countries have narrowed, gaps between regions remain significant and within many countries have grown. Large metropolitan regions have continued to pull away from other areas, many of which are confronting shrinking, ageing populations and lower quality infrastructure and public services. Impacts of recent shocks, including the COVID-19 pandemic and Russia's war of aggression against Ukraine, and megatrends, threaten to widen gaps between regions, deepening the longstanding geography of inequalities.

However, this is not inevitable. This publication shows that over the past two decades, several countries have been able to narrow gaps between regions. As policymakers seek to emulate their success, they must look to seize the opportunities and address the risks presented to regions by climate change, automation, digitalisation and demographic shifts, as well as changing patterns of globalisation.

This sixth edition of the *OECD Regional Outlook* supports policymakers across OECD countries in their efforts to tackle inequalities and achieve more inclusive prosperity and well-being in regions, cities and rural areas. The report presents new evidence on the evolution of inequalities between regions over the past 20 years. It also sheds light on the critical role of productivity in addressing regional inequalities and the importance of improving infrastructure and public services in lagging regions as a platform for their revival, and for resilient, sustainable and inclusive growth. It shows how virtuous or vicious cycles can develop within regions, with far-reaching implications for the opportunities available to residents.

This *OECD Regional Outlook* emphasises the importance of policy frameworks that are agile and flexible to respond to future shocks. The report explores different forward-looking scenarios that contribute to ongoing reflections on future-proofing regional development policy to deliver more equal opportunities across regions. Governments in OECD countries need to take bold action to tackle the longstanding geography of inequalities, and the *OECD Regional Outlook 2023* concludes with a policy roadmap to guide those efforts now and in the future.

Acknowledgements

This publication was produced by the OECD Centre for Entrepreneurship, SMEs, Regions and Cities (CFE), led by Lamia Kamal-Chaoui, Director, as part of the programme of work of the Regional Development Policy Committee (RDPC).

This publication was co-ordinated by Delphine Clavreul, policy analyst, under the supervision of Dorothee Allain-Dupré, Head of the Regional Development and Multi-level Governance Division of CFE. Delphine Clavreul drafted Chapters 1, 4 and 5, and edited the report. Ana Moreno Monroy drafted Chapter 2, under the supervision of Enrique Garcilazo. Federica Daniele drafted Chapter 3 under the supervision of Rüdiger Ahrend and Alexander Lembcke. Frédéric Weill (Futuribles) provided important written contributions to Chapter 4. Delphine Clavreul and Mauricio Sepúlveda Vargas co-ordinated the development of the country pages (available online) complementing the report, with the support of Tainá Souza Pacheco. Eric Gonnard and Claire Hoffmann provided valuable statistical support, while Mauricio Sepúlveda Vargas helped with the oecdplot R package.

This report benefitted from insightful comments and inputs from colleagues in CFE: Nadim Ahmad, David Burgalassi, Betty-Ann Bryce, Claire Charbit, Isabelle Chatry, Amal Chevreau, Marcos Diaz Ramirez, Michael Flood, Peter Haxton, Soo-Jin Kim, Lukas Kleine-Rueschkamp, Michelle Marshalian, Tadashi Matsumoto, Maria Varinia Michalun, Atte Oksanen, Cem Özguzel, Andrew Paterson, Anna Rubin, Raffaele Trapasso, Geoff Upton, Miquel Vidal Bover, Stephan Visser, Alison Weingarden, Courtenay Wheeler, Yingyin Wu and Isidora Zapata. Trish Lavery and Dexter Docherty of the OECD Strategic Foresight Unit also provided useful feedback on Chapter 4. The OECD Secretariat thanks David Castells Quintana (Autonomous University of Barcelona), Philip McCann (Alliance Manchester Business School) and Joaquim Oliveira Martins (European Commission) for their valuable comments. Pilar Philip prepared the report for production.

The OECD Secretariat thanks the delegates to the RDPC for their valuable comments on earlier versions of the report and for providing inputs to the country pages. Thanks are also due to those RDPC delegates who participated in the foresight workshops organised in November 2022 and March 2023 as part of the preparation of the report. The report was approved by the RDPC through written procedure on 29 June 2023 (CFE/RDPC(2023)7-REV1).

Table of contents

Foreword 3

Acknowledgements 4

Abbreviations and acronyms 9

Executive summary 11

1 The global economic outlook could heighten regional inequalities in OECD countries 15
The repercussions of Russia's war of aggression against Ukraine are not felt equally across OECD countries 16
The energy crisis is taking a particularly heavy toll on some predominantly rural regions 16
Overall, subnational government finances are in relatively good shape but could deteriorate going forward 17
References 18

2 Twenty years of regional inequalities: Trends in OECD countries 19
Introduction 21
People's well-being at the centre of regional inequalities 22
Regional income inequality: Past, present and future outlook 30
Annex 2.A. OECD regional data and methodological notes 48
Annex 2.B. Summary tables 52
References 54
Notes 59

3 Productivity and regional income inequality 61
Introduction 63
Disparities in labour productivity within countries are large 64
Leveraging labour productivity to reduce GDP per capita inequality 66
Productivity growth through reallocation towards high-productivity sectors 70
Increasing productivity in all economic sectors and regions 72
Managing the gains and risks of trade integration 76
Towards productive and green regions 78
Annex 3.A. Supplementary figures and tables 80
Annex 3.B. Hysteresis and the effect of the global financial crisis 83
Annex 3.C. Rising dissimilarities in the local importance of tradeable sectors 85
References 87
Notes 90

4 The future(s) of OECD regions: Scenarios 2045 93
In Brief 94
Introduction 95
Why think of the future(s)? 95
Territorial foresight to futureproof regional policy making 99
Scenarios for OECD regions in 2045 104
Strategic considerations to future-proof regional development policy 111
References 115

5 A policy roadmap to address regional inequalities now and in the future 117
In Brief 118
Introduction 119
Leaving regional inequalities unchecked: The consequences of inaction 119
A policy roadmap to address regional inequalities effectively 126
References 146

FIGURES

Figure 2.1. Change in share of population in metropolitan TL3 regions, 2001-21 24
Figure 2.2. Population dynamics in the largest FUA, other FUAs and outside FUAs in OECD countries, 2001-21 25
Figure 2.3. Access to a higher education institution (20-24 year-olds) versus city-rural gap in the share of tertiary educated (24-65 year-olds), 2012-20 26
Figure 2.4. Location gap in travel time to healthcare versus location gap on Internet speed, OECD countries, 2020 28
Figure 2.5. Medium- and long-term population projections, OECD countries, 2021-2100 29
Figure 2.6. Trends in GDP per capita inequality indicators, TL3 OECD regions, 2000-20 33
Figure 2.7. Country GDP per capita gap with respect to OECD mean, 2000 and 2020 35
Figure 2.8. Trends in total, within and between regional income inequality TL2 and TL3 OECD regions, 2000-20 36
Figure 2.9. Trends in GDP per capita inequality indicators for selected countries, TL3 regions, 2000-20 38
Figure 2.10. Correlation between the Theil index of TL3 GDP per capita with top-to-mean and bottom-to-mean ratios and mean GDP per capita, 2000-20 39
Figure 2.11. Relative vs. absolute changes in polarisation based on real GDP per capita, TL3 OECD regions, 2000-20 40
Figure 2.12. Changes in the contribution of region types to regional income inequality based on TL3 GDP per capita, 2000-20 43
Figure 2.13. Share of top/bottom regions by region type, based on 2020 values for top/bottom regions 44
Figure 2.14. Spatial Gini index of GDP per capita at the TL3 level, OECD countries, 2021 45
Figure 2.15. Incidence of spatial clustering across OECD countries 46
Figure 2.16. Measuring the degree (dis)similarity among neighbouring regions: An example based on GDP per capita in Spanish TL3 regions 47
Figure 3.1. Productivity disparities within countries are larger than between countries in 2019 65
Figure 3.2. Regional inequality in labour productivity declined more than regional income inequality 65
Figure 3.3. Catching up has stalled for remote regions after the global financial crisis 66
Figure 3.4. Reducing labour productivity inequality results in a sizeable reduction in regional income inequality 68
Figure 3.5. Many non-metropolitan regions experience employment decline as productivity grows 69
Figure 3.6. Overall productivity growth is higher in regions reallocating jobs towards tradeable sectors 71
Figure 3.7. Non-metropolitan regions added employment in the industrial sector in countries where labour productivity inequality decreased 72
Figure 3.8. Firm creation has gone down in many countries 75
Figure 3.9. Regional disparities in investment growth are particularly large in East and Southern European countries 76
Figure 3.10. Regions that grew less than the national average had larger trade deficits 77

Figure 3.11. Highly polluting manufacturing sectors pay higher wages compared to the regional average in vulnerable regions 79
Figure 4.1. Regions have to anticipate the overlapping effects of megatrends and specific long-term transformations at the territorial level 98
Figure 5.1. Regional disparities in national government trust, 2021 123
Figure 5.2. Regional disparities in green-task jobs within countries 125
Figure 5.3. A policy roadmap to address regional inequalities 127
Figure 5.4. Linkages between the policy roadmap and the Recommendation on Regional Development Policy 144

Annex Figure 2.A.1. Number of TL2 and TL3 regions per million inhabitants, 2021 48
Annex Figure 2.A.2. The cumulative share of population by TL3 regions, OECD countries, 2021 49
Annex Figure 2.A.3. Difference in Gini coefficient of population distribution between TL2 and TL3 levels, based on 2021 population values 51
Annex Figure 3.A.1. 2001 employment shares and 2001-19 changes 82
Annex Figure 3.B.1. The global financial crisis has increased on average within-country disparities 84
Annex Figure 3.C.1. Employment shares in high-productivity sectors have become more dispersed 85

TABLES

Table 1. Acronyms 9
Table 2. Country abbreviations (ISO codes) 9
Table 2.1. Main demographic indicators by type of TL3 region 23
Table 2.2. Summary of main concepts related to regional income inequality 32
Table 2.3. A typology of regional income inequality trends based on GDP per capita at the TL3 level 37
Table 2.4. Contribution of TL3 region types to regional income inequality, based on 2010-20 averages 41
Table 3.1. Closing productivity gaps is important to reduce income inequality 68
Table 4.1. Key trends and projections related to megatrends and their impacts on regions 96
Table 4.2. Scenario overview 106
Table 5.1. Examples of complementarities across the policy roadmap 145

Annex Table 2.B.1. Summary GDP per capita regional (TL3) inequality measures by country, 2000-20 52
Annex Table 2.B.2. Summary table of the share of between-group inequality across TL3 region types, 2000-20 53
Annex Table 3.A.1. Country-level employment in different sectors, millions 80
Annex Table 3.A.2. Growth rate of regional inequality, selected indicators 81
Annex Table 3.B.1. Hysteresis has become more common across OECD countries over time 83

BOXES

Box 2.1. Demographic trends in functional urban areas 25
Box 2.2. Bottom-up versus top-down approaches to measuring regional income inequality 31
Box 2.3. Theil index of regional inequality and its decomposition 33
Box 2.4. A measure to compare the share of between-group inequality across countries 41
Box 2.5. Overlap between top/bottom and metropolitan/non-metropolitan regions 43
Box 2.6. Measuring the degree of (dis)similarity among neighbouring regions 46
Box 3.1. Making the link between GDP per capita and labour productivity 66
Box 4.1. Key concepts and benefits of strategic foresight 99
Box 4.2. Using foresight to develop future-oriented policy and programmes at the national level: Experiences in Canada, France and Switzerland 100
Box 4.3. Experiences in territorial foresight across the OECD 102
Box 4.4. How to use territorial foresight: Different approaches for different purposes 103
Box 4.5. The Regional Outlook 2023 foresight exercise 105
Box 5.1. Rethinking regional attractiveness in the new global environment 130

Follow OECD Publications on:



http://twitter.com/OECD_Pubs

http://www.facebook.com/OECDPublications

http://www.linkedin.com/groups/OECD-Publications-4645871

http://www.youtube.com/oecdilibrary

http://www.oecd.org/oecddirect/

This book has...

StatLinks

A service that delivers Excel® files from the printed page!

Look for the StatLink at the bottom of the tables or graphs in this book. To download the matching Excel® spreadsheet, just type the link into your Internet browser or click on the link from the digital version.

Abbreviations and acronyms

Table 1. Acronyms

AI	Artificial Intelligence
CEPR	*Contrat de plan État-région*
COVID-19	Coronavirus Disease 2019
EC	European Commission
ERDF	European Regional Development Fund
EU	European Union
EUR	Euro
FDI	Foreign Direct Investment
FUA	Functional Urban Area
GDP	Gross Domestic Product
GFC	Global Financial Crises
GHG	Greenhous Gas
GVA	Gross Value Added
GVC	Global Value chain
HEI	Higher Education Institutions
ICT	Information and Communication Technologies
IFCMA	Inclusive Forum on Carbon Mitigation Approaches
IPAC	International Programme for Action on Climate
KAU	Karlstad University
NEG	New Economic Geography
R&D	Research and Development
RDPC	Regional Development Policy Committee
SME	Small and Medium-sized Enterprise
TL2	Territorial Level 2
TL3	Territorial Level 3
USD	United States dollar

Table 2. Country abbreviations (ISO codes)

AUS	Australia
AUT	Austria
BEL	Belgium
CAN	Canada
CHE	Switzerland
CHL	Chile
COL	Colombia
CRI	Costa Rica
CZE	Czech Republic
DEU	Germany
DNK	Denmark
ESP	Spain
EST	Estonia

EU	European Union
FIN	Finland
FRA	France
GBR	United Kingdom
GRC	Greece
HUN	Hungary
IRL	Ireland
ISL	Iceland
ISR	Israel
ITA	Italy
JPN	Japan
KOR	Korea
LTU	Lithuania
LUX	Luxembourg
LVA	Latvia
MEX	Mexico
NLD	Netherlands
NOR	Norway
NZL	New Zealand
POL	Poland
PRT	Portugal
ROU	Romania
SVK	Slovak Republic
SVN	Slovenia
SWE	Sweden
TUR	Turkey
USA	United States

Executive summary

Converging fortunes of countries and diverging fortunes of regions

Over the last two decades, levels of gross domestic product (GDP) per capita have converged across OECD economies, driven in large part by higher growth in lower income economies. However, at the same time, over half of 27 OECD countries with available data saw income inequalities between their regions widen and in most other countries, including in those where regional income inequalities declined, they remained significant. Overall, over the last two decades, four trajectories emerge:

- **High income / rising inequality:** Some countries with GDP per capita above the OECD average– including Belgium, Denmark, France, Sweden, the United Kingdom, and the United States – saw regional inequalities increase.
- **Rising income / rising inequality:** Many countries that have been catching up to the OECD GDP per capita average have seen their regional inequalities increase, including many OECD countries in Eastern Europe that grew quickly.
- **High income / lower inequality:** Other countries, including Finland, Norway, Germany, the Netherlands, and New Zealand, demonstrated that it is possible to sustain high GDP per capita while narrowing gaps between places.
- **Low growth / lower inequality:** Southern European countries like Greece, Spain and Portugal saw regional inequalities fall but in a context of weak overall economic performance.

These different paths across countries show that, increasing regional inequalities are not inevitable and that, with the right policy environment, it is possible to tackle the longstanding geography of inequalities.

In many countries, metropolitan regions continue to surge ahead

Most metropolitan regions, both large and mid-sized, continue to benefit from agglomeration economies – advantages in productivity linked to size and proximity, including shared infrastructure, higher quality public services and better matching of workers with jobs and knowledge spillovers – driving new opportunities and growth. On average, metropolitan regions across the OECD had around 32% higher GDP per capita than other regions and the gap between large metropolitan regions and other regions accounts for the largest share of regional income inequality in most countries with large metropolitan regions.

Yet while the largest metropolitan regions have benefited from stronger growth than other regions, they are facing major challenges linked to their success – including in housing affordability, congestion, and, indeed, in inequality inside the regions. This emphasises the need to not only narrow gaps between the most and least successful regions but also for targeted spatial policies inside large metropolitan areas to overcome diseconomies of agglomeration, which can undermine performance.

As successful cities continue to grow and attract skilled workers, other areas are grappling with an ageing and shrinking population. Nearly 40% of remote regions and 22% of functional urban areas in the OECD

shrank between 2001 and 2021, undermining local public revenues while pushing up the costs of maintaining public services and infrastructure, and creating additional challenges such as dereliction and blight, which can be costly to fix.

Service gaps are undermining productivity, creating vicious cycles of stagnation and decline

Many areas are falling behind not just in income, but in broader dimensions that impact on well-being. Significant regional differences also exist for example in access to, and quality of public services and infrastructure. Whilst these impact directly on well-being, they also make it harder for lagging regions to attract and retain the people, skills and investment needed to break a vicious cycle of stagnation and decline, weighing down further on well-being and, indeed, productivity and income.

In many rural areas, residents struggle to access good education and training. Students in city schools obtained higher scores in reading than their peers in schools located elsewhere in all but two OECD countries with available data. Investing in quality transport infrastructure, especially public transport, is an important lever to improve access to education in rural communities, but the quality of schools also needs to improve in many such areas to provide a platform for future growth.

Travel times to healthcare facilities are obviously much larger – five times larger – in remote rural areas than in cities. This contributes to the fact that close to a third of rural residents in OECD countries reported health problems that prevented them from doing things people their age normally do compared to only a quarter of city residents.

Data from regulators in 26 OECD countries show a persistent rural-urban divide in digital infrastructure. On average a third of households in rural areas do not have access to high-speed broadband and only 7 out of 26 OECD countries have secured access to a high-speed connection for at least 80% of rural households. In Mexico and Canada, people in rural areas have connection speeds 40 percentage points slower than the national average. These gaps in digital access mean these areas will struggle to benefit from new remote working and telemedicine opportunities that could help them compensate for a lack of physical connectivity to jobs and services.

Boosting productivity will be key to reviving the fortunes of lagging regions

Efforts to raise productivity in lagging regions will be critical to tackle the longstanding geography of inequalities. Whilst different sector specialisms explain some of the productivity differences between regions, three quarters of the gap reflects differences in the productivity of firms within the same sector. Regional differences in the quality of infrastructure, access to skills, innovation spillovers, finance and markets and investment all play a role here. This implies that place-based policies that address these inequalities can also play a significant role in driving productivity growth in existing industries and sector specialisms.

Yet higher productivity does not automatically translate into better employment outcomes. While in urban areas productivity and job growth have typically gone hand-in-hand, in non-metropolitan regions a combination of automation and competitive pressures from lower-income economies, have resulted in a lower share of regions generating jobs growth as productivity has grown. At the same time, these areas have struggled to attract and retain the higher-skilled workers needed to develop new opportunities for growth, including in new industrial activities.

Place-based policies must be broad based to ensure that they support both productivity and jobs growth. Investment in skills, digital, infrastructure and communication gaps, as well as in access to finance, knowledge and innovation networks, and the quality of public services and local government can improve

the attractiveness of all regions, and encourage inward FDI, and support businesses to invest, export, innovate or adopt innovations and scale-up. In addition, the net zero transition can offer new opportunities for regions to boost productivity, while remote working also provides potential to entice high skilled workers away from metropolitan regions to mid-sized cities.

Persistent regional inequalities raise costs that are becoming too high to ignore

Some level of regional inequalities is inherent and unavoidable. However, the longstanding geography of inequalities is becoming deeply entrenched, with a scale and costs that are becoming increasingly difficult to ignore, including:

- *Economic costs*. Lagging regions and/or those trapped in vicious cycles of long-term stagnation account for a considerable proportion of economic activity in all countries and reflect untapped potential to drive growth. Their underperformance also comes with a fiscal cost – in terms of high levels of welfare support.
- *Social costs.* Persistent inequalities, also challenge the fiscal and administrative capacities of subnational governments to provide adequate access to key public services and infrastructure. These social costs are apparent both in economically dynamic regions that struggle with high house prices and congestion as well as in lagging regions where public services become stretched, reduced in quality or increasingly more difficult to access.
- *Political costs.* Regional inequalities can undermine trust in government across OECD countries, where the difference between a country's most and least trusting region can be as high as 30 percentage points. Low levels of trust are a signal of growing discontent and disengagement, and low social cohesion and can undermine democracy over time.

Building the resilience of all regions to face shocks and adapt to megatrends

Recent global crises and the urgency of adapting to megatrends have heightened the need for more agile and flexible policy frameworks. The three forward-looking scenarios for 2045 presented in Chapter 4 explore different futures for regions and their policy. The chapter also sets out ways to future-proof regional development policy, by adapting fiscal systems and governance structures and developing foresight capacity at the national and subnational levels to better prepare regions for the future.

A policy roadmap to address regional inequalities now and in the future

This report proposes a policy roadmap to support catching up in lagging and stagnant regions while sustaining prosperity in the most dynamic regions. To do so will require coordinated action across five complementary priorities:

- *Ensuring access to key public services and infrastructure*, e.g. by improving access to services close to where people live, including through digitalised services, and attracting and retaining skilled public service professionals.
- *Boosting productivity and competitiveness*, e.g. by supporting regions' integration in global value chains, investing in transport and digital infrastructure and supporting small and medium-sized towns.
- *Providing the right skills and job opportunities in regional labour markets*, e.g. by providing flexible training, education and employment services, building regional entrepreneurial ecosystems and building up the social economy.

- *Improving the quality of multi-level governance systems*, e.g. by clarifying the responsibilities assigned to subnational governments and delivering policies and services at the “right” scales.
- *Strengthening capacity at the national and subnational levels*, e.g. by investing in subnational fiscal capacity and building strategic and administrative capacity.

These actions build on and complement the 2023 OECD Recommendation on Regional Development Policy, which will serve as a compass to help governments implement effective place-based regional development policy.

1 The global economic outlook could heighten regional inequalities in OECD countries

The global economy is facing mounting challenges. Growth has lost momentum, core inflation is persistent and confidence has weakened. Russia's war of aggression against Ukraine pushed up prices substantially, adding to inflationary pressures at a time when the cost of living was already rapidly rising around the world. While the global economy seems to be turning a corner, uncertainty is high. This global outlook is translating into different outcomes across places and risks exacerbating already high and persistent regional inequalities in many OECD countries.

The repercussions of Russia's war of aggression against Ukraine are not felt equally across OECD countries

Over a year on from Russia's war in Ukraine, economic and social repercussions have been profound and are likely to be long-lasting. Managing the humanitarian crisis remains an immediate priority. While some key risks, such as persistent large-scale energy and food market disruptions have been mitigated for now, governments at all levels are still grappling with the implications of persistent core inflation, high debt levels and low potential output – jeopardising efforts to rebuild their economies post COVID-19 and to deliver stronger and more sustainable growth. The OECD's latest *Economic Outlook* (2023[1]) highlights how the war continues to overshadow the world economy and how, despite signs of improvement, recovery over the next two years will be weak by past standards. The report projects that growth will remain at below-trend rates in 2023 and 2024, at 2.6% and 2.9% respectively (OECD, 2023[1]).

While headline inflation has declined, it remains elevated and could persist longer across OECD countries. The unexpected persistence of these pressures in 2022 owed largely to the outbreak of the war, which resulted in an immediate spike in a number of key commodity prices: oil, gas and coal, a range of metals, wheat and corn and some edible oils, as well as fertilisers. Inflation is projected to moderate gradually over 2023 and 2024 but remains above central bank objectives until the latter half of 2024 in most countries (OECD, 2023[1]). Even prior to the war, inflation pressures had begun to rise, with both demand- and supply-side factors contributing to price increases in OECD economies. Some of these factors have subsided or begun to reverse over 2022. Uncertainty about the course of the war in Ukraine and its broader consequences is a key concern. Pressures in global energy markets could also reappear, leading to renewed price spikes and higher inflationary pressures.

The ripple effects of the war have not been felt equally across countries over the past months and have important implications for regions and regional development policy, not least in the wake of the spatial challenges caused by the COVID-19 crisis. Russia's invasion has added new layers of complexity to an already rapidly changing and highly unpredictable world and has served to highlight and sometimes compound already wide and persistent regional inequalities in many OECD countries (OECD, 2022[2]).

The energy crisis is taking a particularly heavy toll on some predominantly rural regions

The energy crisis sparked by the war is delivering a shock of unprecedented breadth and complexity. The biggest tremors have been felt in the markets for natural gas, coal and electricity – with significant turmoil in oil markets as well, necessitating two oil stock releases of unparalleled scale by countries to avoid even more severe disruptions. With unrelenting geopolitical and economic concerns, energy markets remain extremely vulnerable, according to the latest *World Energy Outlook* (IEA, 2022[3]).

The global energy crisis is having far-reaching implications for people, places and firms, prompting short-term responses from governments as well as a deeper debate about the ways to reduce the risk of future disruptions and promote energy security. Net energy export positions and exposure to Russian oil and gas disruptions in particular have shaped the consequences of the turmoil in energy markets for individual countries.

Regions in OECD countries have very heterogeneous energy supply mixes. In 2019, over 50 OECD European regions relied on gas – in large part imported – for more than 50% of their electricity generation. Another 20 regions – including Budapest in Hungary, Groningen in the Netherlands and Lazio in Italy – relied on gas for more than 60% of electricity generation (OECD, 2022[2]). Regions specialised in industries and products more dependent either directly or indirectly on energy, and gas in particular, are exposed to the largest declines in output, employment and the stock of firms, through either reduced firm birth or higher

firm exit. Twenty-five percent of regions with the highest employment shares in gas-intensive sectors are particularly concentrated in Central European countries, notably Austria, the Czech Republic, Poland, the Slovak Republic and Slovenia, as well as in Finland, Northern Italy and Sweden (OECD, 2022[2]). The potential closing of firms or industries due to high production costs might spur further the decline of manufacturing and de-industrialisation that was already underway in several OECD regions long before the crisis, with permanent negative effects on labour capacity utilisation.

Because of their less diversified energy mixes and higher incidence of low-income households, rural regions face the highest energy poverty risk. Analysis of 91 regions from the Czech Republic, Portugal and Spain confirms higher energy poverty in rural regions (OECD, 2022[2]). Estimates of energy poverty show that 38% of non-metropolitan regions are energy poor, with an additional 27% of regions being at risk. In general, living in a non-metropolitan region itself increases the chance of energy poverty by 35%. Additional factors that increase energy poverty include the share of elderly people in a region, low average income and high energy expenditures. Some of these elements being prevalent in non-metropolitan regions means that energy poverty imparts an uneven impact across geographies, particularly on regions outside of small and medium-sized cities.

Overall, subnational government finances are in relatively good shape but could deteriorate going forward

Despite the effects of the COVID-19 pandemic on growth, subnational government revenues have already returned to pre-crisis levels (in real terms) or exceeded growth in expenditures in most OECD countries (OECD, 2023[4]). However, despite the overall good health of subnational governments' finances, their debt levels are at historical highs, which can raise substantial risks. On the one hand, subnational governments in many countries do not issue debt but rather obtain loans which may have floating rates. This means that debt costs can react immediately to interest rate hikes, rapidly increasing the historically low interest paid-to-revenues ratio. On the other hand, the costs of other forms of subnational government funding, such as arrears, are likely to decrease with inflation as they are generally not indexed. In addition, this exposure may vary substantially across jurisdictions – meaning that some individual local/state governments could be exposed to such risks while others not. Another important factor to alleviate these risks is the extent of subnational cash balances that can serve as a valuable cushion for shocks.

Looking forward, subnational government finances could deteriorate, and, in some countries, the updated projection indicates a loss in revenues in the same order of magnitude experienced at the peak of the 2008-09 global financial crisis (OECD, 2023[4]). Although subnational government revenues tend to be more stable than those from the central government, their short-term buoyancy (i.e. the sensitivity of government revenues to economic activity in the short term) is still close to unity, meaning that a reduction in gross domestic product (GDP) growth will almost proportionally affect their revenues. However, there are substantial asymmetries across countries, driven mostly by differences in their tax mixes, with the impact being more substantial for subnational governments relying on corporate income tax revenues and less substantial for those that rely mostly on property taxes (OECD, 2023[4]). According to the OECD's latest estimates, revenue collection is expected to deteriorate at the subnational level in member countries. Subnational government revenues are projected to grow by 1.1% to 10.2%, with an average of 4.5%, which represents an average decrease of 2.4 percentage points (OECD, 2023[4]).

The delicate financial situation central governments find themselves in will likely hinder substantial central support to subnational governments in the future. Not only have national governments absorbed most of the COVID-19 shock (de Biase and Dougherty, 2022[5]) but they are also absorbing the fiscal costs of cushioning household living standards at a time of high inflation. There are also limits to the extent to which national fiscal policy can be stretched, as such policy might also put pressure on prices, prompting reactions from central banks to further raise policy interest rates and, thus, affect debt servicing costs.

References

de Biase, P. and S. Dougherty (2022), "The past and future of subnational fiscal rules: An analysis of fiscal rules over time", *OECD Working Papers on Fiscal Federalism*, No. 41, OECD Publishing, Paris, https://doi.org/10.1787/d2798c9e-en. [5]

IEA (2022), *World Energy Outlook 2022*, IEA, Paris, https://www.iea.org/reports/world-energy-outlook-2022. [3]

OECD (2023), *OECD Economic Outlook, Volume 2023 Issue 1*, OECD Publishing, Paris, https://doi.org/10.1787/ce188438-en. [1]

OECD (2023), "The intergovernmental fiscal outlook and the implications of Russia's war against Ukraine, high energy prices and inflation", *OECD Working Papers on Fiscal Federalism*, No. 42, OECD Publishing, Paris, https://doi.org/10.1787/3623ab61-en. [4]

OECD (2022), "The implications for OECD regions of the war in Ukraine: An initial analysis", *OECD Regional Development Papers*, No. 34, OECD Publishing, Paris, https://doi.org/10.1787/8e0fcb83-en. [2]

2 Twenty years of regional inequalities: Trends in OECD countries

The chapter explores the evolution of regional inequalities in OECD countries over the past two decades. It connects trends in where people and economic activity are located to the evolution of inequalities between regions. The first section explores the (re)allocation of people across regions. The following section looks more specifically at trends in regional income inequalities, identifying growth-inequality paths in OECD countries and assessing how differences between metropolitan versus non-metropolitan regions have driven regional inequalities.

In Brief

- People mobility is a powerful mechanism to bridge disparities within countries but it can also exacerbate regional and inter-personal inequalities as economic opportunities concentrate in a few places and inter-personal gaps widen. Throughout the course of their lives, people typically move from one region to another in search, in turn, of job opportunities, higher incomes, lower housing prices and well-being from amenities. These mobility dynamics have led to geographic imbalances within OECD countries and today, metropolitan regions, especially large ones, grow faster than non-metropolitan regions as a result.
- While OECD economies have grown closer together over the past 20 years, many of their small (TL3) regions have not. After several decades of convergence between and within countries, the deepening of globalisation in the early 2000s did not create equal opportunities for all regions and triggered a change of regime, which was made even more evident after the 2008 global financial crisis (GFC). Since then, gross domestic product (GDP) per capita has continued to increase and converge across the OECD but small regions at the top and bottom of the income distribution within countries followed different patterns.
- Today, 70% of the OECD population live in a country with regional divergence across small regions. Yet, a closer look reveals that trends in regional inequalities paint a diverse picture and there is no single story of how these inequalities have evolved across the OECD. Rather, the panorama of regional income inequalities has become more fragmented and four main trajectories emerge:
  - **Some countries with high levels of GDP per capita saw their regional inequalities increase**: Belgium, Denmark, France, Sweden, the United Kingdom and the United States, for instance, have all seen the gap between their top- and bottom-performing regions widen and the gap between their mean and median incomes increase.
  - **Many of the countries that have been converging towards the OECD GDP per capita mean have seen their regional inequalities increase**, such as in the case of East European countries that grew quickly after their accession to the European Union and whose pre-existing inequalities have further deepened.
  - **Other countries with relatively high levels of GDP per capita saw regional gaps closing**, including Finland, Germany, the Netherlands, New Zealand and Norway.
  - **Southern European countries** like Greece, Portugal and Spain saw **their regional inequalities decrease but in the context of low growth performance**, since the GFC.
- Persistent differences between metropolitan and non-metropolitan regions have been driving regional income inequalities in most OECD countries. The difference between income per capita in large metropolitan regions and other regions explains the largest share of regional income inequality in nine countries with increasing inequality and large regions (Czech Republic, Denmark, France, Hungary, Poland, Sweden, Türkiye, United Kingdom and United States). Metropolitan versus non-metropolitan differences explain the largest share of regional inequality in all (six) of the remaining countries with increasing inequalities, except in Italy where differences between regions far from midsize/large functional urban areas (FUAs) matter the most.

Introduction

> *"Suppose that I drive through a two-lane tunnel, both lanes going in the same direction, and run into a serious traffic jam. No car moves in either lane as far as I can see (which is not very far). I am in the left lane and feel dejected. After a while the cars in the right lane begin to move. Naturally, my spirits lift considerably, for I know that the jam has been broken and that my lane's turn to move will surely come any moment now. Even though I still sit still, I feel much better off than before because of the expectation that I shall soon be on the move. But suppose that the expectation is disappointed and only the right lane keeps moving: in that case I, along with my left lane co-sufferers, shall suspect foul play, and many of us will at some point become quite furious and ready to correct manifest injustice by taking direct action (such as illegally crossing the double line separating the two lanes)." (Hirschman and Rothschild, 1973, p. 545[1])*

Economic development is uneven. Places have different levels of growth potential reflecting differences in endowments. These typically result in shifts of people and capital to those places driving growth, which can, in turn, increase regional disparities (Kuznets, 1955[2]; Glaeser and Gottlieb, 2009[3]; Combes et al., 2011[4]; Puga, 1999[5]). Regional development policies, along with redistribution policies (e.g. fiscal or social policies), play an important role in ensuring that all members of society are able to benefit. Whilst regional development has increasingly oriented around mechanisms that can increase the potential of all regions to contribute to growth, there is an increasing tension in designing them based on models that are optimised for national income growth, which has often resulted in tensions between economic policies that prioritise the allocation of labour and capital to places where they are most productive in contrast to models based on reducing territorial disparities.

Whilst the two are not necessarily contradictory, the evidence from many OECD countries suggests that there can be trade-offs in practice and that solely focusing on growth and factor allocation at the national level can perpetuate often entrenched territorial disparities, including in many other dimensions of inequality beyond economic growth.

In many large cities, there is a concentration of top jobs and learning opportunities, in part because of agglomeration effects but also because of attractive amenities and diverse social networks, among other factors that serve as magnets for the higher educated (Moretti, 2012[6]; Südekum, 2021[7]). At the same time, residents of places with more limited access to opportunities often experience lower well-being, worse lifetime achievement and, indeed, partly because of the more limited opportunities, less geographic mobility, hampering their ability to move to places with higher well-being potential (Kemeny and Storper, 2020[8]). These effects not only persist in certain places but also persist over time, as they transmit across generations (Manduca, 2019[9]; Hanushek and Woessmann, 2020[10]; OECD, 2021[11]).

Whilst the costs of these more limited opportunities impact directly on the individuals themselves, there are broader costs to society, through disrupted social cohesion and political instability (Hirschman and Rothschild, 1973[1]; Dijkstra, Poelman and Rodríguez-Pose, 2019[12]), but also to the economy, through the potential costs needed to manage lower resilience to shocks (OECD, 2020[13]; 2022[14]). Indeed, even at the national level, the costs of these "remedial" measures may actually outweigh any potential benefits of place-blind "growth first" policies, which often have relatively short time horizons and, so, may not even be optimal from a longer-term growth perspective.

Bridging differences in access to opportunities is indeed an important part of the solution to reducing regional inequalities. These efforts should go hand in hand with promoting economic dynamism through productivity gains (EC, 2022[15]; OECD, 2020[16]). However, whilst gaps in GDP per capita have narrowed across OECD countries over the past two decades, gaps between regions within many countries have been persistent, with many regions in countries experiencing both growth and stagnation remaining very much in the "rear-view mirror" (OECD, 2020[16]; Diemer et al., 2022[17]; EC, 2022[15]). Indeed, some of the most advanced OECD economies have some of the highest regional disparities.

Whilst there are many factors that can explain the relatively poor performance of some regions, the asymmetric impacts of the knowledge economy and globalisation have certainly contributed, generating a much more complex landscape of sectoral specialisation, firm location and knowledge diffusion (Autor, Dorn and Hanson, 2013[18]; Navaretti and Markovic, 2021[19]; Kemeny and Storper, 2020[8]; OECD, 2021[20]).

In most OECD economies, these gaps have been in large part driven by the performance and agglomeration effects of large metropolitan regions. But relying solely on top-performing regions to boost aggregate productivity is not enough. Even setting aside the costs associated with weaker social cohesion that may arise through significant and persistent spatial inequalities, externalities such as rising congestion may also begin to limit the attractiveness of large cities (Navaretti and Markovic, 2021[19]; Dijkstra, Garcilazo and McCann, 2013[21]). Moreover, the dynamic gains from density, while powerful drivers of growth (Ahlfeldt and Pietrostefani, 2019[22]), do not extend to all cities (Venables, 2018[23]) nor, indeed, benefit all social groups.

In this context, the scope and ambition of regional development policies have evolved too, moving from subsidies to compensate economically weaker regions to an investment agenda aimed at unlocking competitiveness and growth potential in all places and, more recently, growth with an increased emphasis on living standards and well-being (OECD, 2009[24]; 2011[25]; 2012[26]; 2014[27]; 2019[28]). Indeed, several OECD countries including Italy, Korea, Poland and the United Kingdom have shifted their attention and put in place dedicated policies to narrow spatial inequalities and promote more balanced development (OECD, 2022[29]; 2018[30]; UK Government, 2022[31]). That being said, many more countries still do not have dedicated policy frameworks for reducing regional disparities.

This chapter looks back in time to explore the evolution of regional inequalities in OECD countries over the last two decades. The first section looks at the (re)allocation of people across regions, while the second examines trends in regional income inequalities, identifying growth-inequality paths in OECD countries and the role of differences between metropolitan and non-metropolitan regions in driving regional inequality. Chapter 3 then takes a closer look at the nexus between regional income disparities and labour productivity across regions.

People's well-being at the centre of regional inequalities

Many OECD countries have reached a plateau in their population growth and, in some populations, are declining. At the same time, populations are ageing. However, while these trends are generally true at the national level, they are often more profound or indeed very different within countries, reinforcing the importance of a place-based approach to tackling inequalities and driving inclusive growth.

This section takes a closer look at those demographic challenges, including the role of migration within countries and the impact they have on regional inequalities, and access to key infrastructure and services across regions.

The share of people living in large metropolitan regions is growing

Across OECD countries, metropolitan regions concentrate 70% of the population. The proportion of people living in rural areas within each region type increases from 9% in large metropolitan regions to 52% in remote regions. People living in towns and semi-dense areas (or suburbs) as defined by the degree of urbanisation (OECD et al., 2021[32]) are most common in regions near a metropolitan area (Table 2.1).

Table 2.1. Main demographic indicators by type of TL3 region

Small region type/Indicator	Metropolitan large	Metropolitan midsize	Near a midsize/large FUA	Near a small FUA	Remote
Share of population, 2021 (%)	42.2	28.1	12.3	7.8	9.5
Share of foreigners (%)	52.8	27.5	6.3	10.4	2.9
Population in cities, 2020 (%)	71.9	44.5	25.0	22.0	12.7
Population in rural areas, 2020 (%)	9.0	23.9	33.9	42.9	51.9
Population in FUAs, 2020 (%)	92.5	76.4	37.9	41.8	1.5
Old-age dependency ratio, 2021 (%) (average across regions in parenthesis)	24.8 (24.5)	29.2 (29.1)	30.7 (32.4)	29.9 (30.6)	27.0 (30.4)
Change in the share of population, 2001-21 (%)	1.6	-0.2	-0.6	-0.5	-0.4
Annual population growth 2001-21 (%) (average across regions in parenthesis)	0.9 (0.9)	0.5 (0.6)	0.3 (0.4)	0.3 (0.3)	0.4 (0.03)
Share of shrinking regions, 2001-21 (%)	10.0	21.1	31.5	36.6	38.3

Note: Results for 36 OECD countries (data not available for Costa Rica and Israel). Old-age dependency ratio is defined as the ratio of population over 65 years old over population 15-64 years old. Employment is measured at place of work. Share of population in FUAs, cities and rural areas based on 2023 Global Human Settlement Layer (GHSL) grids. See Annex 2.A for a definition of region types and OECD (2021[32]) for a definition of the degree of urbanisation. Shrinking regions are regions with an annual population growth of at least -1% over 2001-21.
Source: OECD (2022[33]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/; Schiavina et al., (2023[34]) *GHSL data package 2023*, https://publications.jrc.ec.europa.eu/repository/bitstream/JRC133256/JRC133256_01.pdf; Souder, A. et al. (2021[35]), "Going granular - A new database on migration in municipalities across the OECD", *OECD Regional Development Working Papers*, OECD, Paris.

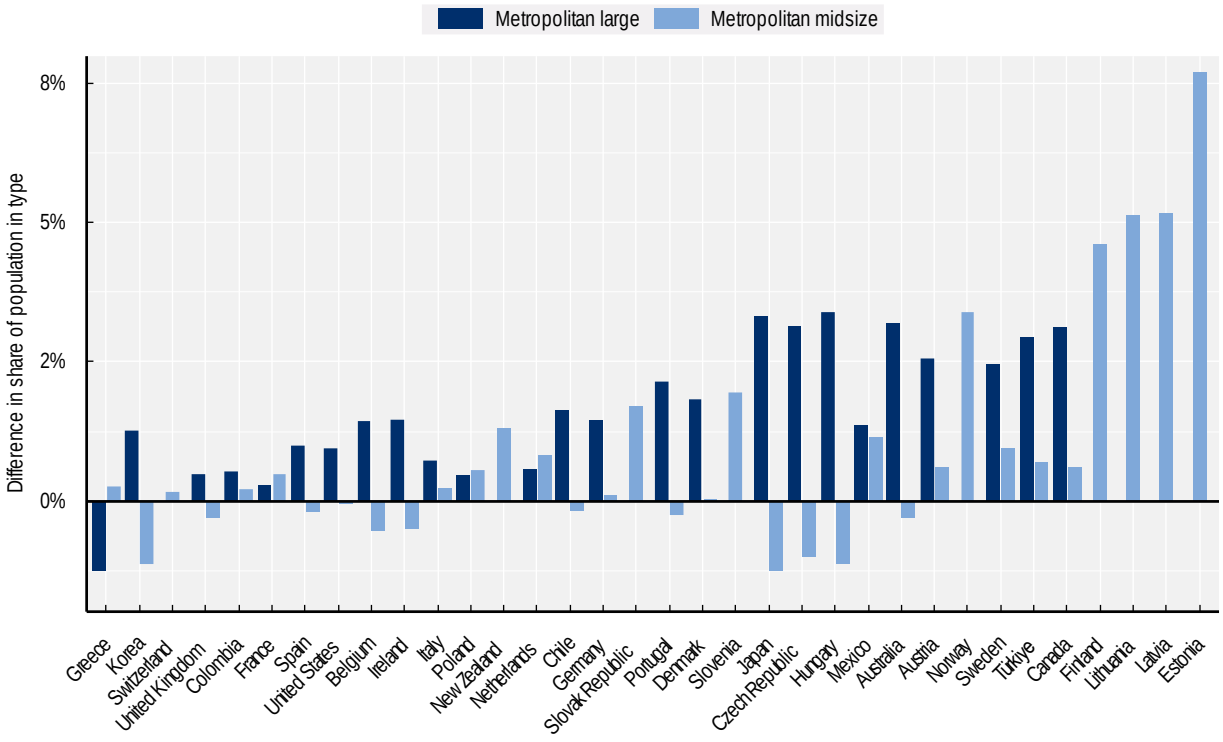
Metropolitan regions host a larger proportion of people today compared to two decades ago in all OECD countries except Greece. A key driver behind this change has been the increasing concentration of population in large metropolitan regions, which increased their population share from around 40% in 2001 to 42% in 2021 (across 24 OECD countries with at least 1 large metropolitan region). Meanwhile, the share of metropolitan midsize regions and remote regions decreased slightly (by 0.3 percentage points), while the share of regions near midsize/large FUAs showed the largest decrease (0.7 percentage points) followed by regions near a small FUA (0.5 percentage points). Within regions, from 2000 to 2015, the share of population living in cities (as defined by the degree of urbanisation) increased by around 3 percentage points across the OECD while the share of population in rural areas decreased.

About half of the countries where the share of population in large metropolitan regions increased saw a decrease in the share of people living in midsize metropolitan regions in 2001-21 (Figure 2.1). Population growth has concentrated in the largest FUAs while about one-quarter of all FUAs in OECD countries are shrinking (see Box 2.1). The increase in the contribution of metropolitan regions is especially large, for example, in small countries with one to three midsize metropolitan regions and no large metropolitan regions (Estonia, Finland, Latvia, Lithuania, the Slovak Republic and Slovenia).

The increasing importance of metropolitan regions results from the compounded effect of internal and international migration and natural growth rates (the difference between births and deaths). Across 28 OECD countries with available data, 29 million people (about 3% of the OECD population) changed their region of residence every, year on average in 2016-19. In that period, metropolitan regions and regions close to them gained respectively 10.5 and 7 persons per every 10 000, while regions far from midsize/large FUAs lost 10 persons for every 10 000 (OECD, 2022[36]). The foreign-born population living in OECD countries reached 138 million in 2021 (10.6% of the total population of OECD countries) (OECD, 2022[37]). Both nationals (and especially youth) and international migrants settle disproportionally in metropolitan areas, especially large ones: 8 in 10 migrants live in metropolitan areas compared to 7 in

10 natives (OECD, 2022[36]) (Table 2.1). Migration, therefore, has made metropolitan regions not only larger but also more diverse and younger (OECD, 2022[38]).

Figure 2.1. Change in share of population in metropolitan TL3 regions, 2001-21



Source: OECD (2022[33]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

StatLink https://stat.link/xkqyaz

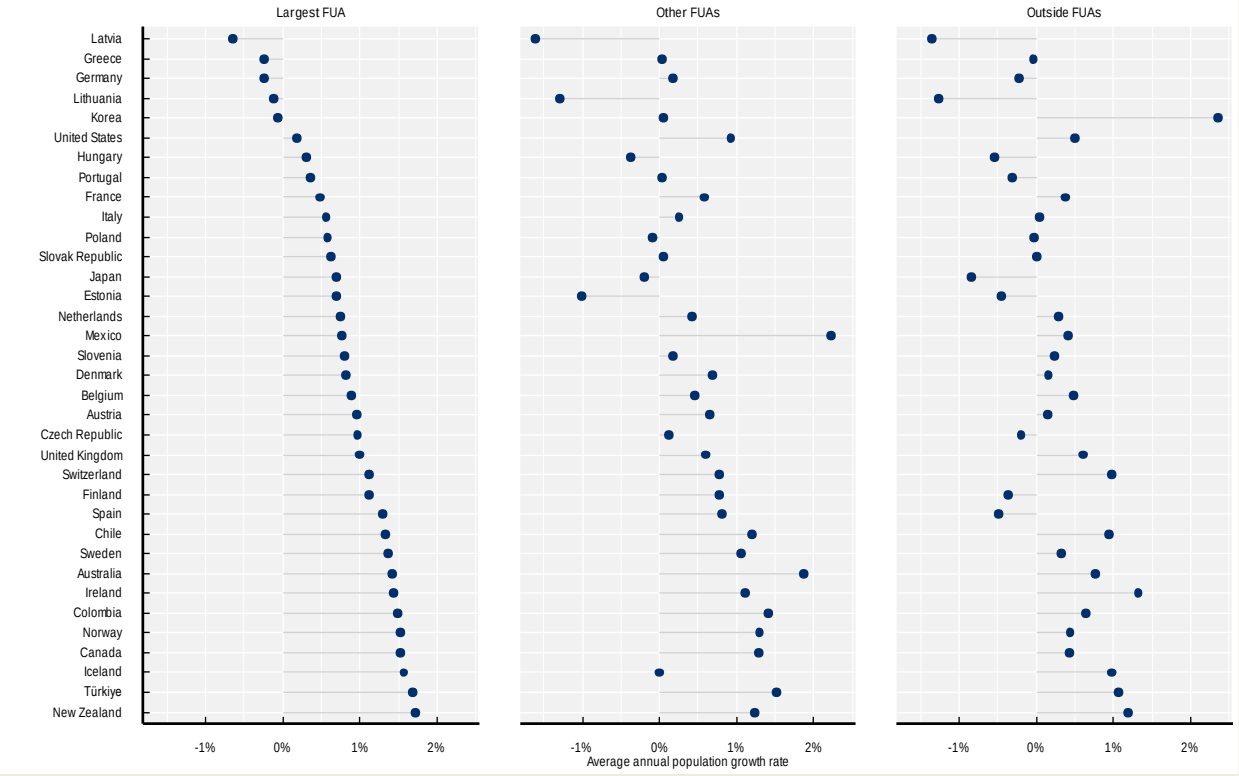
Regions that do not manage to attract working-age migrants eventually see their working-age population shrink and their elderly dependency ratios increase. On average, old-age dependency ratios are higher in non-metropolitan regions (Table 2.1), while remote regions represent the highest share of regions with old-age dependency ratios above 50% (6.3%, or 46 in 733) compared to other types of regions (5.4% of regions near a midsize/large FUA, 3.5% of regions near a small FUA, 3.4% of metropolitan midsize regions and 1.4% of metropolitan large regions). Furthermore, a larger proportion of non-metropolitan regions is shrinking compared to metropolitan regions: for instance, the proportion of regions that showed shrinking in 2001-21 was 28 percentage points higher in remote regions compared to large metropolitan regions (Table 2.1). Indeed, most regions with the lowest share of working-age population (and high elderly dependency ratios) shrank at a rate of 1% annually or more in the last 2 decades. In Lithuania, Latvia and Portugal, the top three countries facing the largest population decline, regions with a negative annual population growth of at least 1% represented respectively 80%, 67% and 12% of all regions.

Box 2.1. Demographic trends in functional urban areas

FUAs hosted more than 931 million inhabitants in OECD countries in 2021 (69% of the total population) in 10% of the OECD surface area. Over the last 20 years, the population in FUAs grew on average by 0.7% a year but by only 0.5% in areas outside FUA populations. FUAs' populations grew in all OECD countries except for Greece, Hungary and Latvia, while the population outside FUAs shrank in ten countries. The largest FUA grew in nearly all OECD countries, except Greece and Latvia (Figure 2.2).

Figure 2.2. Population dynamics in the largest FUA, other FUAs and outside FUAs in OECD countries, 2001-21

Weighted average annual growth rates



Source: OECD (2022[33]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

StatLink https://stat.link/co9grs

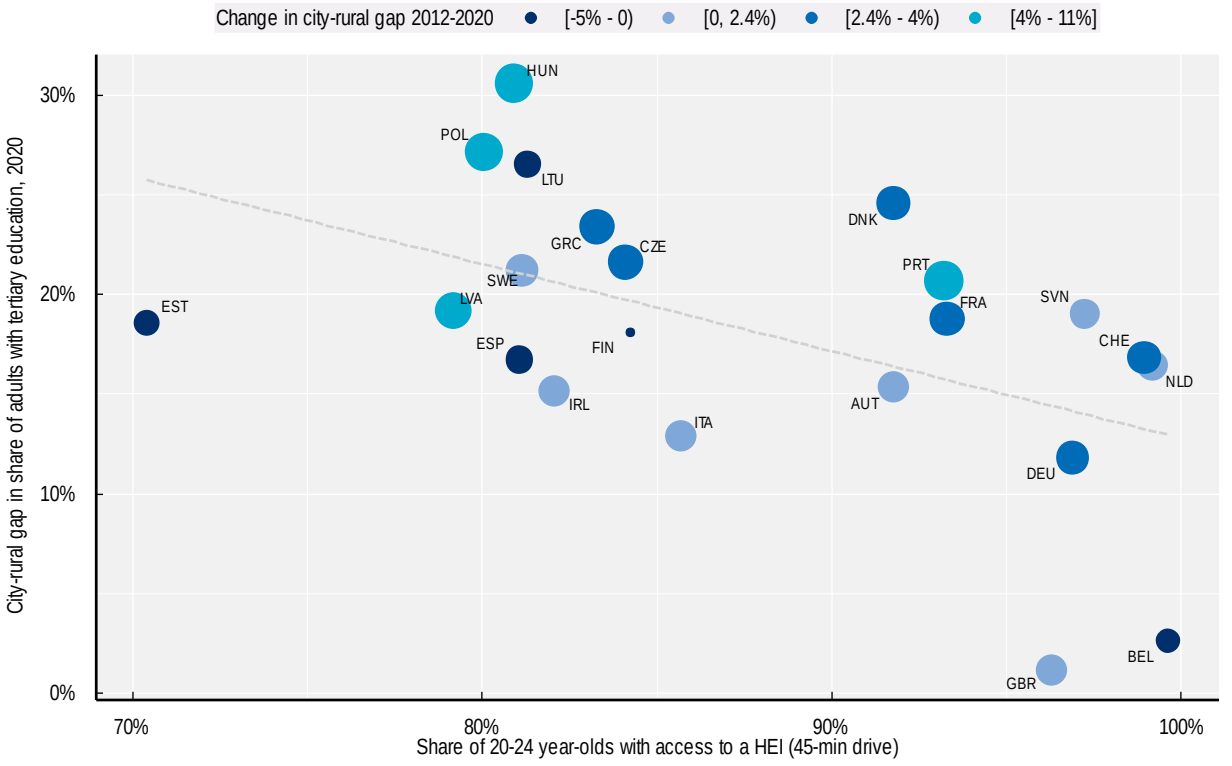
Population trends varied with the size of FUAs. FUAs with at least half a million inhabitants had on average the highest annual growth rates (0.71% between 2001 and 2021). FUAs between 250 000 and 500 000 inhabitants had lower growth rates (0.57%) but also lower than FUAs with less than 250 000 inhabitants (0.65%). Furthermore, between 2001 and 2021, 22% of FUAs in OECD countries saw populations shrink. In 11 countries, the share of shrinking FUAs is above 40%.

The tertiary-educated population increasingly concentrates in cities

The tertiary educated, i.e. those with a higher education degree, are increasingly concentrated in cities. In 2020, the share of adults with tertiary education was larger in cities than in rural areas in all OECD countries with available data except the United Kingdom (25 out of 26 countries) (Figure 2.3). The gap ranged from 30 percentage points in Hungary to 2 percentage points in Belgium. Compared to 2012, this city-rural gap increased in 19 out of 25 countries with available data, with Poland, Portugal and the Slovak Republic registering the largest increases (about 7 percentage points). However, the share of the tertiary educated increased in all countries during the period and, in all countries except for Hungary, the increase in the city-rural gap was smaller than the increase in the share of the tertiary educated.

Figure 2.3. Access to a higher education institution (20-24 year-olds) versus city-rural gap in the share of tertiary educated (24-65 year-olds), 2012-20

City-rural gap measured as the difference in the share of adults (24-65 year-olds) with tertiary education



Note: HEI: Higher education institution.
Data only include European OECD countries and the United Kingdom. Tertiary educated status is based on the highest education level attained (ISCED 5-8). Data for main campuses only for Denmark. HEI data for 2020 or the latest year available.
Source: Eurostat (2022[39]), *European Union Labour Force Survey*, https://ec.europa.eu/eurostat/web/microdata/european-union-labour-force-survey; OECD (2022[40]), "ADHEP database", Unpublished, OECD, Paris; Mapbox (2022[41]), *Navigation*, https://docs.mapbox.com/api/navigation/.

StatLink https://stat.link/js1ot7

People with tertiary education are disproportionally represented in capital city regions in most OECD countries: large capital regions have the highest share of 24-65 year-olds who completed tertiary education in 28 out of 34 OECD countries and accession candidates (i.e. Brazil, Bulgaria, Croatia, Peru and Romania) with available data in 2021 (OECD, 2022[42]). Capital regions can be particularly attractive for the highly educated when they concentrate most of the quality higher education opportunities and a large public

sector. However, as discussed in more detail below, they also exhibited the highest income inequalities in half of the 26 OECD countries with available data based on the S80/S20 ratio[1] for the disposable income indicator (OECD, 2022[36]).

Rural-urban differences in the share of people with tertiary education may be related to gaps in access to higher education. In 31 OECD countries with available data, 66% of people living in remote regions can access a higher education institution within a 45-minute car trip, compared to 98% for those living in a large metropolitan region. This metric however does not consider the availability and reliability of other means of transportation such as public transport which, when insufficient, can drastically worsen matters, especially for low-income vocational students (OECD, 2022[43]).

Smaller gaps in enrolment in higher education compared to gaps in the share of residents with a higher education degree may point to higher "brain circulation" (i.e. the movement of people for educational purposes). People may get their education outside cities but move to cities in search of quality jobs for professionals. Large city-rural gaps in countries with low access to higher education establishments like Hungary may be related to both poorer access to higher education and lower matching opportunities for professionals outside cities. In contrast, in countries with high access like Portugal, gaps may be mostly related to the concentration of job opportunities in cities (Figure 2.3). Large gaps in the quality of educational offers may not only make the educational offer outside cities less attractive but also lead to worse entrepreneurial or job market outcomes for graduates in rural areas (OECD, 2022[44]; 2022[45]). This may in turn hamper the movement of the tertiary educated to rural areas in search of natural amenities, social and family connections and better housing options.

Establishing evidence of "brain drain" – the increasing flows of educated people from rural areas to cities – nevertheless requires following people over the course of their lives. One of the few studies using cohort data on place of residency versus place of origin of graduates shows that major cities gain and rural areas lose graduates in the United Kingdom, with London consolidated as the main magnet for graduates (Institute for Fiscal Studies, 2021[46]).

Persistent subnational gaps in access to services perpetuate territorial differences in well-being

Available evidence points to substantial subnational gaps in access to services. In OECD countries, travel time, using motorised vehicles, for people living in remote rural areas to reach a healthcare facility is five times longer than those in metropolitan regions. In Europe, students in remote rural areas have to travel on average five additional kilometres to reach a school compared to students in other areas (JRC, 2022[47]).

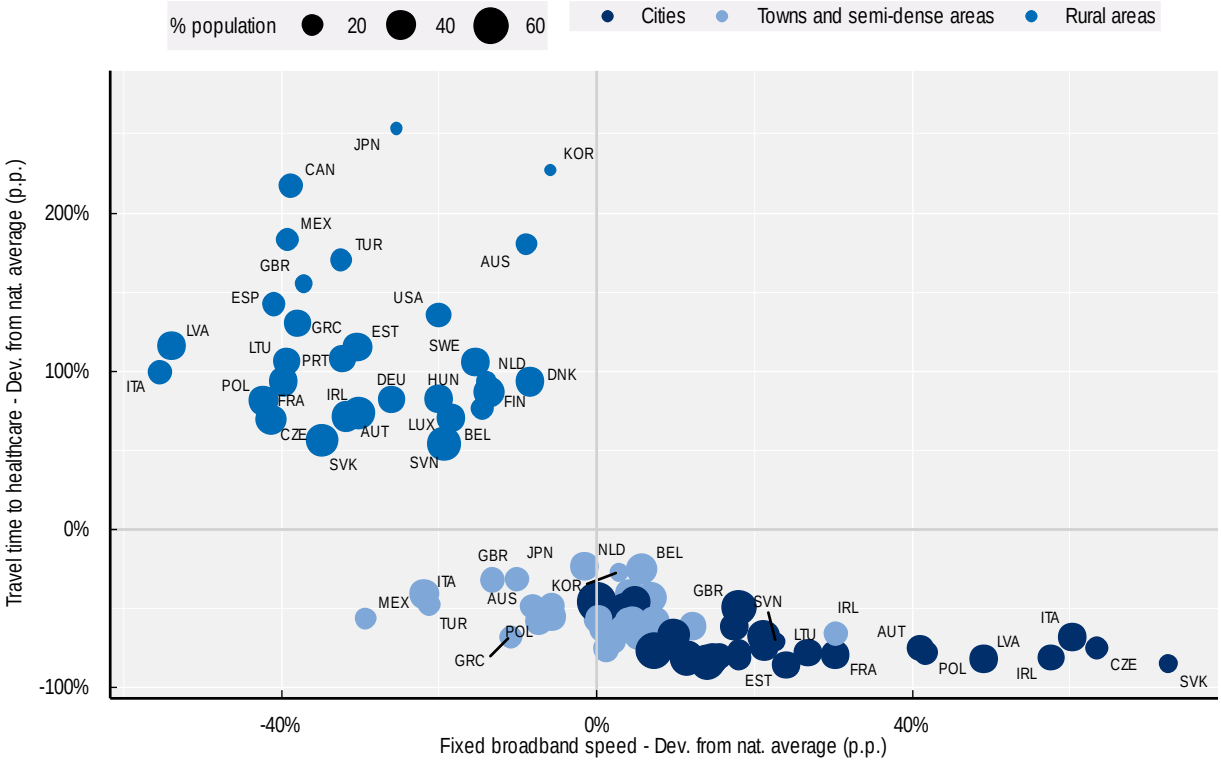
These gaps may translate into unequal outcomes. Results from PISA[2] show that students in city schools obtained higher scores in reading than their peers in schools located elsewhere in all but two OECD countries with available data (OECD, 2022[14]). Moreover, the importance of enhanced access to rural residents may also be greater. For instance, close to one in three rural residents reported suffering from health problems that prevent them from doing things people their age normally do compared to only one in four city residents (OECD/EC, 2020[48]).

Rural facilities are often required to centralise services and keep minimum quality requirements. In healthcare, for instance, rural facilities often face higher relative costs, lower volumes, poorer overall quality and workforce shortages. Across OECD countries, the number of hospital beds per capita in remote regions fell at an average rate of -0.7% per year since the 2008 GFC, while they slightly increased in metropolitan regions (OECD, 2021[11]). The gap in hospital bed rates between metropolitan regions compared to regions far from metropolitan areas – which stood at 50% in 2020 – increased by 5 percentage points with respect to the pre-pandemic period, because hospital bed rates increased faster in metropolitan regions than in regions far from metropolitan areas (18% vs. 14%) (OECD, 2022[36]). The negative impacts

on the distance to care (Hsia et al., 2012[49]) and treatment delays for patients due to hospital closures in rural areas can offset any cost gains, especially in the face of sudden increases in demand for care, like during the COVID-19 pandemic (OECD, 2021[11]; 2020[50]).

While digital provision offers a way to overcome long travel times, lower economies of scale, longer ambulance transportation times and fewer healthcare workers, rural areas that stand the most to benefit from telemedicine often have poor Internet connectivity levels (OECD, 2021[51]; 2021[11]). Data from regulators in 26 OECD countries indicate a persistent rural-urban divide in connectivity speeds: 1 in 3 households in rural areas do not have access to high-speed broadband on average and, in only 7 out of 26 OECD countries, more than 80% of households in rural regions have access to a high-speed connection (OECD, 2020[52]). Across OECD countries, rural areas facing long travel times to healthcare facilities also face below-average access to high-speed broadband: for instance, in Canada and Mexico, people in rural areas face about 200 percentage points longer travel times and about 40 percentage points fewer Internet speeds than the national average.

Figure 2.4. Location gap in travel time to healthcare versus location gap on Internet speed, OECD countries, 2020



Note: Travel time to healthcare is calculated using driving as a transport mode. Deviation from the national average is calculated from median values by the degree of urbanisation weighted by population levels in each 1 km^2 grid cell.
Speedtest data correspond to 2020Q4. The data for average fixed and mobile broadband download Speedtests reported by Ookla measure the sustained peak throughput achieved by users of the network. Measurements are based on self-administered tests by users, carried over iOS and mobile devices. Aggregation according to the degree of urbanisation was based on Global Human Settlement Model (GHS-SMOD) layer grids. The figure presents average peak speed tests, weighted by the number of tests.
Source: For travel time to healthcare: Calculations based on Weiss, D. et al. (2020[53]), "Global maps of travel time to healthcare facilities", https://doi.org/10.1038/s41591-020-1059-1. For fixed broadband speed: Calculations based on Speedtest® by Ookla® Global Fixed and Mobile Network Performance Maps. Based on analysis by Ookla of Speedtest Intelligence® data for 2020Q4. Provided by Ookla and accessed 2021-01-27 (see OECD (2021[51]) for details). Ookla trademarks are used under license and reprinted with permission.

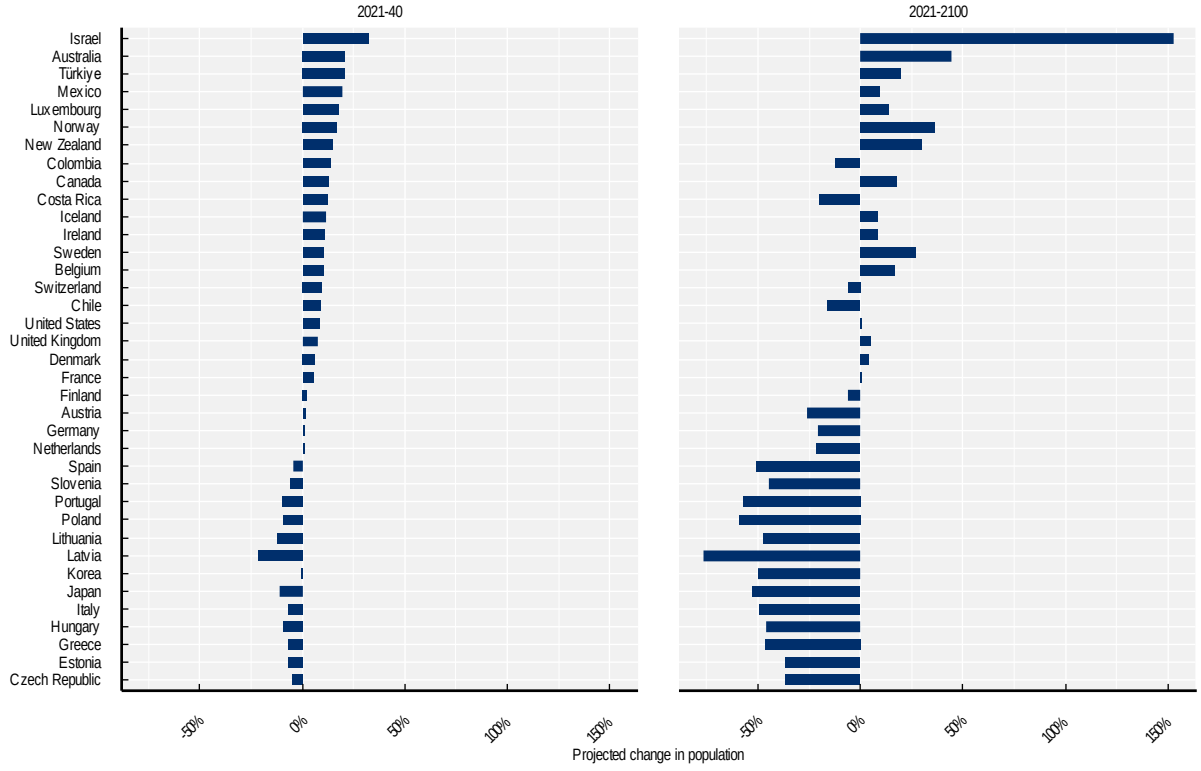
StatLink https://stat.link/qnas15

Regional inequalities will evolve in a context of a shrinking population in half of OECD countries

In the medium and long terms, changes in the distribution of people within countries will happen in the context of stable or decreasing population stocks in half of OECD countries. Populations are expected to decline in 14 OECD countries by 2040 and 18 by 2100, with the largest decreases in East and Southern European countries, Japan and Korea (Vollset et al., 2020[54]). Besides differences in fertility rates – which were already below replacement levels in all OECD countries except Israel in 2021 – differences in international migration and life expectancy drive differences in projected population changes.

The future also holds fundamental changes in age structures across OECD countries: the number of children under 5 years of age could decline from 63.5 million in 2021 to about 59.2 million in 2040 whilst the number of elderly (older than 80 years) is expected to nearly double, from 66.5 million to 114.7 million (Vollset et al., 2020[54]). These population projections have stark implications for elderly dependency ratios in OECD countries: while in 2021, there are about 13 working-age people (15-64 years old) for every elderly person, in 2040, there will be only 7 (Rouzet et al., 2019[55]; OECD, 2019[56]; 2022[14]).

Figure 2.5. Medium- and long-term population projections, OECD countries, 2021-2100



Note: Change is calculated as the difference between years over the initial value.
Source: Based on data from Vollset, S. et al. (2020[54]), "Fertility, mortality, migration, and population scenarios for 195 countries and territories from 2017 to 2100: A forecasting analysis for the Global Burden of Disease Study", https://doi.org/10.1016/s0140-6736(20)30677-2.

StatLink https://stat.link/yfsjpe

Against this backdrop, metropolitan regions are expected to slightly increase their population share by 2040. In absolute terms, the number of people living in metropolitan regions is expected to remain constant

by 2040, while the number of people in non-metropolitan regions is expected to shrink (by 2.8% and 2.3% in regions near and far from a midsize/large FUA) (OECD, 2022[36]).

Within regions, the population living in FUAs in OECD countries is expected to increase from 950 million to 1 billion. Most of this increase will concentrate in large FUAs, which are expected to grow by 5% by 2030 while small and medium-sized FUAs are expected to shrink by 4% and 3% over the same period (OECD, 2022[36]). Areas outside cities are also projected to increase in absolute terms but at a slower pace than cities. By 2050, the population in towns and semi-dense areas is projected to increase from 2.1 billion to 2.3 billion worldwide, while the population in rural areas is expected to expand from 1.7 billion to 1.9 billion (OECD/EC, 2020[48]).

Regional income inequality: Past, present and future outlook

The evolution of regional income inequalities[3] hinges upon both the relative evolution of national income per capita levels (linked to national GDP per capita growth) and the redistribution of income within countries. Major economic shocks have an effect not only on national growth rates but also on gaps in income per capita across regions. This is because regions differ in their degree of resilience to shifts and shocks (Rice and Venables, 2020[57]). Structural factors then – and in particular the resilience of those factors to shocks – rather than shocks per se are key drivers of regional inequalities (Garcilazo, Moreno-Monroy and Oliveira Martins, 2021[58]; OECD, 2022[59]).

The 2008 GFC put a halt to regional convergence in many OECD countries (OECD, 2022[36]; 2020[16]; Faggian and Ascani, 2021[60]). In this context, the income gaps between metropolitan and non-metropolitan regions have not closed since then, in part because metropolitan regions have proven to be more resilient to crises than non-metropolitan regions (OECD, 2020[16]). In the past two decades, the gap between GDP per capita in non-metropolitan versus metropolitan regions – of around 68% – did not close across the OECD (OECD, 2022[36]).

This section presents evidence of regional income inequality trends. It focuses mostly on small (TL3) regions in 2000-20, which offer a more granular territorial analysis and allows for classifications based on access to cities (see Annex 2.A). This section does not attempt to draw inferences regarding the effect of the COVID-19 pandemic as current data available (2019-20) are not sufficient to evaluate the impact of and recovery from this shock on regional income inequalities. The section starts by proposing a classification of OECD countries according to their regional income inequality trends. It then identifies distinct growth inequality paths. The section then assesses the importance of metropolitan versus non-metropolitan gaps in driving regional income inequalities across countries. Finally, it explores the role of proximity between regions in driving regional income inequality.

The data used in the analysis have several limitations (see also Annex 2.A). This section assesses differences in income inequalities across regions and FUAs, which reflect underlying structural, including geographical, factors as well as demographic differences (e.g. higher elderly dependency ratios). Whilst there is also interest in identifying spatial differences in income inequalities for similar demographic cohorts (e.g. gender, age, race and sexual orientation), data to assess these are unfortunately unavailable (see Box 2.2).[4] As data on disposable income are unfortunately not available for small regions, the section uses regional GDP per capita as a proxy for the typical income of a representative individual in a region (this interpretation applies to the unweighted version of the Theil index, see Gluschenko (2017[61])). This means that the regional inequality measures used in this section are not indicative of the evolution of inter-personal inequalities or the situation of any given income-group (Rey, Arribas-Bel and Wolf, 2020[62]).

Box 2.2. Bottom-up versus top-down approaches to measuring regional income inequality

A top-down approach allows for high frequency and large country coverage but has several shortcomings

International comparative measures of spatial income inequality aim at capturing to what extent people of different incomes live in different locations. Locations can vary in levels of spatial aggregation, from large areas such as countries to small areas such as neighbourhoods. A "top-down" approach to measuring regional income inequality over time, which this chapter uses, is to combine GDP ("income") with population counts series.

Aggregated series allow for the identification of trends across many countries because they are available in most OECD countries, are comparable across countries and are available yearly. However, they have several shortcomings: i) GDP and population may not be recorded in the same place, requiring further aggregation (e.g. of all small regions that are part of the same FUA, see Annex 2.A); ii) in countries with significant shares of capital-intensive industries (e.g. mining), GDP per capita levels likely do not reflect the income levels of the average resident; iii) aggregate series do not provide insights on the full income distribution within regions (see Annex 2.A for further explanation); iv) residents in one region may work in another region, thus contributing to the GDP per capita of that region but contributing directly to their own income, which means that translating differences in GDP per capita levels across regions (that provide important insights on broader economic growth, including on fiscal potential of regions) to assess differences in the disposable income of residents should be done with care.

A bottom-up approach is preferable for understanding household personal incomes and allows to look at different parts of the income distribution but is not available for a wide number of countries and years

A "bottom-up" approach uses declared incomes and location information available from administrative sources, primarily tax records. This approach allows for measuring income disparities across regions as well as income inequality within regions.

The main advantages of this approach compared to a "top-down" one includes: the availability of information on the full income distribution, as opposed to mean levels only; high geographical granularity (going even below the small region level); and more accuracy in definitions to capture more precisely the disposable income of households. However, the main drawbacks of this approach are in turn its relative infrequency (e.g. by census rounds, every 5 or 10 years) and more difficulties in establishing international comparability, as reported taxable units (e.g. households or individuals) and types of income (e.g. gross or disposable) vary across countries.

Recent OECD work (Königs et al., forthcoming[63]) uses administrative records to analyse income levels and distributions for small regions (TL3) and smaller units (e.g. municipalities) in half of OECD countries. However, these data are only available for a relatively short time span – in most cases starting in the mid-2000s – which limited the study of regional income inequality to current trends rather than to long-term dynamics. The main findings align with those of this chapter:

- Trends in regional income disparities are not uniform across countries, but regional median incomes have converged over the last decade in most of the countries with available data.
- Income disparities between regions account for a very small fraction of overall income inequality. Instead, disparities within the same region account for at least 95% of the overall inequality.

- Regional income disparities are high in some countries. Across small (TL3) regions, median household incomes for the highest- and lowest-income regions differ by a factor of only 1.2 to 1.3 in some of the Nordic countries, but by 1.7 and 1.6 in Japan and Latvia.
- Metropolitan regions concentrate on high median incomes and high inequalities. Across 17 countries with available data, over 75% of large metropolitan regions are in the top quartile of regions by median income and by the level of inequality.

Source: Königs, S. et al. (forthcoming[63]), "The geography of income inequalities in OECD countries: Evidence from national register data", OECD Publishing, Paris.

Income per capita gaps have narrowed between OECD countries but gaps within countries remain large

Over the last two decades, most OECD regions have seen improvements in their GDP per capita ratios but with significant divergences between small regions at the top and bottom of the income distribution. Top concentration and divergence of bottom regions persisted during the period, except in 2020 for the first year of the COVID-19 pandemic, leading in turn to an increase in the mean-to-median ratio[5] (Figure 2.6, Panel B; see Table 2.2).

The structural effects of COVID-19 on regional inequalities will take time to materialise and, as such, it is not yet possible to interpret the impact of the pandemic on bottom convergence and top deconcentration observed in 2019-20 as a new trend of declining inequalities or a temporary consequence of the fall in economic activity during that period.

Table 2.2. Summary of main concepts related to regional income inequality

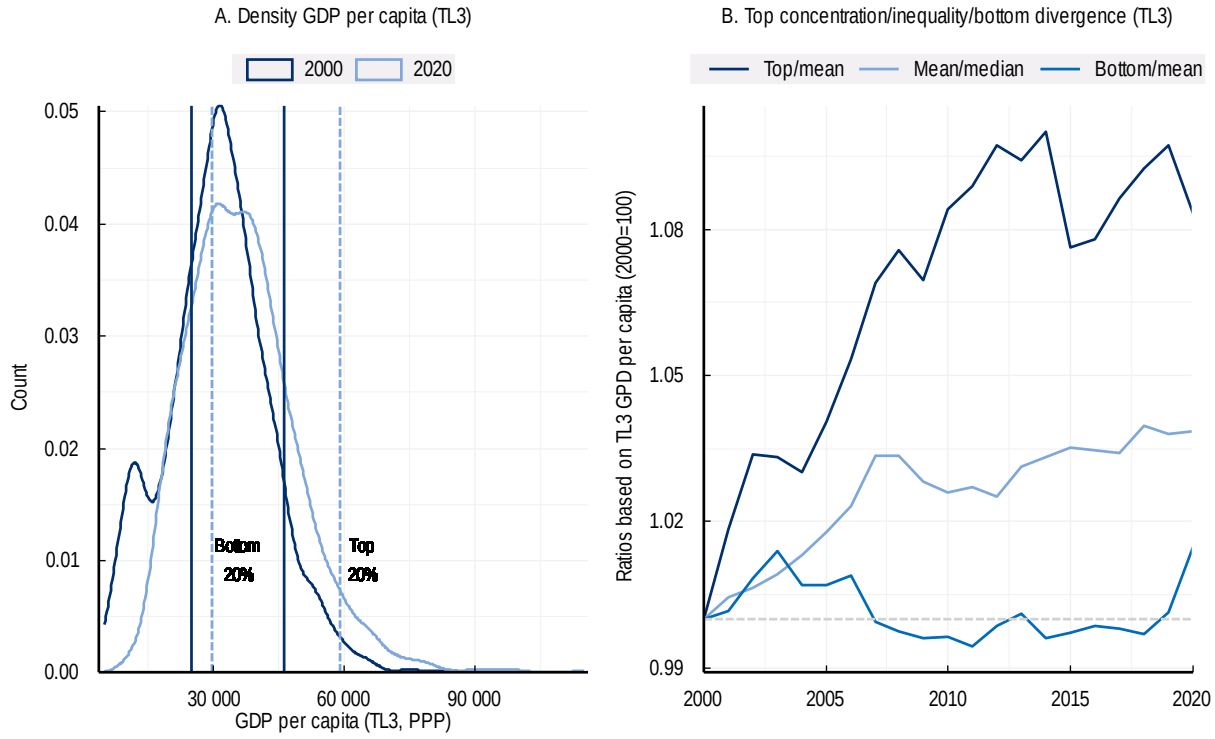
Concept	Definition	Measurement
Increase/decrease in income per capita regional inequality	Increase/decrease in the Theil index or mean-to-median ratio	Unweighted Theil index of TL2/TL3 GDP per capita; mean TL2/TL3 GDP per capita over median TL2/TL3 GDP per capita
Top concentration/deconcentration	Increase/decrease in the top 20% to mean ratio	Mean GDP per capita in top 20% regions over mean TL3 GDP per capita in a given year
Bottom regions convergence/divergence	Increase/decrease in the bottom 20% to mean ratio	Mean TL3 GDP per capita in bottom 20% regions over mean TL3 GDP per capita in a given year
Polarisation/depolarisation	Increase/decrease in the top 20% to bottom 20% ratio	Mean TL3 GDP per capita in the bottom 20% of regions over mean TL3 GDP per capita in the top 20% of regions
Between (group) inequality	Variability across the group (i.e. country) means with respect to the overall (OECD) income per capita mean	Theil index between/within decomposition based on TL2/TL3 GDP per capita (see Annex C in OECD (2020[52]))
Within (group) inequality	Variability in regional income per capita with respect to their group mean	

Note: Top/bottom calculated as population equivalent (top/bottom regions with at least 20% of the population). The interpretation of top/bottom 20% GDP per capita is that 20% of the population in the country holds 20% of the value.
Source: Based on multiple sources.

The Theil index offers a way to observe the variability of regional incomes per capita in OECD countries in a single measure. The index compares the income per capita in each region to the mean of all regions across OECD countries. The index partly captures differences in GDP per capita levels across countries:

for instance, if a country experienced faster growth than the OECD average each year while everything else remained the same, the Theil index would decrease, even though the variation in regional incomes stayed the same. The index decomposition into a "between" and a "within" component is useful to assess the changes in the variability of regional income per capita, controlling for the effect of changes in national income per capita (see Box 2.3 and Table 2.2) (OECD, 2020[52]; Elbers et al., 2008[64]).

Figure 2.6. Trends in GDP per capita inequality indicators, TL3 OECD regions, 2000-20



Note: Vertical lines in Panel B represent group mean values.
The density GDP per capita plot does not include 4 TL3 regions with GDP per capita over EUR 150 000. Based on 26 OECD countries with available GDP per capita data for 2000-20 and more than 1 TL3 region.
Source: OECD (2022[33]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

StatLink https://stat.link/qe859l

Box 2.3. Theil index of regional inequality and its decomposition

Decomposition of the Theil index

The Theil index of regional income inequality measures the spread (variance) in GDP per capita levels across regions. It is the sum of the (log) ratio of GDP per capita in region i and the mean GDP per capita over all regions, weighted by the share of region i in the total GDP per capita:

$$Theil = \sum_{i=1}^{R} ln\left(\frac{GDPpc_i}{\overline{GDPpc}}\right) weight_i, \text{ with } weight_i = \frac{GDPpc_i}{\sum_{i=1}^{R} GDPpc_i}$$

The assumption when applying the Theil index to regional inequality is that each region is composed of a representative individual with an income approximated by the average GDP per capita of their region

and, therefore, the index is invariant to how many people live in each region but not to the number of regions there are in the country.

Standard between/within decomposition of the Theil index

The Theil index for regional inequality can be further refined to capture the contribution within specific groups (e.g. countries) and between those groups. To determine the "between" contribution, we take the sum of the (log) ratio of the average GDP per capita in each group j and the mean GDP per capital over all regions, weighted by the share of GDP per capita of group j in total GDP per capita:

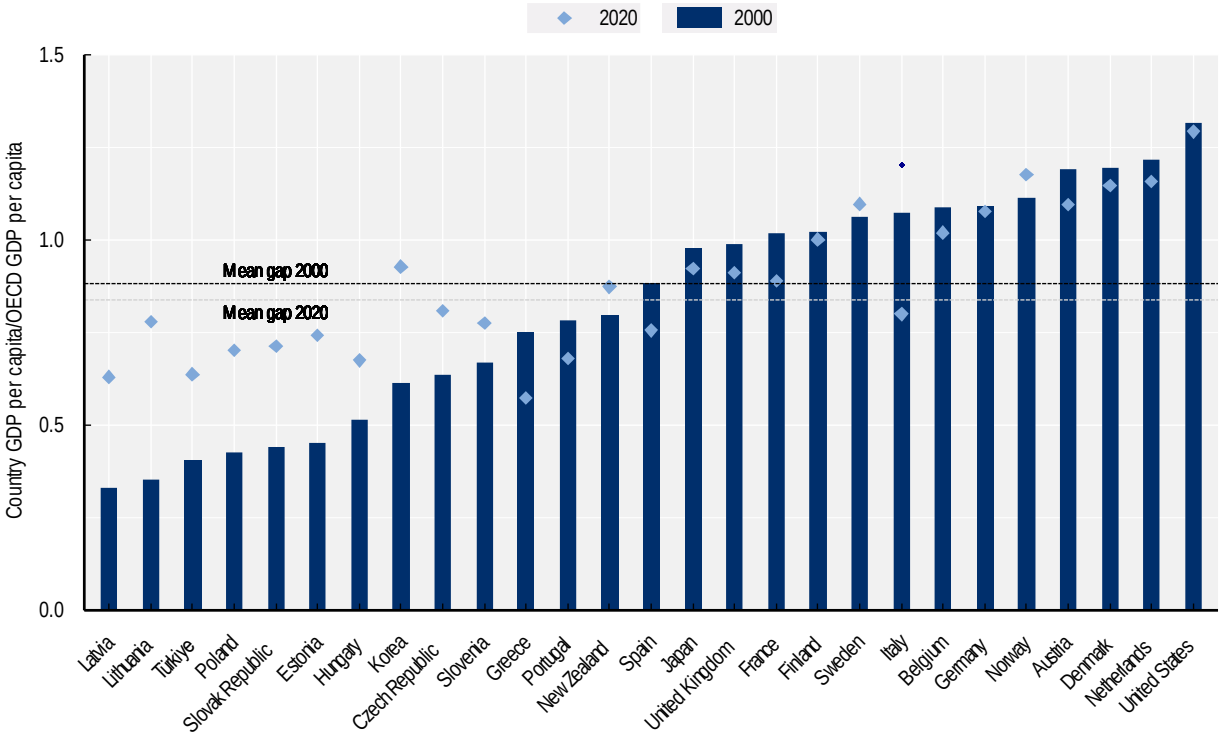
$$Theil_{between} = \sum_{j=1}^{M} ln\left(\frac{\overline{GDPpc_j}}{\overline{GDPpc}}\right) weight_j, \text{ with } weight_j = \frac{\sum_{i=1}^{N} GDPpc_{ij}}{\sum_{i=1}^{R} GDPpc_i}$$

To determine the "within" contribution, we calculate the inequality in regional incomes with respect to their group means, weighted by the share in their group and the share of their group in the total (equal to the share of GDP per capita of the region in the sum of total GDP per capita):

$$Theil_{within} = \sum_{j=1}^{M} \sum_{i=1}^{R} ln\left(\frac{GDPpc_{ij}}{\overline{GDPpc_j}}\right) weight_i$$

Separating country-level convergence (between) from region-level convergence (within) is of particular relevance, not least because the evidence does point to a "catching-up" effect in many countries, particularly former industrial transition economies in the European Union, Korea and Türkiye. Ten out of 13 countries with GDP per capita below OECD averages in 2000 saw the gaps narrow in the last 2 decades (Figure 2.7). On the other hand, some countries, notably Greece, Italy, Portugal and Spain saw gaps grow relative to the OECD average. Overall, 19% of the OECD population lived in regions within countries experiencing upwards convergence and 12% lived in countries experiencing divergence.

Figure 2.7. Country GDP per capita gap with respect to OECD mean, 2000 and 2020

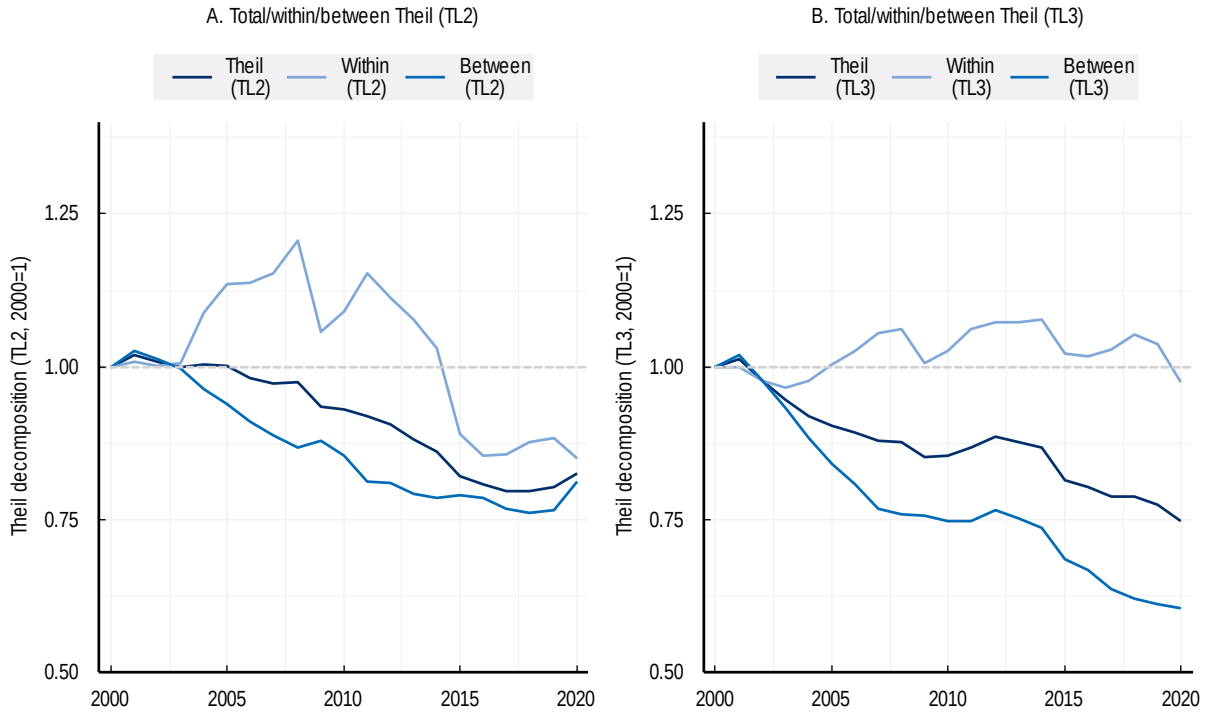


Note: Based on country aggregates from TL3-level data. The gap is defined as each country's GDP per capita with respect to OECD GDP per capita. The mean gap is the mean value of gaps across OECD countries. Converging countries had a 2000 GDP per capita gap below the mean gap across OECD countries and a smaller gap in 2020 (i.e. a larger country GDP per capita to OECD GDP per capita ratio): the Czech Republic, Estonia, Hungary, Korea, Latvia, Lithuania, New Zealand, Poland, the Slovak Republic, Slovenia and Türkiye. Diverging countries had a 2000 GDP per capita gap in below the mean gap across countries and a larger gap in 2020 (i.e. a smaller country GDP per capita to OECD GDP per capita ratio): Greece, Italy, Portugal and Spain. Countries above OECD levels had gaps above the mean gap across OECD countries in 2000 and 2020: Austria, Belgium, Denmark, France, Finland, Germany, Japan, the Netherlands, Norway, Sweden, the United Kingdom and the United States.
Source: OECD (2022[33]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

StatLink https://stat.link/s8kwcb

The broad convergence in overall between-country inequalities capture in Figure 2.7 is also reflected in the Theil "between" measure (see also Box 2.3) in Figure 2.8. However, whilst inequalities between countries have, on the whole, declined over the last two decades, this has not been mirrored with similar progress on within-country inequalities. At the large region (TL2) level for example, within-country inequalities increased from 2000 to 2015 before decreasing, while at the small region (TL3) level, within-country income inequalities slightly increased over the period, with marginal improvements often occurring during severe economic shocks. The absolute levels of within-country inequality stayed in a narrow range compared to changes in between-country inequality, so decreasing between-country inequality drove decreases in overall inequality across large and small regions. In both cases, the decrease in between-country inequality compensated for the rise in within-country inequality.[6]

Figure 2.8. Trends in total, within and between regional income inequality TL2 and TL3 OECD regions, 2000-20



Note: Panel A is based on 385 TL2 regions in 28 OECD countries with available data (no TL2 data [continuous time series for more than 1 region] available for Chile, Costa Rica, Estonia, Iceland, Israel, Ireland, Latvia, Lithuania, Luxembourg and Switzerland). Panel B is based on 1 586 TL3 regions in 27 countries with available data (no TL3 data [continuous time series for more than 1 region] for Australia, Canada, Chile, Colombia, Costa Rica, Iceland, Ireland, Israel, Luxembourg, Mexico and Switzerland). Between Theil measures the dissimilarity of the national GDP per capita means with respect to the OECD average. Within Theil measures the dissimilarity between regional and national GDP per capita. See Box 2.3 more for details.
Source: OECD (2022[33]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

StatLink https://stat.link/91f60k

Over half of OECD countries saw regional income inequalities increase in the last two decades

Looking only at regional inequalities among small regions (TL3), 15 out of 27 countries with available data since 2000 saw regional income inequalities increase over the last 2 decades (Table 2.3) (see Annex Table 2.B.1 for the full set of results). This means that 70% of the OECD population live in countries (with available data) that experienced increases in regional income inequality. Table 2.3 also differentiates countries on whether they were converging to or diverging from the OECD average (see also Figure 2.7) and further classifies countries on the basis of weather their Theil index followed a mostly linear (increasing/decreasing) or a non-linear trend (e.g. u-shape or inverted u-shape).

Table 2.3. A typology of regional income inequality trends based on GDP per capita at the TL3 level

Broad type	Detailed type	At/above mean OECD GDP per capita gap (period max; period min)	Converging to OECD GDP per capita (period max; period min)	Diverging from OECD GDP per capita (period max; period min)
Income inequalities mostly increasing over the period	Linear	Belgium (2003-05; 2000-02), Denmark (2015-18; 2000-02), France (2018-20; 2003-05), Sweden (2018-20; 2003-05), United Kingdom (2018-20; 2003-05)	Estonia (2015-17; 2006-08)	Italy (2018-20; 2006-08)
	Non-linear	Japan (2006-08; 2000-02), United States (2012-14; 2000-02)	Czech Republic (2018-20; 2000-02), Hungary (2009-11; 2000-02), Lithuania (2006-08; 2000-02), Poland (2015-17; 2000-02), Slovak Republic (2009-12; 2000-02), Slovenia (2009-11; 2000-02),	
Income inequalities mostly decreasing over the period	Linear	Finland (2000-02; 2018-20), Norway (2000-02; 2018-20)	Latvia (2003-05; 2009-11), Türkiye (2006-08; 2015-17)	Greece (2006-08; 2015-17), Portugal (2000-02; 2018-20)
	Non-linear	Austria (2006-08; 2018-20), Germany (2000-02; 2018-20), Netherlands (2000-02; 2018-20)	Korea (2009-12; 2018-20), New Zealand (2009-11; 2018-20)	Spain (2000-02; 2009-11)

Note: See Annex 2.B for details. Linear/non-linear trend determined based on the sign and statistical significance (95% confidence level) of the coefficients of a regression of the second-degree polynomial of the Theil index against time. Decreasing/increasing determined according to the sign of the compounded growth rate of the Theil index between 2000-02 and 2018-20. Converging countries had a 2000 GDP per capita gap below the mean gap across OECD countries and a smaller gap in 2020 (i.e. a larger country GDP per capita to OECD GDP per capita ratio). Diverging countries had a 2000 GDP per capita gap below the mean gap across countries and a larger gap in 2020 (i.e. a smaller country GDP per capita to OECD GDP per capita ratio). The gap is defined as each country's GDP per capita with respect to OECD GDP per capita. The mean gap is the mean value of gaps across OECD countries.
Source: Based on data from OECD (2022[33]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

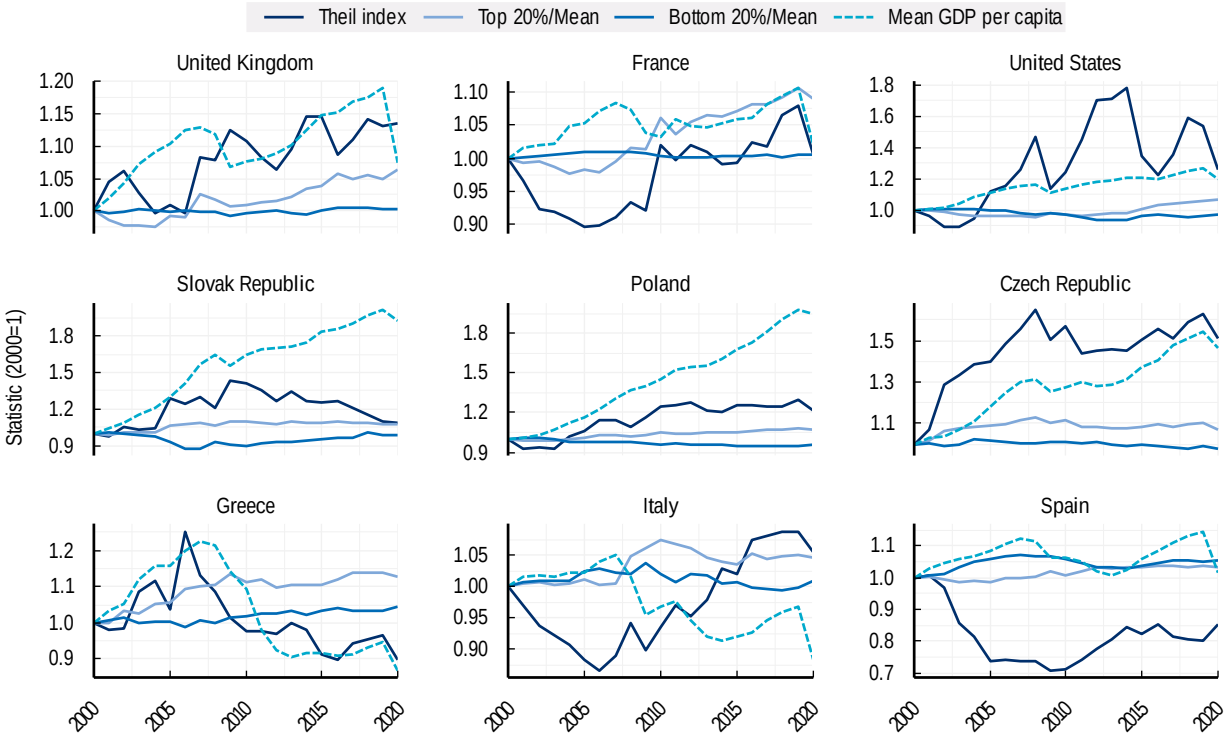
Table 2.3 reveals that beyond the general picture, there are different growth-inequality trajectories across OECD countries, confirming there is no single narrative on regional income inequalities (McCann, 2022[65]) (Figure 2.9). Rather, while most OECD countries that showed increasing inequality in the last two decades reached their minimum values of regional GDP per capita inequality before the GFC, they were then set on different trajectories.

- On the one hand, among OECD countries with income per capita above OECD levels, some such as France and the United Kingdom, experienced a sustained increase in regional inequality since the mid-2000s, while others, such as Germany and Portugal, saw sustained falls.
- On the other hand, virtually all countries converging towards OECD GDP per capita levels saw within-country inequalities rise over the period as a whole but in a non-linear fashion (mostly as an inverse U). In Poland for instance, inequality started picking up in 2004 and continued increasing until 2020. In Hungary and the Slovak Republic, inequalities also increased rapidly, albeit from relatively low levels, between 2003/04 and 2009, but unlike Poland, fell between 2010 and 2020. In the Czech Republic, Estonia and Lithuania, inequalities plateaued at relatively high levels after decreasing slightly from their peaks in the aftermath of the GFC in 2010.

In most countries, increasing regional inequality went hand in hand with bottom divergence and top concentration (and vice versa, decreasing inequality went hand in hand with bottom convergence and top deconcentration). The correlation between changes in the Theil index and the top-to-mean (bottom-to-mean) was above (below) 0.7 in 21 (22) countries out of 27 with available data. Exceptions include the Czech Republic, Norway and the United Kingdom, which all showed a weak correlation between inequality and bottom region trends but a strong correlation with respect to top concentration.

Figure 2.9. Trends in GDP per capita inequality indicators for selected countries, TL3 regions, 2000-20

Indexed to 2000 (2000=1)

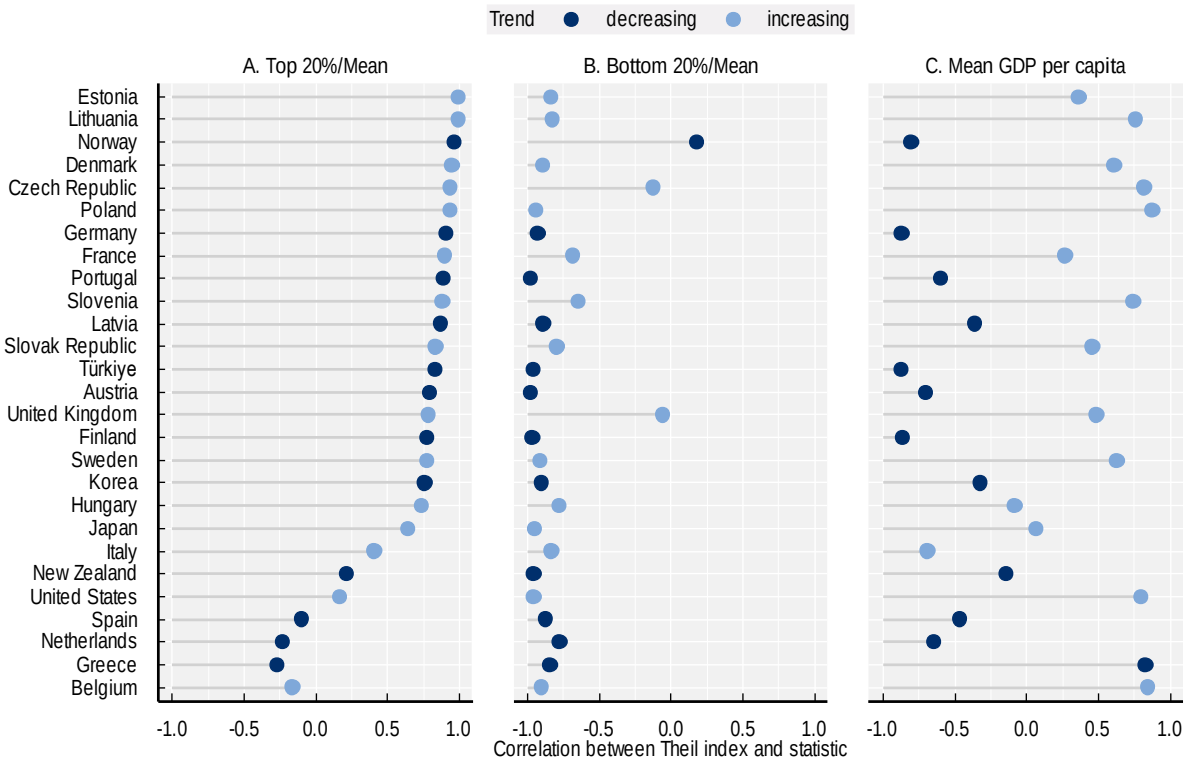


Source: OECD (2022[33]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

StatLink https://stat.link/60i258

Growth-inequality paths were counter-cyclical in most countries with declining regional inequality, and pro-cyclical in most countries with increasing regional inequality (Figure 2.10, Panel C). In some cases, including France, Italy and Spain, the pattern switched from counter-cyclical to pro-cyclical after the GFC, in line with findings that the GFC put a stop to regional convergence in these countries (Diemer et al., 2022[17]; OECD, 2020[16]). Greece is the only country with a pro-cyclical growth-inequality trend, as the Theil index closely followed the decreasing trend in GDP per capita in the last two decades.

Figure 2.10. Correlation between the Theil index of TL3 GDP per capita with top-to-mean and bottom-to-mean ratios and mean GDP per capita, 2000-20



Note: Increasing/decreasing trends follow classification in Table 2.3.
Top/bottom calculated as population equivalent (top/bottom regions with at least 20% of the population). The interpretation of top/bottom 20% GDP per capita is that 20% of the population in the country holds 20% of the value.
Source: OECD (2022[33]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

StatLink https://stat.link/pji2gq

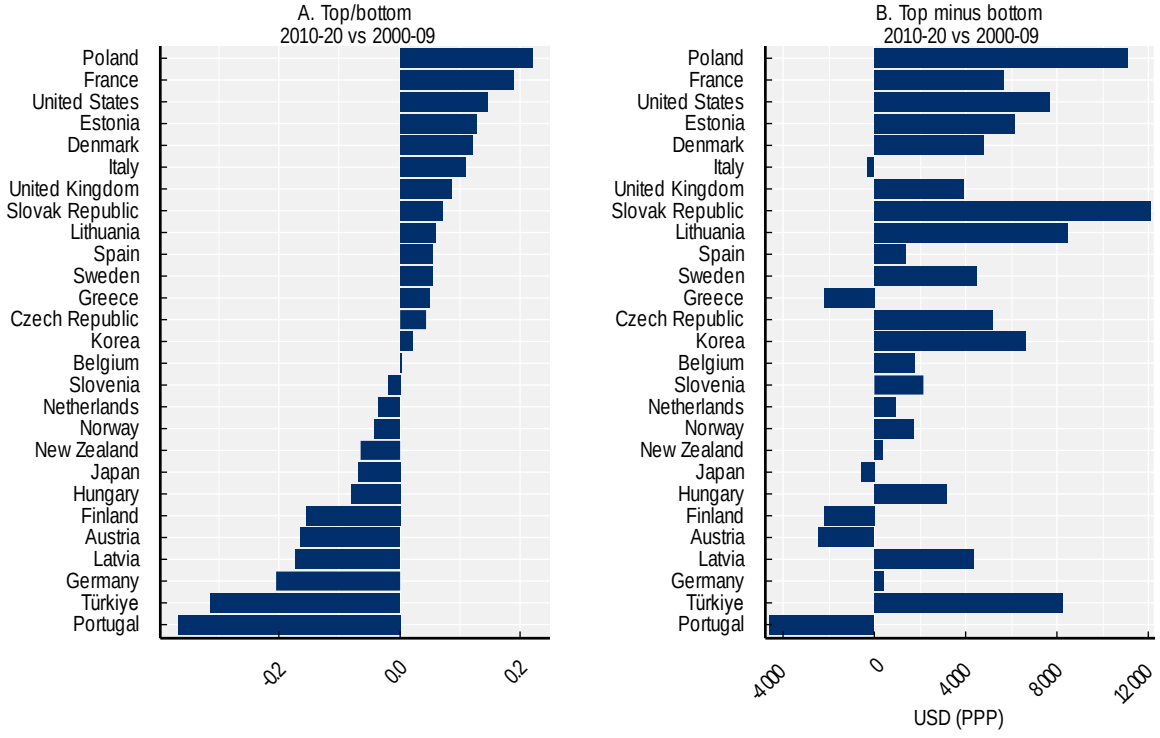
Gaps between top and bottom regions did not narrow in most OECD countries over the last two decades

Polarisation increased in 14 out of 27 OECD countries with available data. Despite decreases in the last two decades, the ratio of top to bottom region in 2020 was still the highest in Türkiye (3.2), followed by the Slovak Republic (2.9) and Poland (2.8).[7] Absolute gaps in top versus bottom region incomes however increased in the majority (21 out of 27) of OECD countries with available data in 2010-20 compared to 2000-09 (OECD, 2022[59]) (Figure 2.11, Panel B), including in countries such as Germany, Hungary, Latvia and Türkiye where the relative gaps decreased. Reducing polarisation in both relative and absolute terms requires necessarily that bottom regions grow faster than top regions. In the case of Latvia, for instance, bottom regions would have needed to grow twice as fast as they did between 2000 and 2020, just to maintain the same absolute gap over time.

The evidence on increasing polarisation at the small region level is consistent with findings for disposable income at the large region level. Disposable income and poverty rates differ substantially across OECD countries and within their large regions. In 2020, 11 out of 26 OECD countries with available data had regions with S80/S20 ratios above the OECD average, including most regions in Chile, Colombia, Mexico and the United States. Moreover, the average gap in poverty rates between the worst- and best-performing

regions in the same country was 18 percentage points, reaching 50 percentage points in Colombia and Mexico (OECD, 2022[36]).

Figure 2.11. Relative vs. absolute changes in polarisation based on real GDP per capita, TL3 OECD regions, 2000-20



Note: Top/bottom calculated as population equivalent (top/bottom regions with at least 20% of the population). The interpretation of top/bottom 20% GDP per capita is that 20% of the population in the country holds 20% of the value.
Source: OECD (2022[33]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

StatLink https://stat.link/qgrmf1

Differences in income per capita between metropolitan/top and other regions drive regional income inequalities in most OECD countries

Regional income inequalities have increased because metropolitan regions have continued to pull apart from other regions in a majority of countries. A decomposition of the Theil index of inequality can shed light on whether differences between metropolitan and other regions matter the most for regional income inequality and whether distance to cities has a role in explaining regional income inequalities (see Box 2.4, (Elbers et al., 2008[64]; Boulant, Brezzi and Veneri, 2016[66]). At the same time, polarisation and bottom divergence are linked to metropolitan versus non-metropolitan gaps because a significant share of top (bottom) regions are metropolitan (non-metropolitan). Proximity to large FUAs is also an important factor: for instance, in some countries all top regions are metropolitan large and in others all bottom regions are far from midsize/large cities (see Box 2.5 for more information on the overlap between top/bottom and metropolitan/non-metropolitan regions).

Box 2.4. A measure to compare the share of between-group inequality across countries

Evaluating observed between-group inequality against a benchmark of maximum between-group inequality

The standard Theil decomposition is sensitive to the number of groups considered. For instance, if one were to consider a split between two categories (e.g. metropolitan versus non-metropolitan), the share of between-group inequality would be very small. As this result is an artefact of the standard Theil decomposition, concluding from this that metropolitan/non-metropolitan differences matter little for regional inequality would be misleading.

Elbers et al. (2008[64]) have proposed a decomposition that normalises the Theil index by the observed number and relative size of observed groups. This decomposition is better suited for comparisons that involve different numbers of group and/or different group shares, so that:

$$Rb' = \frac{BGI}{maximum\ BGI} = Rb\frac{Total\ inequality}{Maximum\ BGI}$$

where BGI is Between-Group Inequality. This measure "replaces total inequality in the denominator of the conventional ratio with the maximum between-group inequality that could be obtained if the number of groups and their sizes were restricted to be the same as for the numerator".

Notes: In the calculations, Rb' is obtained using the *decompGEI* function of the R package IC2, available at: https://www.rdocumentation.org/packages/IC2/versions/1.0-1/topics/decompGEI.

The decomposition measures the share of inequality explained by differences between groups of regions. As these shares are sensitive to the number of regions in each country, country values are expressed as a ratio of OECD-wide shares. Table 2.4 classifies countries according to the maximum relative share among three possible groupings (see Annex Table 2.B.2 for full results): i) large metropolitan regions versus other regions; ii) metropolitan versus non-metropolitan regions; and iii) regions far from a midsize/large FUA versus other regions. The table also distinguishes between countries where all (large) metropolitan regions are top regions.

Table 2.4. Contribution of TL3 region types to regional income inequality, based on 2010-20 averages

Large metropolitan/top vs. the rest	Large metropolitan vs. the rest	Metropolitan/top vs. the rest	Metropolitan vs. the rest	Far from a FUA>250K vs. the rest
Czech Republic	Korea	Belgium	Germany	Austria
Denmark	Poland	Estonia	Japan	Greece
France	Türkiye	Finland	New Zealand	Italy
Hungary	United Kingdom	Latvia	Slovenia	
Portugal	United States	Lithuania		
Sweden		Netherlands		
		Norway		
		Slovak Republic		
		Spain		

Note: Countries with increasing inequality are listed in bold.
Countries selected based on the largest 2010-20 average share of between-group inequality relative to OECD values. See Annex Table 2.B.1 for full results. Far from an FUA>250K includes regions near/with a small FUA and remote regions. Top/bottom calculated as population equivalent (top/bottom regions with at least 20% of the population). The interpretation of top/bottom 20% GDP per capita is that 20% of the population in the country holds 20% of the value.
Source: Based on OECD (2022[33]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

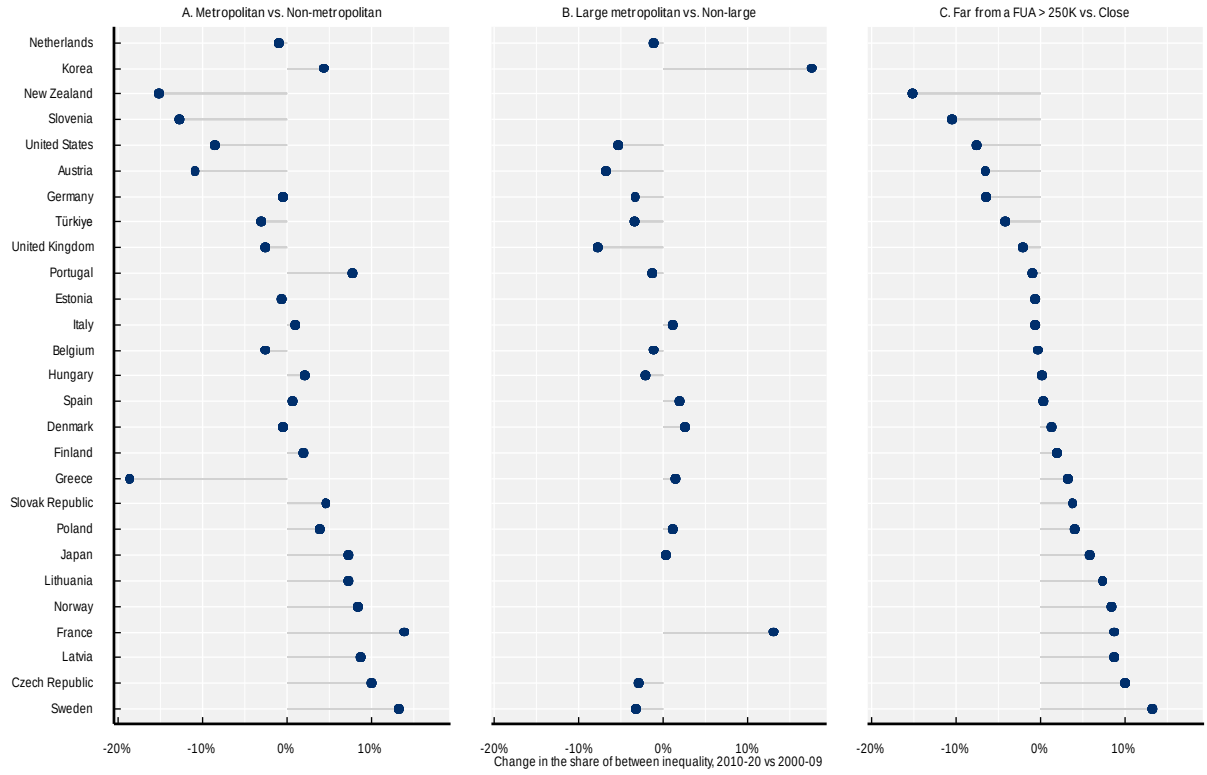
Concerning metropolitan versus non-metropolitan differences, the size of cities and distance to a city matter to different degrees across countries, leading to different patterns:

- The relative differences in the income per capita group of large metropolitan regions and others with respect to OECD levels explain the largest share of regional income inequality in 11 out of 19 countries with large metropolitan regions (8 of which have increasing inequality). In six of these countries, all top regions are also large metropolitan regions.
- The relative differences in income per capita in the broader group of metropolitan versus non-metropolitan regions mattered the most in 13 out of 27 countries with available data. This included five countries with large metropolitan regions (two of which had increasing inequality) and all eight countries with no large metropolitan regions.
- Finally, relative differences between regions far from a midsize/large FUA and other regions mattered the most in the three countries (with Italy being the only country in the group with increasing inequality).

Furthermore, comparing changes between 2000-09 and 2010-20 reveals that:

- The share of inequality explained by differences between metropolitan and non-metropolitan regions increased in 13 out of 27 OECD countries with available data, 7 of which had increasing inequality (the Czech Republic, France, Hungary, Japan, Latvia, Poland, the Slovak Republic and Sweden) (Figure 2.12). This share did not necessarily increase in all countries where income inequality increased: in 8 countries with increasing inequality, including the United Kingdom and the United States, this share was smaller in 2010-20 compared to 2000-09.
- The share of inequality explained by differences between large metropolitan and other regions increased in 8 out of 19 OECD countries with large metropolitan regions. This included three countries with increasing inequality where the other shares considered did not increase (Denmark, Italy and the United Kingdom).
- The importance of differences between regions far from cities and others increased in ten OECD countries, six of which had increasing inequalities.

Figure 2.12. Changes in the contribution of region types to regional income inequality based on TL3 GDP per capita, 2000-20



Source: Based on OECD (2022[33]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

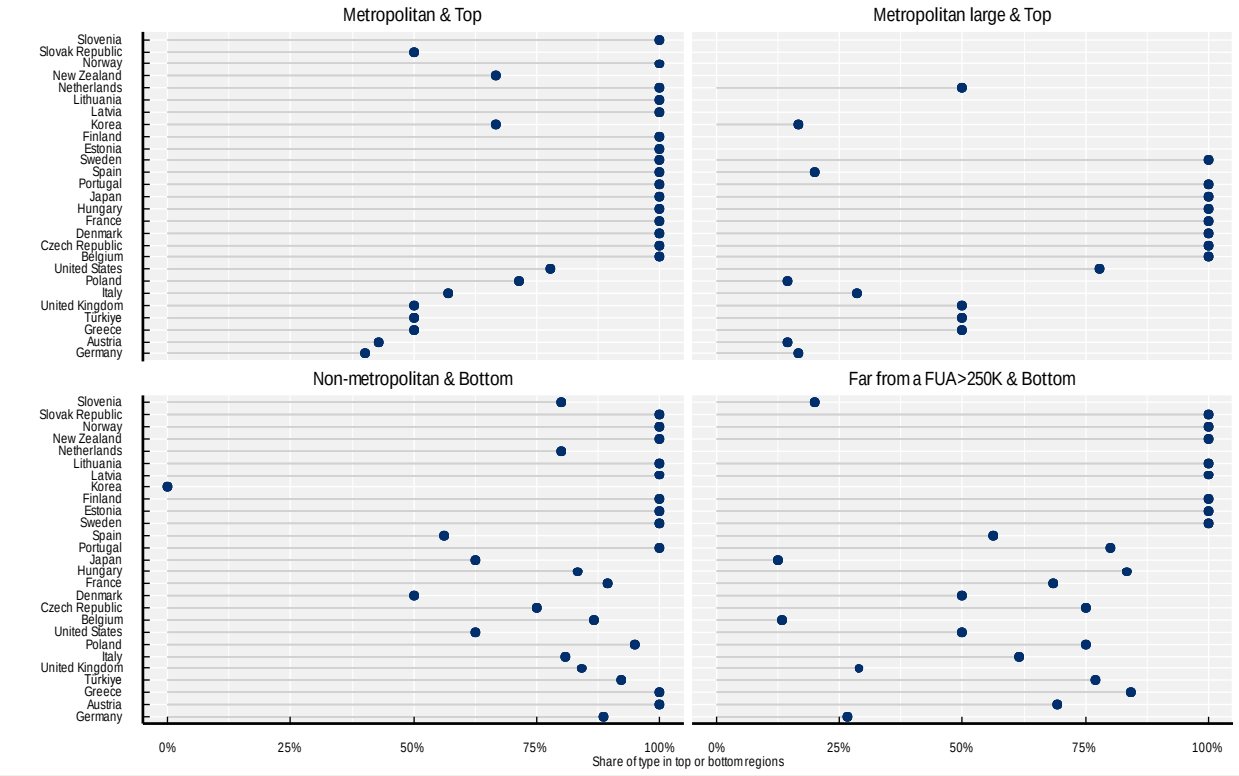
StatLink https://stat.link/utvgco

Box 2.5. Overlap between top/bottom and metropolitan/non-metropolitan regions

Regions can be classified according to the Access to Cities typology (see Annex 2.A) or as top or bottom regions. In seven countries (Estonia, Finland, Latvia, Lithuania, Norway, Portugal and Sweden), all top regions are metropolitan and all bottom regions are non-metropolitan. In all of these countries except for Portugal, all bottom regions are far from a midsize/large FUA.[8] In four countries, all bottom regions are non-metropolitan (Austria, Greece, New Zealand and the Slovak Republic). In New Zealand and the Slovak Republic, all bottom regions are far from a midsize/large FUA.

The match between metropolitan and top regions on the one hand and non-metropolitan and bottom regions on the other is substantial but not perfect. In nine countries (Belgium, the Czech Republic, Denmark, France, Hungary, Japan, the Netherlands, Slovenia and Spain), all top regions are metropolitan but not all bottom regions are non-metropolitan. In six of these countries (Belgium, the Czech Republic, Denmark, France, Hungary and Japan), all top regions are large metropolitan. Finally, in 5 countries, the overlap between non-metropolitan and bottom regions is larger than the overlap between metropolitan top and top regions: Germany (38% vs. 89%), United Kingdom (80% vs. 50%), Italy (81% vs. 57%), Poland (95% vs. 71%) and Türkiye (92% vs. 50%). In two countries, the opposite is true (United States [78% vs. 63%] and Korea [66% vs. 0%]).

Figure 2.13. Share of top/bottom regions by region type, based on 2020 values for top/bottom regions



Note: Top/bottom calculated as population equivalent (top/bottom regions with at least 20% of the population). The interpretation of top/bottom 20% GDP per capita is that 20% of the population in the country holds 20% of the value.
Source: OECD (2022[33]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

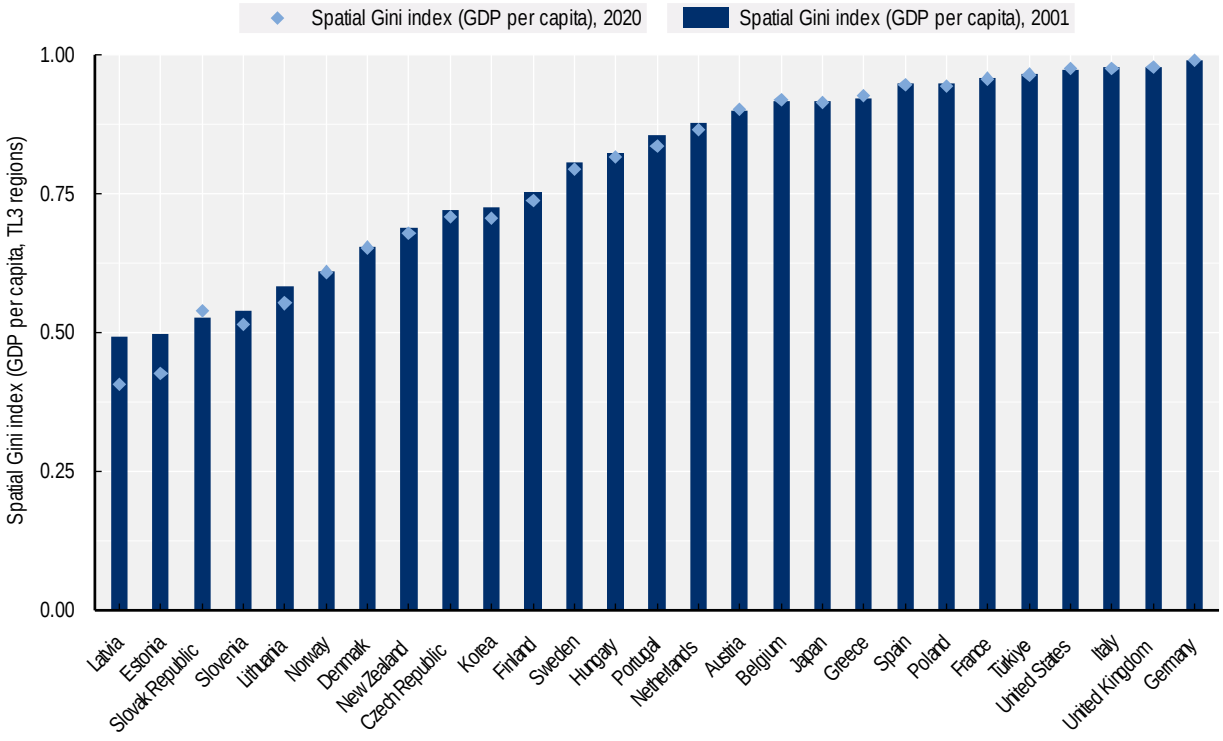
StatLink https://stat.link/3cxbvy

Differences between clusters of high- and low-income regions drive regional inequalities in many countries

The measures of regional inequality used thus far do not consider the geographical aspect of regions, that is, the fact that regions with similar characteristics may be close or distant to each other (Rey, Arribas-Bel and Wolf, 2020[62]). The spatial Gini index disentangles the effect of proximate versus distant regions in the Gini index (Rey and Smith, 2012[67]). When spatial dependence is high and positive (similar regions show a strong tendency to cluster), differences with distant regions drive inequality, as values are similar among neighbours.

The spatial Gini index for GDP per capita shows that differences across distant regions drive virtually all the variation in regional inequality in large OECD countries including France, Germany and the United States and in countries with high regional divides such as Italy (Figure 2.14). In contrast, in small countries where a large share of inequality is due to concentration in the capital city, there is no evident clustering of regions with high or low income per capita but rather an “oasis” of prosperity.

Figure 2.14. Spatial Gini index of GDP per capita at the TL3 level, OECD countries, 2021



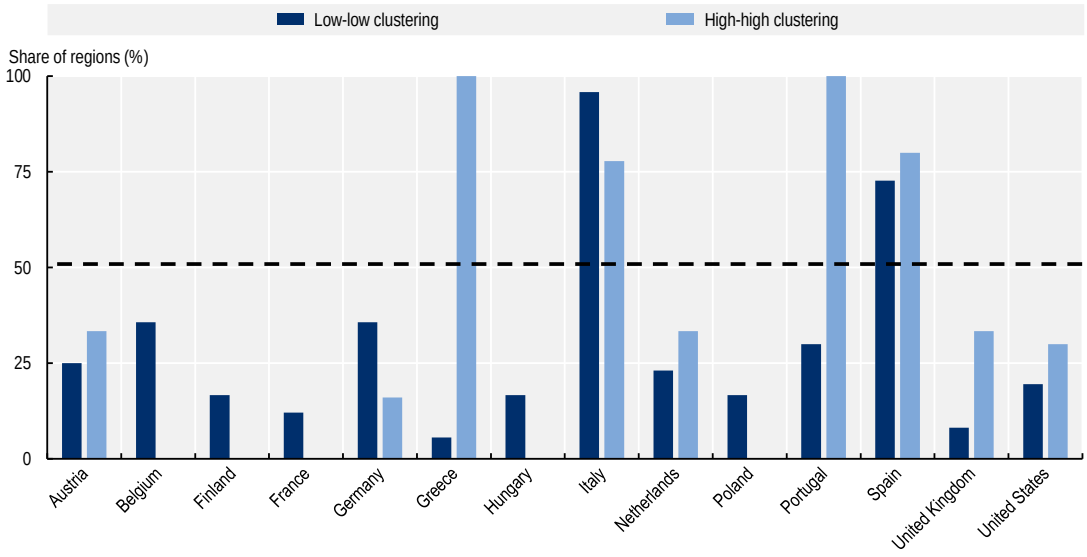
Note: The index measures the share of inequality due to differences between proximate and distant regions.
GDP per capita data are not aggregated by metropolitan regions sharing the same FUA (see Annex 2.A for details). The spatial Gini is equal to the neighbour composition of the Gini coefficient times one over the Gini coefficient (Parry, 2022[68]). The spatial Gini considers the role of proximity in the concentration of a given variable. It decomposes the Gini index into two components: one among neighbours (i.e. nearby observations) and another among non-neighbours (i.e. distant observations). 2018 population for Japan.
Source: OECD (2022[33]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

StatLink https://stat.link/i4v3s7

The existence of localised productivity spillovers tends to translate into a certain degree of similarity in terms of income and prosperity between neighbouring regions. Spatial clustering by income can result in persistent regional income dynamics and the emergence of a two-tier system of regions, with rich regions clustered with other rich regions ("high-high" clustering) and poor ones clustered with other poor ones ("low-low" clustering), unable to learn from "productive neighbours" and stuck into regional development traps (Iammarino, Rodríguez-Pose and Storper, 2019[69]).

"Low-low" clustering appears to be more widespread than "high-high" clustering, except for Southern European countries, where more than half of high-income regions appear to be spatially clustered among regions with a similar level of income (Figure 2.15) (see Box 2.6 for a description of how spatial clustering is measured).[9] Furthermore, Italy and Spain also record the highest degree of "low-low" income clustering among the countries considered, with three in every four low-income regions spatially clustered around regions with a similar level of income.

Figure 2.15. Incidence of spatial clustering across OECD countries



Note: The incidence of low-low spatial clustering is equal to the share of the bottom 20% of regions featuring statistically significant positive spatial clustering (i.e. spatially clustered among other low GDP per capita regions); the incidence of high-high spatial clustering is equal to the share of top 20% regions featuring statistically significant positive spatial clustering (i.e. spatially clustered among other high GDP per capita regions). Data refer to 2019. Only countries with at least 15 TL3 regions are represented.
Source: OECD (2022[33]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

StatLink https://stat.link/716zna

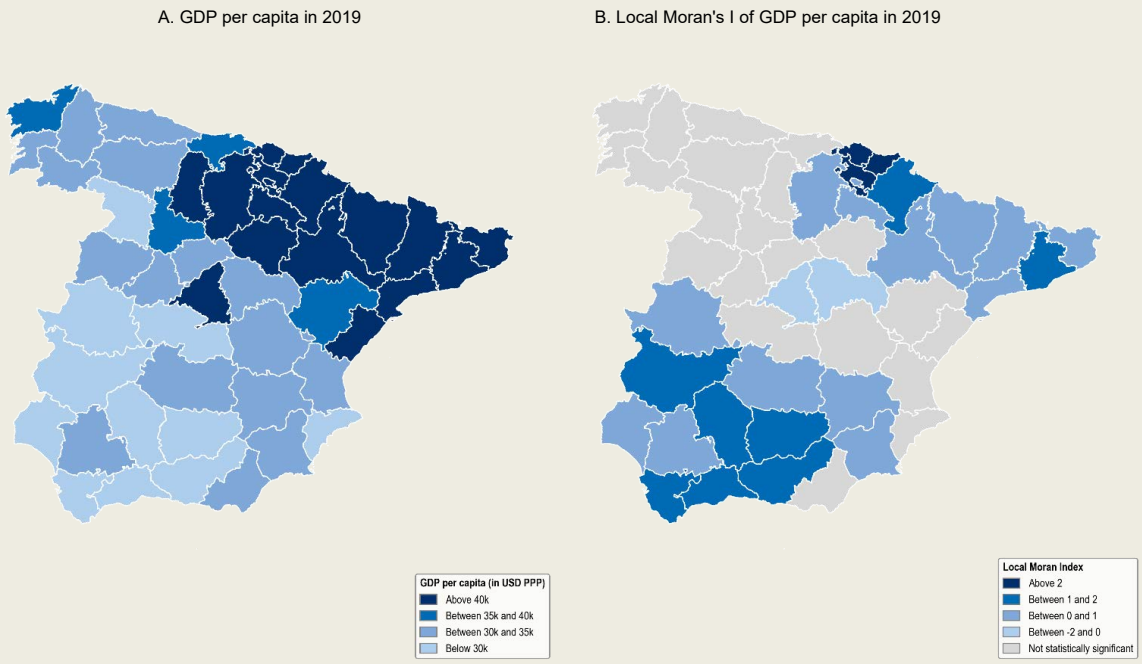
Box 2.6. Measuring the degree of (dis)similarity among neighbouring regions

The degree of similarity of a given region with its neighbours can be measured by the Local Moran's I:

$$Local\ Moran's\ I = (y_i - \bar{y}) \sum_j (y_j - \bar{\bar{y}})$$

where y_i is a socio-economic indicator for region i, for instance, regional GDP per capita. The Local Moran's I can take positive, negative or zero values: positive values indicate that a given region is similar in terms of a pre-specified economic indicator to its neighbours; negative values indicate that it tends to be different from its neighbours; while a zero value means that there is no correlation with neighbours' socio-economic conditions. The Local Moran's I might not be sufficiently precisely estimated, in which case the data are said to rule against the existence of spatial similarity/dissimilarity among contiguous regions. If the Local Moran's I is sufficiently precisely estimated and takes on a positive value, the region is said to be clustered around regions with a similar level of income.

Figure 2.16. Measuring the degree (dis)similarity among neighbouring regions: An example based on GDP per capita in Spanish TL3 regions



Note: The Local Moran's I is considered statistically significant when its p-values are below 20%.
Source: OECD (2022[33]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

Figure 2.16 provides a working example of how the measurement of spatial clustering works in practice based on the level of GDP per capita registered in Spanish TL3 regions in 2019. The left panel shows GDP per capita levels, while the right panel shows the value for the estimated Local Moran's I, whenever statistically significant. A few things merit attention. First, the Local Moran's I is not always statistically significant. Second, when a given region is surrounded by a set of regions with a level of GDP per capita very different from its own, the Local Moran's I takes on negative values (e.g. the Comunidad de Madrid or the region of Guadalajara in the central part of Spain). This is a situation opposite to the one of spatial clustering, also labelled a "checkerboard pattern". Third, the vast majority of regions such that the Local Moran's I is sufficiently precisely estimated feature spatial clustering. Fourth, in the case of Spain, the degree of spatial clustering among regions with low GDP per capita (i.e. in the south of Spain) is higher than among regions with high GDP per capita (i.e. the northwest part of the country).

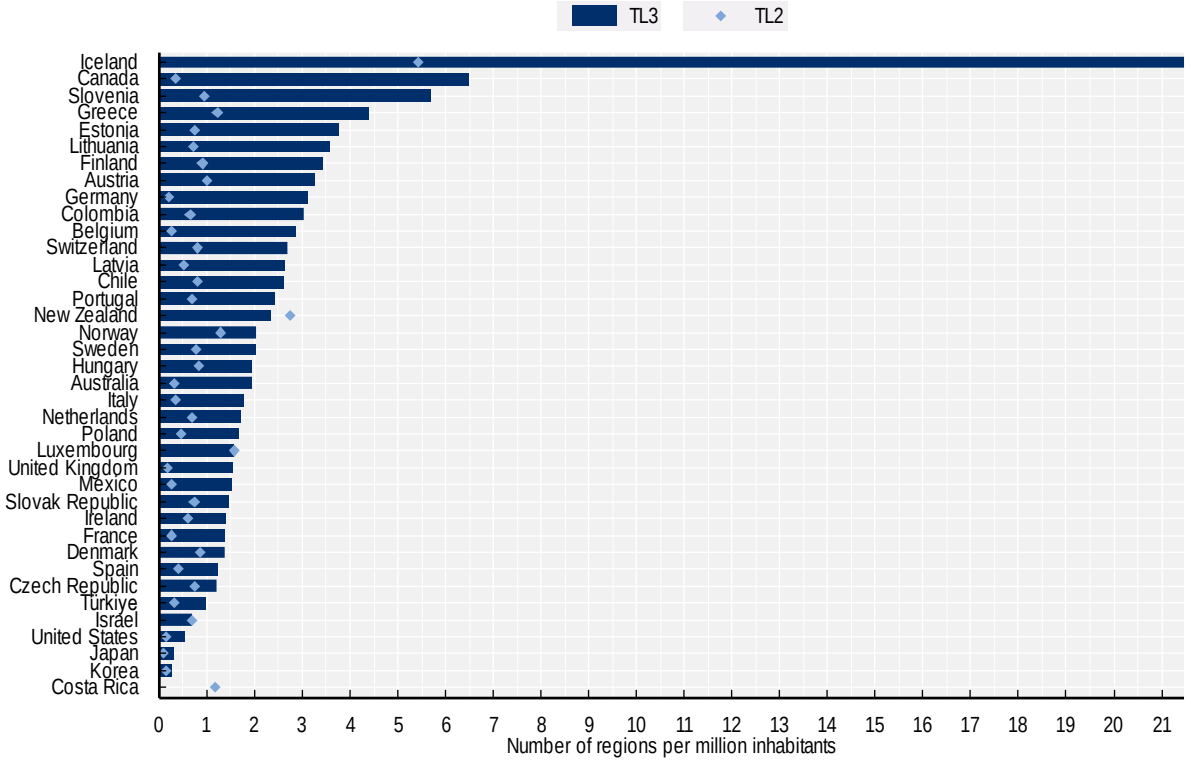
Annex 2.A. OECD regional data and methodological notes

OECD territorial definitions and administrative fragmentation

Regions are subnational units below national boundaries. OECD countries have two regional levels: large (TL2) regions and small (TL3) regions. Regional boundaries correspond to administrative divisions defined autonomously by countries using different criteria. Except for the United States, small regions are nested within large regions. However, in Estonia, Latvia and Luxembourg, TL2 borders correspond to national borders, and in Israel and New Zealand, TL2 and TL3 borders are the same. Below small regions, countries define local units such as municipalities, which are usually nested within small regional boundaries. Regional boundaries, especially those at lower scales, may be subject to changes across time as regions merge and split following demographic and political changes.

The comparison of inequality levels and rankings between territorial levels is not meaningful because the way information is scaled down varies across countries.[10] The level of administrative fragmentation – that is, how national territories are split by administrative units – varies across OECD countries, especially at the TL3 level. At the TL2 level, the number of TL2 regions per 1 million inhabitants varies from 0.08 in Japan to 5.4 in Iceland. At the TL3 level, it varies from 0.33 in Korea to almost 8 regions per 1 million inhabitants in Canada (that is, 293 regions in approximately 38 million people).

Annex Figure 2.A.1. Number of TL2 and TL3 regions per million inhabitants, 2021



Source: OECD (2022[33]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

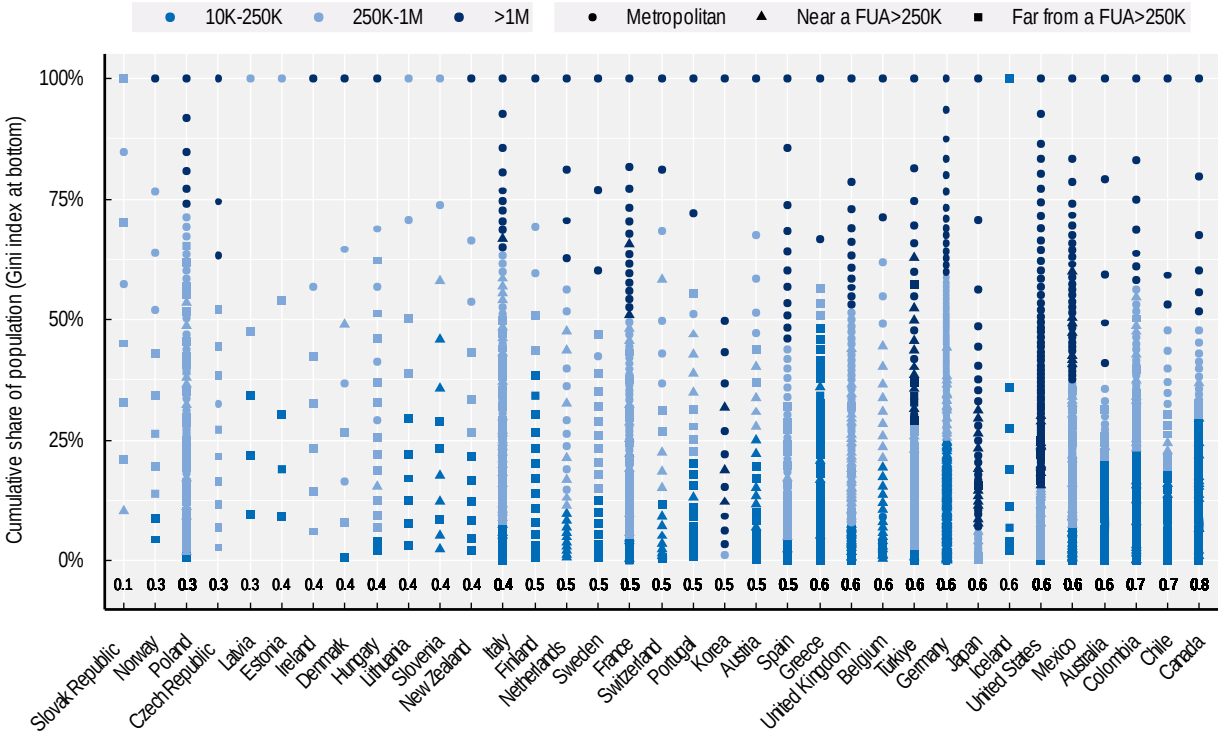
StatLink https://stat.link/o3ts0v

The distribution of population across regions in OECD countries is uneven. Highly urbanised countries such as the United States and sparsely populated countries such as Australia and Spain show more disparity in the distribution of population across regions. Australia has the most unequal distribution of population across small regions, as just 5 of its 51 regions account for 60% of the national population). In contrast, the populations of East European countries, Israel and the United Kingdom are more evenly distributed.

Population concentration is not always associated with large population sizes. Large and highly urbanised countries such as Japan and the United States have numerous regions with at least 1 million inhabitants and many metropolitan (large) regions (Annex Figure 2.A.2). Furthermore, countries may have similar population levels but different concentration levels. For instance, France and the United Kingdom have similar population levels but population and employment in the United Kingdom are less concentrated. The United Kingdom also has only a few small regions with over 1 million inhabitants while France has many. Though surprising when considering both countries have similar sizes, the United Kingdom has higher administrative fragmentation (see Annex Figure 2.A.1). For instance, 21 different small regions make up Greater London while only 8 make up Île-de-France. For this reason, the data in this chapter aggregate values for TL3 regions that are part of the same FUA (i.e. where 50% of the regional population lives in a FUA).

Annex Figure 2.A.2. The cumulative share of population by TL3 regions, OECD countries, 2021

Countries ranked by Gini index of inequality in population distribution



Note: Excludes countries with no more than one region (Luxembourg).
Source: OECD (2022[33]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

StatLink https://stat.link/mkb7s3

The concentration of population in some countries depends on the territorial scale used. This is due to a combination of larger sparsity and the relative level of administrative fragmentation). For instance, the Gini index for the population in Denmark and Finland, 2 countries with similar population sizes, is 0.2 and 0.3 for large regions. For small regions, the Gini index is still 0.2 for Denmark (1 out of the 11 regions concentrates 15% of the population) but raises to 0.5 in Finland (1 out of the 19 regions concentrates 30% of the population) (Annex Figure 2.A.2). Higher sparsity in Finland, as well as different levels of administrative fragmentation, explain these differences. As disentangling these effects is not possible, this chapter does not make direct comparisons of inequality indicators between small and large regions.

The Access to City typology

Traditional measures of inequality such as the Theil and Gini indices do not consider the location of regions and fail to acknowledge that economic activity and people tend to cluster in space (Rey, Arribas-Bel and Wolf, 2020[62]). The OECD has developed the concept of functional urban areas – composed of urban centres and their commuting areas – to overcome these limitations. At the regional level, the OECD Access to Cities typology offers a way to overcome the issue of administrative fragmentation and lack of consideration for proximity (Fadic et al., 2019[70]).

The typology classifies small (TL3) regions into metropolitan and non-metropolitan regions according to the following criteria:

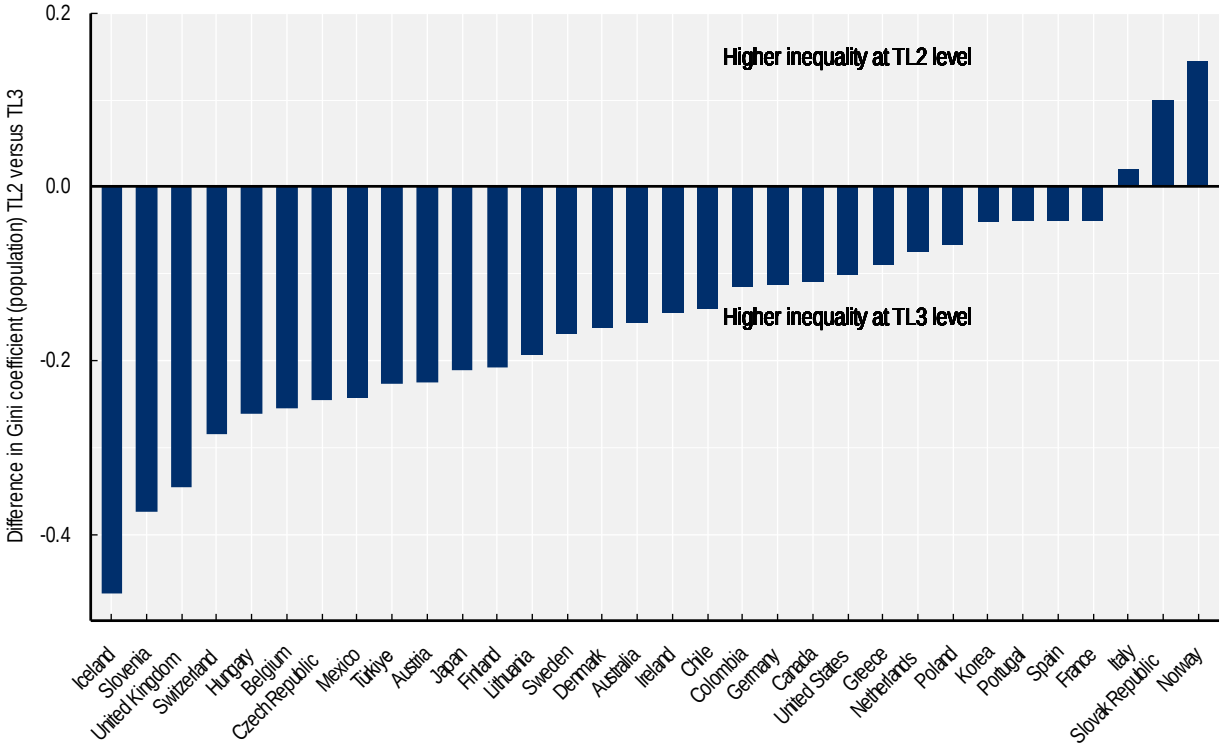
- **Metropolitan regions**, if more than half of the population live in a FUA. Metropolitan regions are further classified into: **metropolitan large**, if more than half of the population live in a (large) FUA of at least 1.5 million inhabitants; and **metropolitan midsize**, if more than half of the population live in a (midsize) FUA of at 250 000 to 1.5 million inhabitants.
- **Non-metropolitan regions**, if less than half of the population live in a midsize/large FUA. These regions are further classified according to their level of access to FUAs of different sizes: **near a midsize/large FUA** if more than half of the population live within a 60-minute drive from a midsize/large FUA (of more than 250 000 inhabitants) or if the TL3 region contains more than 80% of the area of a midsize/large FUA; **near a small FUA** if the region does not have access to a midsize/large FUA and at least half of its population have access to a small FUA (i.e. between 50 000 and 250 000 inhabitants) within a 60-minute drive, or contains 80% of the area of a small FUA; and **remote**, otherwise.

How territorial units affect the measuring of inequality

Inequality measures are sensitive to the grouping of observations in bins. For instance, measures of inter-personal inequality use income-range bins, which vary in the number of income groups available and censoring of the highest categories. The spatial counterpart of income bins are spatial units, implying that inequality indices will depend on the geographical scale of analysis. The implicit assumption, in this case, is that income in a region is equally distributed across the population in that region (Rey, Arribas-Bel and Wolf, 2020[62]).

The direction of the change in inequality when switching from a larger (TL2) to a smaller scale depends not only on the relative fragmentation at lower levels but also on the distribution of the population. For instance, consider a country with 2 TL2 regions, one with 125 people, 100 of which live in a city and another one with 42 people, 40 of which live in a city. Splitting both TL2 regions into 4 TL3 regions, 2 of them containing the 2 cities, leads to smaller inequality levels at the TL3 level, as the largest region contribution to population goes down from 75% (125/167) to 60% (100/167). Across OECD countries, switching from the TL2 to the TL3 level leads to higher, similar and lower levels of inequality in the distribution of the population (Annex Figure 2.A.3).

Annex Figure 2.A.3. Difference in Gini coefficient of population distribution between TL2 and TL3 levels, based on 2021 population values



Note: Estonia, Israel, Latvia, Luxembourg and New Zealand are not included as TL2 and TL3 levels coincide. No TL3 data are available for Costa Rica.

Source: OECD (2022[33]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

StatLink https://stat.link/u2904s

Annex 2.B. Summary tables

Annex Table 2.B.1. Summary GDP per capita regional (TL3) inequality measures by country, 2000-20

	Theil index		Top/bottom		Top/mean		Bottom/mean	
	2000-09	2010-20	2000-09	2010-20	2000-09	2010-20	2000-09	2010-20
	Mostly increasing inequality (linear)							
Belgium	0.03	0.03	2.03	2.03	1.58	1.56	0.78	0.77
Denmark	0.01	0.02	1.56	1.68	1.32	1.39	0.85	0.82
Estonia	0.07	0.08	2.36	2.48	1.78	1.83	0.76	0.74
France	0.02	0.02	2.27	2.46	1.93	2.08	0.85	0.84
United Kingdom	0.03	0.03	2.14	2.23	1.71	1.78	0.80	0.80
Sweden	0.01	0.01	1.73	1.79	1.58	1.60	0.91	0.90
	Mostly increasing inequality (non-linear)							
Czech Republic	0.02	0.02	2.05	2.10	1.77	1.79	0.86	0.85
Hungary	0.04	0.05	2.72	2.66	1.99	1.96	0.73	0.74
Italy	0.03	0.04	2.32	2.43	1.56	1.62	0.67	0.67
Japan	0.01	0.01	1.53	1.47	1.36	1.30	0.89	0.89
Lithuania	0.04	0.05	2.25	2.32	1.71	1.77	0.76	0.76
Poland	0.04	0.05	2.50	2.72	1.89	1.98	0.76	0.73
Slovak Republic	0.11	0.11	2.90	3.01	1.75	1.83	0.61	0.61
Slovenia	0.02	0.03	1.98	1.97	1.62	1.63	0.82	0.83
United States	0.02	0.03	1.76	1.90	1.50	1.56	0.85	0.82
	Mostly decreasing inequality (linear)							
Finland	0.02	0.01	1.83	1.67	1.53	1.47	0.84	0.88
Greece	0.03	0.03	1.99	2.04	1.56	1.65	0.79	0.81
Latvia	0.07	0.06	2.64	2.44	1.74	1.72	0.66	0.71
Norway	0.04	0.03	1.94	1.90	1.59	1.54	0.82	0.81
Portugal	0.03	0.02	2.24	1.88	1.70	1.54	0.76	0.82
Türkiye	0.07	0.06	3.68	3.36	2.26	2.16	0.61	0.64
	Mostly decreasing inequality (non-linear)							
Austria	0.02	0.02	1.74	1.57	1.36	1.26	0.78	0.80
Germany	0.04	0.04	2.25	2.05	1.67	1.57	0.74	0.77
Spain	0.02	0.02	1.79	1.84	1.41	1.45	0.79	0.79
Korea	0.06	0.05	1.81	1.85	1.29	1.30	0.71	0.70
Netherlands	0.02	0.02	1.72	1.68	1.43	1.43	0.83	0.85
New Zealand	0.02	0.02	1.58	1.52	1.29	1.24	0.82	0.82

Note: Countries with GDP per capita above OECD levels in 2000 and 2020 are listed in bold.
Top/bottom calculated as population equivalent (top/bottom regions with at least 20% of the population). The interpretation of top/bottom 20% GDP per capita is that 20% of the population in the country holds 20% of the value.
Source: OECD (2022[33]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

Annex Table 2.B.2. Summary table of the share of between-group inequality across TL3 region types, 2000-20

	Large metropolitan vs. the rest		Metropolitan vs. the rest		Far from a FUA>250K vs. the rest	
	2000-09	2010-20	2000-09	2010-20	2000-09	2010-20
	Large metropolitan/Top vs. the rest					
Czech Republic	3.64	2.75	0.80	0.80	0.69	0.75
Denmark	2.01	1.85	1.26	1.14	1.10	1.00
France	1.04	1.04	0.87	0.90	0.73	0.74
Hungary	1.94	1.45	1.31	1.21	1.10	1.06
Korea	1.67	1.49	1.20	1.14		
Poland	1.63	1.25	1.14	1.08	0.83	0.86
Portugal	1.24	1.01	0.94	0.92	0.96	0.94
Sweden	3.06	2.15	1.01	1.04	0.87	0.97
Türkiye	1.46	1.19	1.04	0.91	1.08	1.01
United Kingdom	1.79	1.52	1.27	1.13	0.55	0.52
United States	2.18	1.71	1.20	0.99	0.95	0.86
	Metropolitan/Top vs. the rest					
Belgium	0.59	0.40	0.99	0.88	0.31	0.33
Estonia			1.90	1.71	1.64	1.60
Finland			1.19	1.11	1.03	1.03
Latvia			1.60	1.59	1.39	1.48
Lithuania			1.24	1.21	1.07	1.13
Norway			0.94	0.93	0.82	0.87
Slovak Republic			1.26	1.20	0.80	0.79
Spain	1.18	1.11	1.41	1.29	1.20	1.16
Netherlands	1.33	1.06	1.19	1.07		
	Metropolitan vs. the rest					
Germany	0.99	0.93	1.22	1.11	0.63	0.55
Japan	1.54	1.10	1.21	1.18	0.38	0.34
New Zealand			1.46	1.13	1.26	1.05
Slovenia			1.21	0.96	0.99	0.85
	Far from a FUA>250K vs. the rest					
Austria	0.49	0.43	0.77	0.62	1.37	1.27
Greece	1.11	0.61	0.79	0.58	1.04	1.11
Italy	0.65	0.63	0.88	0.81	1.15	1.12

Note: Values relative to the OECD mean. Countries with increasing inequalities are listed in bold. Regions with null values do not have regions of the corresponding type.
Source: OECD (2022[33]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

References

Ahlfeldt, G. and E. Pietrostefani (2019), "The economic effects of density: A synthesis", *Journal of Urban Economics*, Vol. 111, pp. 93-107, https://doi.org/10.1016/j.jue.2019.04.006. [22]

Autor, D., D. Dorn and G. Hanson (2013), "The geography of trade and technology shocks in the United States", *American Economic Review*, Vol. 103/3, pp. 220-225, https://doi.org/10.1257/aer.103.3.220. [18]

Balestra, C. and R. Tonkin (2018), "Inequalities in household wealth across OECD countries: Evidence from the OECD Wealth Distribution Database", *OECD Statistics Working Papers*, No. 2018/01, OECD Publishing, Paris, https://doi.org/10.1787/7e1bf673-en. [71]

Boulant, J., M. Brezzi and P. Veneri (2016), "Income Levels And Inequality in Metropolitan Areas: A Comparative Approach in OECD Countries", *OECD Regional Development Working Papers*, No. 2016/6, OECD Publishing, Paris, https://doi.org/10.1787/5jlwj02zz4mr-en. [66]

Combes, P. et al. (2011), "The rise and fall of spatial inequalities in France: A long-run perspective", *Explorations in Economic History*, Vol. 48/2, pp. 243-271, https://doi.org/10.1016/j.eeh.2010.12.004. [4]

Diemer, A. et al. (2022), "The regional development trap in Europe", *Economic Geography*, pp. 1-23, https://doi.org/10.1080/00130095.2022.2080655. [17]

Dijkstra, L., E. Garcilazo and P. McCann (2013), "The economic performance of European cities and city regions: Myths and realities", *European Planning Studies*, Vol. 21/3, pp. 334-354, https://doi.org/10.1080/09654313.2012.716245. [21]

Dijkstra, L., H. Poelman and A. Rodríguez-Pose (2019), "The geography of EU discontent", *Regional Studies*, Vol. 54/6, pp. 737-753, https://doi.org/10.1080/00343404.2019.1654603. [12]

EC (2022), *Cohesion in Europe towards 2050: Eighth Report on Economic, Social and Territorial Cohesion*, European Commission. [15]

Elbers, C. et al. (2008), *Re-Interpreting between-group inequality*, pp. 231-245, https://link.springer.com/article/10.1007/s10888-007-9064-x. [64]

Eurostat (2022), *European Union Labour Force Survey*, https://ec.europa.eu/eurostat/web/microdata/european-union-labour-force-survey. [39]

Fadic, M. et al. (2019), "Classifying small (TL3) regions based on metropolitan population, low density and remoteness", *OECD Regional Development Working Papers*, No. 2019/06, OECD Publishing, Paris, https://doi.org/10.1787/b902cc00-en. [70]

Faggian, A. and A. Ascani (2021), "Productivity and resilience. A post-COVID-19 perspective", OECD-EC high-level expert workshop series Productivity Policy for Places, OECD, Paris, https://www.oecd.org/regional/W5-S1-Alessandra-Faggian-Andrea-Ascani.pdf (accessed on 31 January 2022). [60]

Garcilazo, E., A. Moreno-Monroy and J. Oliveira Martins (2021), "Regional inequalities and contributions to aggregate growth in the 2000s: An EU vs US comparison based on functional regions", *Oxford Review of Economic Policy*, Vol. 37/1, pp. 70-96, https://doi.org/10.1093/oxrep/graa064. [58]

Glaeser, E. and J. Gottlieb (2009), "The wealth of cities: Agglomeration economies and spatial equilibrium in the United States", *Journal of Economic Literature*, Vol. 47/4, pp. 983-1028, https://doi.org/10.1257/jel.47.4.983. [3]

Gluschenko, K. (2017), "Measuring regional inequality: To weight or not to weight?", *Spatial Economic Analysis*, Vol. 13/1, pp. 36-59, https://doi.org/10.1080/17421772.2017.1343491. [61]

Hanushek, E. and L. Woessmann (2020), "The economic impacts of learning losses", OECD, Paris, https://www.oecd.org/education/The-economic-impacts-of-coronavirus-covid-19-learning-losses.pdf. [10]

Hirschman, A. and M. Rothschild (1973), "The changing tolerance for income inequality in the course of economic development", *The Quarterly Journal of Economics*, Vol. 87/4, pp. 544-566, https://www.jstor.org/stable/1882024#metadata_info_tab_contents. [1]

Hsia, R. et al. (2012), "Is emergency department closure resulting in increased distance to the nearest emergency department associated with increased inpatient mortality?", *Annals of Emergency Medicine*, Vol. 60/6, pp. 707-715.e4, https://doi.org/10.1016/j.annemergmed.2012.08.025. [49]

Iammarino, S., A. Rodríguez-Pose and M. Storper (2019), "Regional inequality in Europe: Evidence, theory and policy implications", *Journal of Economic Geography*, Vol. 19/2, pp. 273-298, https://academic.oup.com/joeg/article/19/2/273/4989323. [69]

Institute for Fiscal Studies (2021), *London Calling? Higher Education, Geographical Mobility and Early-career Earnings*, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1022365/London_calling_final_for_dfe_with_accessibility.pdf. [46]

JRC (2022), *New Perspectives on Territorial Disparities: From Lonely Places to Places of Opportunities*, Joint Research Centre, European Commission, https://op.europa.eu/en/publication-detail/-/publication/8fcaf458-f1da-11ec-a534-01aa75ed71a1/language-en. [47]

Kemeny, T. and M. Storper (2020), "Superstar cities and left-behind places: Disruptive innovation, labor demand, and interregional inequality", International Inequalities Institute, London School of Economics and Political Science, http://eprints.lse.ac.uk/103312/1/Kemeny_superstar_cities_left_behind_place_wp41.pdf. [8]

Königs, S. et al. (forthcoming), "The geography of income inequalities in OECD countries: Evidence from national register data", OECD Publishing, Paris. [63]

Kuznets, S. (1955), "Economic growth and income inequality", *American Economic Review*, Vol. 45, pp. 1-28. [2]

Manduca, R. (2019), "The contribution of national income inequality to regional economic divergence", *Social Forces*, Vol. 98/2, pp. 622-648, https://doi.org/10.1093/sf/soz013. [9]

Mapbox (2022), *Navigation*, https://docs.mapbox.com/api/navigation/. [41]

McCann, P. (2022), "The differential economic geography of regional and urban growth and prosperity in industrialised countries", *GOLD VI Working Paper Series*, No. 13, https://gold.uclg.org/sites/default/files/13_the_differential_economic_geography_of_regional_and_urban_growth_and_prosperity_in_industrialised_countries_by_philip_mccann.pdf. [65]

Moretti, E. (2012), *The New Geography Of Jobs*, Houghton Mifflin Harcourt. [6]

Navaretti, G. and B. Markovic (2021), "Place-based policies and the foundations of productivity in the private sector: What are we building on?", OECD-EC high-level expert workshop Productivity Policy for Places, OECD, Paris. [19]

OECD (2022), *Adapting Regional Policy in Korea: Preparing Regions for Demographic Change*, OECD Rural Studies, OECD Publishing, Paris, https://doi.org/10.1787/6108b2a1-en. [29]

OECD (2022), *Addressing territorial disparities in future infrastructure needs in the wake of the COVID-19 crisis: A G20 perspective*, OECD Publishing, Paris, https://doi.org/10.1787/e246f50f-en. [14]

OECD (2022), "ADHEP database", Unpublished, OECD, Paris. [40]

OECD (2022), *Delivering Quality Services to All in Alentejo: Preparing Regions for Demographic Change*, OECD Rural Studies, OECD Publishing, Paris, https://doi.org/10.1787/63ffb4d7-en. [43]

OECD (2022), *Education at a Glance 2022: OECD Indicators*, OECD Publishing, Paris, https://doi.org/10.1787/3197152b-en. [42]

OECD (2022), *International Migration Outlook 2022*, OECD Publishing, Paris, https://doi.org/10.1787/30fe16d2-en. [37]

OECD (2022), "Making the most of public investment to address regional inequalities, megatrends and future shocks", *OECD Regional Development Papers*, No. 29, OECD Publishing, Paris, https://doi.org/10.1787/8a1fb523-en. [59]

OECD (2022), *OECD Regional Statistics (database)*, OECD, Paris, https://www.oecd.org/regional/regional-statistics/. [33]

OECD (2022), *OECD Regions and Cities at a Glance 2022*, OECD Publishing, Paris, https://doi.org/10.1787/14108660-en. [36]

OECD (2022), *Resourcing Higher Education in Portugal*, Higher Education, OECD Publishing, Paris, https://doi.org/10.1787/a91a175e-en. [44]

OECD (2022), *The Contribution of Migration to Regional Development*, OECD Regional Development Studies, OECD Publishing, Paris, https://doi.org/10.1787/57046df4-en. [38]

OECD (2022), *Unlocking Rural Innovation*, OECD Rural Studies, OECD Publishing, Paris, https://doi.org/10.1787/9044a961-en. [45]

OECD (2021), *Bridging digital divides in G20 countries*, OECD Publishing, Paris, https://doi.org/10.1787/35c1d850-en. [51]

OECD (2021), *Delivering Quality Education and Health Care to All: Preparing Regions for Demographic Change*, OECD Rural Studies, OECD Publishing, Paris, https://doi.org/10.1787/83025c02-en. [11]

OECD (2021), "Regions and globalisation: An original approach to regional internationalisation and its application to the case of France", *OECD Regional Development Papers*, No. 20, OECD Publishing, Paris, https://doi.org/10.1787/75dae685-en. [20]

OECD (2020), "A systemic resilience approach to dealing with Covid-19 and future shocks", *OECD Policy Responses to Coronavirus (COVID-19)*, OECD, Paris, https://www.oecd.org/coronavirus/policy-responses/a-systemic-resilience-approach-to-dealing-with-covid-19-and-future-shocks-36a5bdfb/. [13]

OECD (2020), *OECD Regions and Cities at a Glance 2020*, OECD Publishing, Paris, https://doi.org/10.1787/959d5ba0-en. [52]

OECD (2020), "Policy implications of Coronavirus crisis for rural development", *OECD Policy Responses to Coronavirus (COVID-19)*, OECD, Paris, https://www.oecd.org/coronavirus/policy-responses/policy-implications-of-coronavirus-crisis-for-rural-development-6b9d189a/. [50]

OECD (2020), *Rural Well-being: Geography of Opportunities*, OECD Rural Studies, OECD Publishing, Paris, https://doi.org/10.1787/d25cef80-en. [16]

OECD (2019), *Declaration on Policies for Building Better Futures for Regions, Cities and Rural Areas*, OECD, Paris, https://www.oecd.org/regional/ministerial/RDPC-Ministerial-Declaration-EN.pdf. [28]

OECD (2019), *Promoting Healthy Ageing: Background Report for the 2019 Japanese G20 Presidency*, OECD, Paris, https://www.oecd.org/g20/topics/global-health/G20-report-promoting-healthy-ageing.pdf (accessed on May 2022). [56]

OECD (2018), *OECD Rural Policy Reviews: Poland 2018*, OECD Rural Policy Reviews, OECD Publishing, Paris, https://doi.org/10.1787/9789264289925-en. [30]

OECD (2014), *How's Life in Your Region?: Measuring Regional and Local Well-being for Policy Making*, OECD Regional Development Studies, OECD Publishing, Paris, https://doi.org/10.1787/9789264217416-en. [27]

OECD (2012), *Promoting Growth in All Regions*, OECD Regional Development Studies, OECD Publishing, Paris, https://doi.org/10.1787/9789264174634-en. [26]

OECD (2011), *OECD Regional Outlook 2011: Building Resilient Regions for Stronger Economies*, OECD Publishing, Paris, https://doi.org/10.1787/9789264120983-en. [25]

OECD (2009), *How Regions Grow: Trends and Analysis*, OECD Regional Development Studies, OECD Publishing, Paris, https://doi.org/10.1787/9789264039469-en. [24]

OECD/EC (2020), *Cities in the World: A New Perspective on Urbanisation*, OECD Urban Studies, OECD Publishing, Paris, https://doi.org/10.1787/d0efcbda-en. [48]

OECD et al. (2021), *Applying the Degree of Urbanisation: A Methodological Manual to Define Cities, Towns and Rural Areas for International Comparisons*, OECD Regional Development Studies, OECD Publishing, Paris/European Union, Brussels, https://doi.org/10.1787/4bc1c502-en. [32]

Parry, J. (2022), "sfdep: Spatial dependence for simple features", https://github.com/josiahparry/sfdep. [68]

Puga, D. (1999), "The rise and fall of regional inequalities", *European Economic Review*, Vol. 43/2, pp. 303-334, https://doi.org/10.1016/s0014-2921(98)00061-0. [5]

Rey, S., D. Arribas-Bel and L. Wolf (2020), "Spatial inequality dynamics", in *Geographic Data Science with Python*, https://geographicdata.science/book/notebooks/09_spatial_inequality.html (accessed on June 2022). [62]

Rey, S. and R. Smith (2012), "A spatial decomposition of the Gini coefficient", *Letters in Spatial and Resource Sciences*, Vol. 6/2, pp. 55-70, https://doi.org/10.1007/s12076-012-0086-z. [67]

Rice, P. and A. Venables (2020), "The persistent consequences of adverse shocks: How the 1970s shaped UK regional inequality", *CEPR Discussion Paper*, No. DP15261. [57]

Rosés, J. and N. Wolf (2018), "Regional economic development in Europe, 1900–2010: A description of the patterns", *CEPR Discussion Papers*, No. 12749, https://cepr.org/publications/dp12749. [72]

Rouzet, D. et al. (2019), "Fiscal challenges and inclusive growth in ageing societies", *OECD Economic Policy Papers*, No. 27, OECD Publishing, Paris, https://doi.org/10.1787/c553d8d2-en (accessed on 18 January 2022). [55]

Schiavina, M. et al. (2023), *GHSL Data Package 2023*, Publications Office of the European Union, https://doi.org/10.2760/098587. [34]

Souder, A. et al. (2021), "Going granular - A new database on migration in municipalities across the OECD", *OECD Regional Development Working Papers*, OECD, Paris. [35]

Südekum, J. (2021), "Place-based policies - How to do them and why", *DICE Discussion Paper*, No. 367, https://www.econstor.eu/bitstream/10419/237051/1/1767077793.pdf. [7]

Trapeznikova, I. (2019), "Measuring income inequality", IZA World of Labor, https://doi.org/10.15185/izawol.462. [73]

UK Government (2022), "Levelling up the United Kingdom", https://www.gov.uk/government/publications/levelling-up-the-united-kingdom. [31]

Venables, A. (2018), "Globalization and urban polarization", *Review of International Economics*, Vol. 26/5, pp. 981-996, https://onlinelibrary.wiley.com/doi/full/10.1111/roie.12366. [23]

Vollset, S. et al. (2020), "Fertility, mortality, migration, and population scenarios for 195 countries and territories from 2017 to 2100: A forecasting analysis for the Global Burden of Disease Study", *The Lancet*, Vol. 396/10258, pp. 1285-1306, https://doi.org/10.1016/s0140-6736(20)30677-2. [54]

Weiss, D. et al. (2020), "Global maps of travel time to healthcare facilities", *Nature Medicine*, Vol. 26/12, pp. 1835-1838, https://doi.org/10.1038/s41591-020-1059-1. [53]

Notes

[1] These is the ratio between the 20% richest and 20% poorest population's disposable income.

[2] The OECD Programme for International Student Assessment (PISA) is an international assessment that measures 15-year-old students' reading, mathematics and science literacy every 3 years.

[3] The rest of the document uses the terms GDP per capita and income per capita interchangeably.

[4] Additionally: GDP and population may not be recorded at the same place (place of residency versus place of work); national deflators do not consider higher living costs in cities and GDP value in some services such as financial services and real state may be distorted by where transactions are recorded.

[5] Values above 1 of this ratio indicate the presence of regions with very high or very low values relative to the mean. This indicator has been used to analyse inter-personal inequalities in OECD countries (Balestra and Tonkin, 2018[71]).

[6] The absolute value differs because each measure uses all the countries with available data (26 OECD at the TL3 and 29 OECD countries at the TL2 level. The trends are identical when using the same group of 23 OECD countries at both levels.

[7] The absolute gap in income per head between top and bottom regions can increase even when polarisation measured with the ratio of GDP per capita in top versus bottom regions decreases. Given higher GDP per capita income in top than in bottom regions (e.g. EUR 50 000 vs EUR 10 000), when top and bottom regions grow at exactly the same rate (e.g. 10%) the absolute gap between top and bottom increases (by EUR 400, i.e. EUR 50 500 minus EUR 10 100) and the relative gap stays the same (5 in both cases).

[8] The reminding countries in this group do not have non-metropolitan regions near a metropolitan area.

[9]The geography of spatial clustering presented here tends to diverge from that described in Rosés and Wolf (2018[72]), who report the emergence during the twentieth century of so-called "islands of prosperity" in Europe, i.e. clusters of increasingly rich regions located typically around the largest European metropolitan areas. The main reason behind this divergence has to do with the different geographical units employed in the analysis, TL2 regions in Rosés and Wolf (2018[72]) and TL3 regions (bundling together those belonging to the same metropolitan regions) in the present analysis.

[10] The technical reason is that no conclusive ranking between distributions can be drawn when Lorenz curves cross (Trapeznikova, 2019[73]).

3 Productivity and regional income inequality

This chapter explores how regional productivity contributes to income inequality between regions. It is articulated in four sections. The first section describes the nexus between economic activity in tradeable sectors and productivity inequalities. The second highlights the importance of lifting productivity growth in all sectors, focusing on the role of technological change, business dynamism and innovation as drivers. The third shows how managing the potential gains and risks from trade contributes to regional development. The fourth section outlines the case for a transition towards both productive and green sectors.

In Brief

- There are large productivity differences within OECD countries. Throughout the 2010s, labour productivity in the most productive region was about twice as high as in the least productive region on average across OECD countries.
- Reducing productivity disparities is an important vehicle for reducing income inequality between regions. Between 2001 and 2019, productivity inequality declined in nearly all countries where gross domestic product (GDP) per capita inequality decreased. Productivity growth potential exists and can be exploited in all regions. Fully closing all productivity gaps across regions is, however, unrealistic as the growth potential of a region depends, among other aspects, on geographic conditions and agglomeration economies provided by (larger) cities, which are, if at all, very slow to change.
- Higher shares of economic activity in tradeable sectors go hand-in-hand with higher productivity. Between 2001 and 2019, an annual average increase of 0.1 percentage points in the share of regional employment in the tradeable goods (services) sector was associated with a nearly 0.2 (0.06) percentage point higher annual productivity growth rate for tradeable goods (services). Strengthening tradeable activities in low-productivity regions can therefore reduce productivity disparities within countries. In non-metropolitan regions, tradeable goods sectors in particular provide opportunities as the share of employment and the gross value added (GVA) they contribute to the regional economy is, on average, nearly 50% higher than in metropolitan regions. Tradeable sectors are, however, also more exposed to international competition and global shocks, which can stimulate innovation and investment to raise productivity but also make a region more vulnerable.
- Sectoral productivity gaps across regions point to untapped potential in lagging regions. Regional differences in total productivity partly reflect differences in sectoral compositions but also productivity differences within the same sectors. This implies scope to boost productivity growth through active innovation, innovation diffusion and scale-up policies and investments in infrastructure (e.g. digital technologies).
- Regional disparities in technological progress and innovation have contributed to widening productivity disparities. Technological progress, especially in tradeable services, raises productivity for all firms but more so for firms with workers with higher levels of education and skills. These workers tend to live and have jobs in larger cities or metropolitan regions that are already among the more productive regions within their country. Similarly, innovation that leads to patents is highly concentrated, with only 10% of regions accounting for more than 60% of international patents.
- The necessary transition toward climate-neutral economies may further exacerbate disparities across space. Industries that are among the most difficult to align with climate neutrality goals tend to be concentrated in specific regions that are often socio-economically weaker. The associated jobs are among the most productive and high-paying in those regions. Therefore, unless adequate policies support regions to weather these changes, the transition to climate neutrality is likely to drive up economic disparities within OECD countries.

Introduction

Productivity is widely recognised as a key driver of economic growth and higher levels of income. Higher levels of employment, in part driven by population growth, are also important drivers of higher levels of income. But with 14 OECD countries facing population decline by 2040 (see Chapter 2), including 40% of OECD regions (with many also ageing), the emphasis on productivity to address regional disparities in income cannot be overstated.

Unsurprisingly, given the strong relationship between productivity and income, differences in productivity between regions tend to translate into differences in income. These, in part, reflect spatial factors and in particular specialisation in activities that relate to the comparative advantage in regions, including for example access to natural assets, markets, infrastructure and increasingly skills and knowledge. However, productivity differences also relate to challenges associated with scale, and, in particular, economies of scale. These are increasingly important drivers of productivity growth, especially in knowledge-intensive service activities. Metropolitan regions have in this respect a distinct comparative advantage through agglomeration effects. Productivity is indeed between 2-5% higher for each doubling in size of a city (OECD, 2015[1]).

Given these, largely structural differences in regions, it is unrealistic to fully eradicate all inequality in productivity. But a better understanding of the drivers of inequality does provide scope to narrow the gaps, in particular in the context of rapid advancements made through digitalisation, the need to accelerate the green transition and shifting patterns of trade, including through the greater emphasis being placed on resilience, all of which are beginning to shift notions of regional comparative advantages, presenting challenges but also opportunities.

Non-metropolitan regions for example tend to be in a less favourable position as they often have worse access to infrastructure or the intensity of innovation and innovation uptake are lower than in other regions, both of which are important drivers of regional productivity, but there is significant scope to address this (OECD, 2022[2]). Inadequate transport connections, for example, can limit the productivity growth potential of non-metropolitan regions where natural resources are important assets (OECD, 2020[3]). Lower levels or quality of digital infrastructure can also reduce the productivity level that regions can attain. But again, these structural differences are not irresolvable and addressing them can also deliver gains beyond productivity growth alone (OECD, 2020[3]).

Productivity gains come through different channels, including deeper labour markets that allow for better matching of the skills of workers with jobs, greater specialisation by suppliers and greater ease of formal and informal knowledge exchange and learning. These channels are particularly important for high-value-added – tradeable – activities that require specific skills and constant learning and innovation. Bigger cities leverage these channels by bringing firms close to each other and close to a large pool of workers, suppliers, customers or clients. In short, they provide “agglomeration economies”. Smaller cities can achieve some of the benefits that agglomeration benefits provide by increasing the concentration of activities or by strengthening links across and within regions to create local critical mass (OECD, 2016[4]).

As resilience has gained importance in economic policy making, there is also a greater appreciation of the costs that may be associated with higher productivity, including economic as well as social costs. For example, the potential gains from agglomeration economies also elicit higher costs, including those that impact the bottom line of firms, such as higher rental costs, and those that impact society as a whole, such as greater congestion or higher levels of air pollution in bigger cities. The historical growth of cities itself can become a challenge as fragmented governance arrangements can be a drag on productivity in large cities. In the absence of effective multi-level governance mechanisms, such as metropolitan governance bodies, the more municipalities that are part of a metropolitan area, the lower its agglomeration benefits and the higher the productivity penalty of administrative fragmentation (Ahrend et al., 2017[5]).

Most non-metropolitan regions have greater specialisation in primary economic activities and, often, labour-intensive, manufacturing of tradeable goods, which have been exposed to high levels of international competition and the offshoring of activities to lower-income economies in recent decades. This trend has been slowing in recent years, though, and may even be beginning to reverse as firms increasingly look to reshore strategic activities.

The insights presented in this chapter complement and expand the analysis contained in the second edition of the *Regional Outlook* (OECD, 2016[4]). They reinforce the view that closing productivity gaps through growth in low-productivity regions can reduce income inequality and that tradeable sectors play an instrumental role in this effort (OECD, 2018[6]).[1]

The discussion is articulated along five main messages. First, albeit somewhat stating the obvious, productivity growth matters to close GDP per capita gaps between regions. Second, structural changes in specialisation, including those being driven by the green and digital transitions, especially towards higher productivity – tradeable – sectors, can help low-productivity regions catch up. Third, significant productivity gaps in the same activity across regions within the same country demonstrate the untapped potential to boost productivity in all sectors. Fourth, for trade to benefit regional development, it is essential to manage the risks posed by international competition and global shocks. Fifth, an excessive emphasis on high-productivity sectors should not come at the expense of investment in green sectors. The analysis presented in this chapter focuses on long-run trends in small (TL3) regions. It covers the period between 2001 and 2019 to exclude the economic disruptions that OECD economies have faced since 2020 due to the COVID-19 pandemic and Russia's war of aggression against Ukraine.

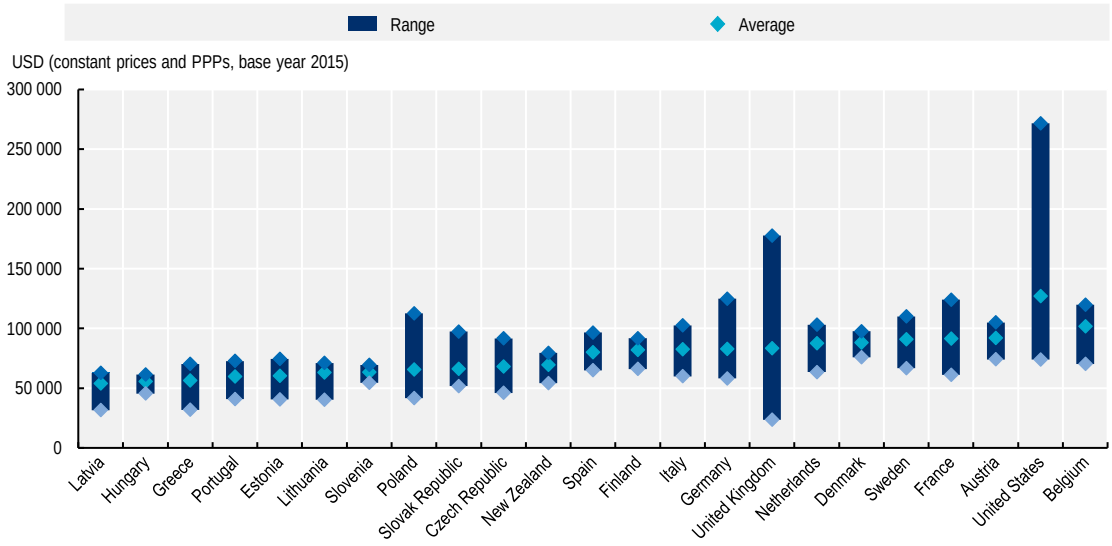
Disparities in labour productivity within countries are large

Disparities in labour productivity, the measure of productivity used in this chapter, within OECD countries are large.[2] The most productive small (TL3) regions in countries with, on average, low productivity are often as productive as the middle- or even high- productivity countries (Figure 3.1). Labour productivity in Poland's capital city Warsaw and its surrounding regions, for example, is around the same level as average productivity in Belgium, the second most productive among the 23 OECD countries included in the analysis in this chapter. Generally, labour productivity is highest in metropolitan regions. In 2019, labour productivity in metropolitan regions was, on average, about USD 115 000 compared to about USD 106 000 in non-metropolitan regions.[3]

Overall, labour productivity disparities declined across OECD regions between 2001 and 2019 (Figure 3.2). The trend was purely driven by relatively faster aggregate productivity growth in less productive countries, evident in a continuous decline in between-country inequality. In contrast, productivity gaps within countries rose and fell in the runup to and recovery from the global financial crisis (GFC), with regional productivity inequality remaining above the levels of the early 2000s ever since. In particular, non-metropolitan regions have struggled to close productivity gaps since then. Non-metropolitan regions close to metropolitan areas have grown slower than metropolitan regions before the GFC, during the crisis and since 2013, when most countries had weathered the shock of 2008. Non-metropolitan regions far from metropolitan areas went from catching up in the runup to the GFC to falling behind since 2013 as productivity growth slowed from 1.8% before the crisis to 0.7% between 2013 and 2019 (Figure 3.3).

Figure 3.1. Productivity disparities within countries are larger than between countries in 2019

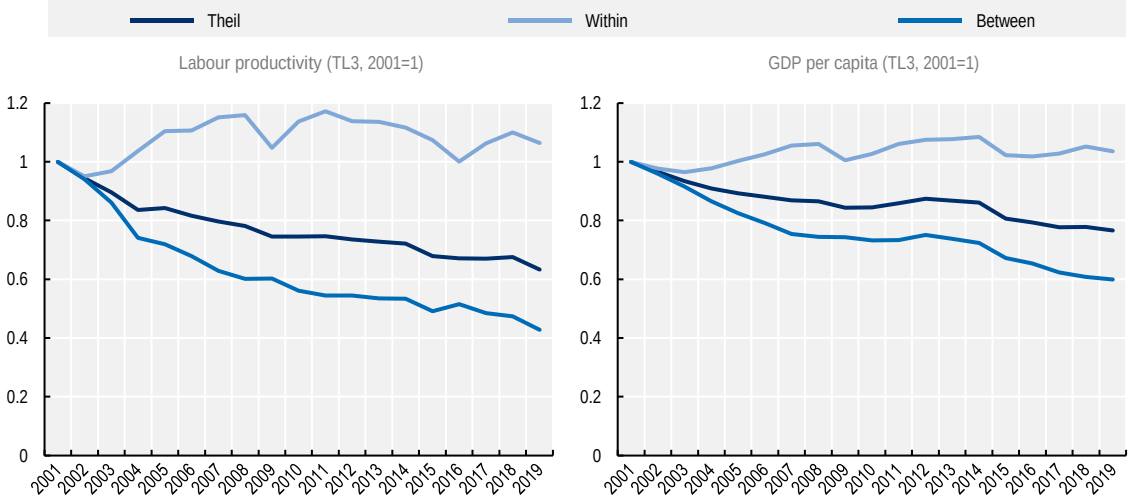
Labour productivity (GVA per employee) in TL3 regions



Notes: Average labour productivity is the national average calculated by weighting regions according to employment.
Source: Based on data from OECD (2022[7]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

StatLink https://stat.link/y02k6x

Figure 3.2. Regional inequality in labour productivity declined more than regional income inequality

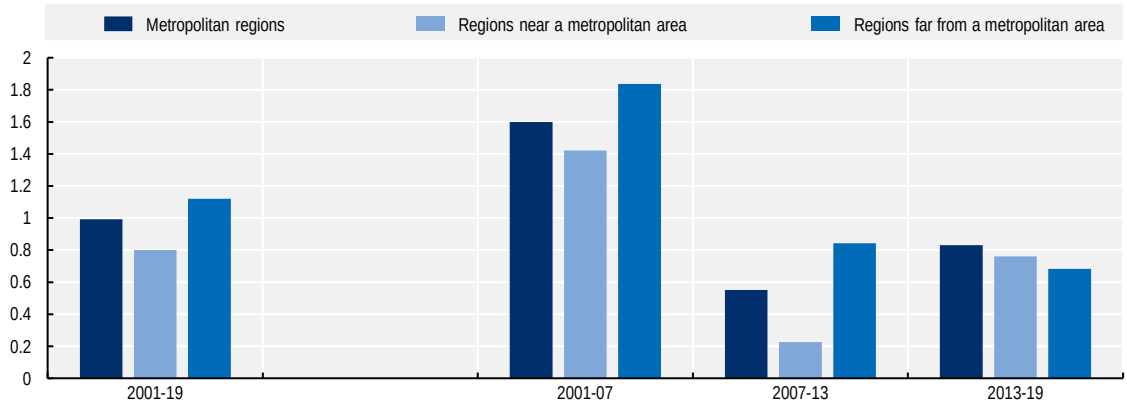


Note: The Theil index measures the spread (variance) in labour productivity and GDP per capita levels across regions (see Chapter 2). Countries included are AUT, BEL, CZE, DEU, DNK, ESP, EST, FIN, FRA, GBR, GRC, HUN, ITA, LTU, LVA, NLD, NZL, POL, PRT, SVK, SVN, SWE and USA. Between inequality refers to variability across country means with respect to the overall (OECD) mean. Within inequality refers to variability in regional values with respect to the country mean.
Source: Based on data from OECD (2022[7]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

StatLink https://stat.link/20dlmi

Figure 3.3. Catching up has stalled for remote regions after the global financial crisis

Annual average growth rate of labour productivity across types of TL3 regions, 2001-19 (%)



Note: Labour productivity is GVA per employee in USD at constant 2015 prices and purchasing power parity (PPP). Countries included are AUT, BEL, CZE, DEU, DNK, ESP, EST, FIN, FRA, GBR, GRC, HUN, ITA, LTU, LVA, NLD, NZL, POL, PRT, SVK, SVN, SWE and USA.
Source: Based on data from OECD (2022[7]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

StatLink https://stat.link/g4s2ij

Leveraging labour productivity to reduce GDP per capita inequality

Differences in productivity between regions are large. On average, within countries, labour productivity in the most productive region is nearly twice as high as the productivity of the least productive region. Labour productivity growth is equally unevenly distributed. More than half of OECD countries had at least one region where productivity declined over the past two decades despite generally positive average labour productivity growth at the national level (OECD, 2022[8]).[4] Such differences in productivity and its growth matter also for regional GDP per capita or income inequality. GDP per capita can be broken down into a demographic component (the share of the working-age population among the overall population), the employment rate, i.e. the share of workers in the working-age population, and (labour) productivity (see Box 3.1). It follows that, with demographic pressures mounting for many regions (see Chapter 2) and employment rates naturally limited, productivity will need to take a central role in curbing income inequality across regions.

Box 3.1. Making the link between GDP per capita and labour productivity

GDP per capita and labour productivity are tightly linked economic concepts. GDP per capita can be decomposed as follows:

$$\frac{GDP}{Population} = \frac{WorkingAgePopulation}{Population} \times \frac{Employment}{WorkingAgePopulation} \times \frac{GDP}{Employment}$$

The first term, the working-age population ratio, reacts primarily to shifts in the demographic structure of the population. The second term, the employment rate, depends in turn both on labour force participation and the unemployment rate. The third, i.e. the ratio between GDP and employment, is tightly linked to labour productivity, namely GVA divided by total employment (by place of work), where GVA adjusts GDP by the value of subsidies and taxes on products:

$$GVA = GDP + Subsidies - Taxes\ on\ products$$

GDP per capita inequality can increase because of diverging trends between regions in the working-age population ratio, in the employment rate or in labour productivity.

Figure 3.4 considers a hypothetical scenario in which productivity growth

$$\frac{\left(\frac{GVA_{r,2019}}{Employment_{r,2019}} - \frac{GVA_{r,2001}}{Employment_{r,2001}}\right)}{\frac{GVA_{r,2001}}{Employment_{r,2001}}}$$

is constant across regions and equal to productivity growth at the national level

$$\frac{\left(\frac{GVA_{2019}}{Employment_{2019}} - \frac{GVA_{2001}}{Employment_{2001}}\right)}{\frac{GVA_{2001}}{Employment_{2001}}}$$

In countries that featured regional productivity catching up during 2001-19, the hypothetical scenario of equal productivity growth – by construction – will lead to greater GDP per capita inequality. Comparing the actual change in income inequality with the hypothetical scenario shows how much the "catching up" of less productive regions contributed to reducing income inequality. Conversely, in countries that featured regional productivity divergence, the scenario will show a decline in GDP per capita inequality. The difference between the actual change in inequality and the level of inequality under the hypothetical scenario allows to quantify by how much income inequality would have improved if the productivity differences had remained stable.

Between 2001 and 2019, within-country productivity inequality increased in 10 of the 14 countries considered for this chapter that experienced a rise in GDP per capita inequality. In the remaining four countries, Estonia, Lithuania, Poland and Slovenia, demographic shifts, differences in labour force participation and unemployment rates drove the rise in GDP per capita inequality, more than offsetting the catching-up by low-productivity regions. The link between productivity and income inequality is even more evident in countries with falling GDP per capita inequality, with productivity inequality falling in eight out of nine countries (Table 3.1).[5]

The GFC was the starting point for rising productivity disparities in 4 out of 11 countries where disparities went up during 2001-19 (Denmark, France, Italy, Spain). For instance, in France, productivity disparities remained constant until the GFC but rose markedly thereafter. In Italy, productivity inequality had even been declining before a reversal in the trend in 2008. Conversely, the rise in productivity disparities appears to have been the result of longer-term drivers in 5 out of 11 countries (Belgium, Hungary, the Slovak Republic, the United Kingdom).

To what extent can productivity growth be leveraged to address income inequalities? A hypothetical scenario can help answer this question (see Box 3.1).[6] The scenario assumes that, between 2001 and 2019, productivity grew at the same – national average – rate across regions, thus holding productivity gaps between regions constant. This scenario highlights the benefit of the actual "catching up" of less productive regions that occurred in the 12 countries where labour productivity inequality decreased and the potential gains for the remaining 11 countries where inequality increased.

In the 12 countries where labour productivity inequality decreased, income inequality would have grown, on average, by 1.7 percentage points more if labour productivity growth had been the same across regions instead of the actual "catching up" that occurred (Figure 3.4). For the 11 countries where labour productivity inequality increased, the gains from the hypothetical scenario would have been sizeable, with 1 percentage point lower growth in income inequality. Given the actual annual average increase of income inequality by 1.4% in these countries, equal productivity growth across all regions would have reduced the actual change by more than two-thirds.[7]

Table 3.1. Closing productivity gaps is important to reduce income inequality

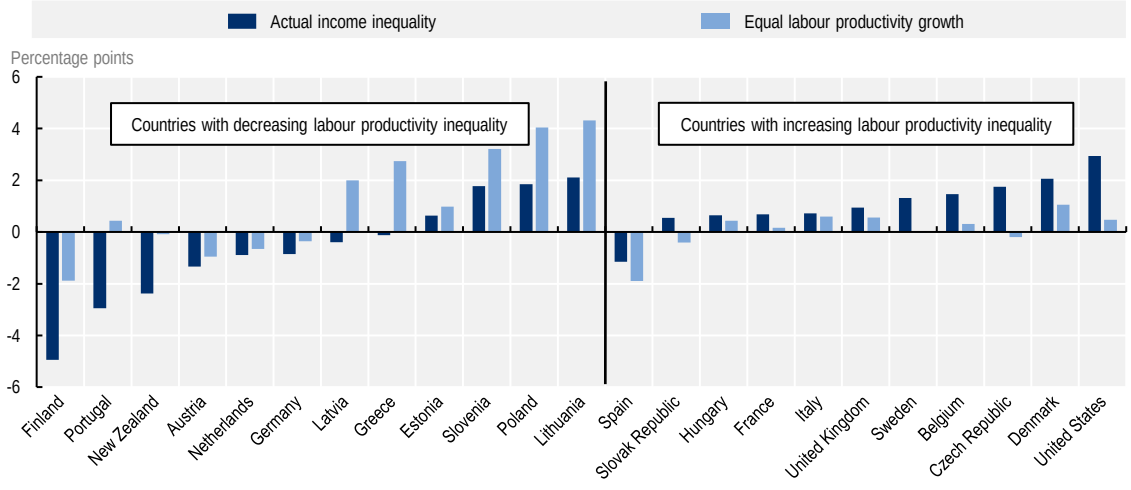
Changes in labour productivity and income (GDP per capita) within-country inequality, 2001-19

GDP per capita inequality decreasing		GDP per capita inequality increasing	
Labour productivity inequality decreasing	Labour productivity inequality increasing	Labour productivity inequality decreasing	Labour productivity inequality increasing
Austria	Spain	Estonia	Belgium
Finland		Lithuania	Czech Republic
Germany		Poland	Denmark
Greece		Slovenia	France
Latvia			Hungary
Netherlands			Italy
New Zealand			Slovak Republic
Portugal			Sweden
			United Kingdom
			United States

Note: Based on the growth rate of the average in the cross-TL3 regions Theil index in 2001/02 and 2018/19 for GDP per capita and labour productivity, where the latter is measured as GVA divided by employment. Japan, Korea, Norway and Türkiye are excluded from the analysis in this chapter. Türkiye regional data on labour productivity are missing and Japanese, Korean and Norwegian regional data on labour productivity start only in 2009 (Japan) and 2008 (Korea and Norway) respectively. Data for the United Kingdom start in 2004 (Northern Ireland missing due to boundary changes).
Source: Based on data from OECD (2022[7]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

Figure 3.4. Reducing labour productivity inequality results in a sizeable reduction in regional income inequality

Annual average change in cross-TL3 income inequality between 2001 and 2019 (%) compared to a hypothetical "equal labour productivity growth" scenario



Note: According to the equal labour productivity growth scenario, regional labour productivity is assumed to grow at the same rate as the national one in each region between 2001 and 2019. Income inequality is measured by the Theil index of GVA per capita both for the actual change and under the hypothetical scenario. Inequality as measured by the Theil index in 2001 is obtained as the average of the values in 2001 and 2002; inequality in 2019 is obtained as the average of the values for 2018 and 2019. Data for the United Kingdom start in 2004 (Northern Ireland missing due to boundary changes). Countries are sorted in ascending order of their change in income inequality between 2001 and 2019. Labour productivity is calculated as gross value added/employment, where employment corresponds to employment by place of work.
Source: Based on data from OECD (2022[7]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

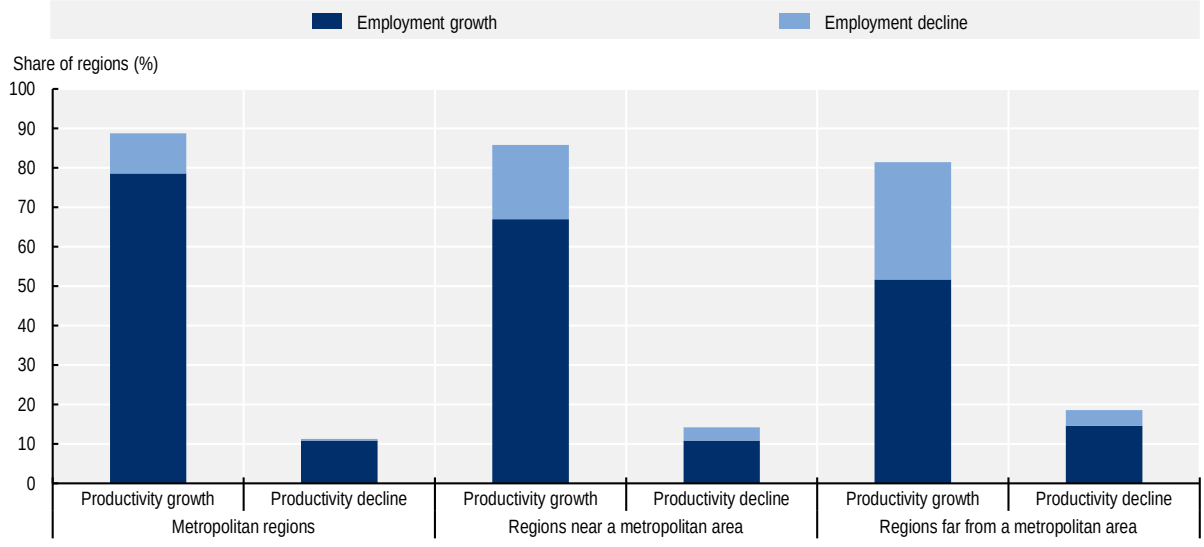
StatLink https://stat.link/2ru6k5

Raising productivity alone is insufficient to fully address all regional challenges. If productivity growth comes through, for example, capital investment, overall employment may decline as labour is substituted with capital, creating additional socio-economic challenges in regions. Similarly, productivity growth and higher productivity can also emerge as an outcome of less productive firms exiting the market at the cost of overall lower output, as well as less employment. Hence, some care is needed in ensuring that productivity growth is seen as a means to an end, with higher income and more jobs of better quality being the end.

That being said, employment grew in nearly 90% of metropolitan regions alongside growth in productivity between 2001 and 2019 (Figure 3.5). However, for regions near metropolitan areas, employment declined in more than 22% of regions with productivity growth, a share that increased to nearly 37% for regions located far from metropolitan areas. Productivity is also not the only metric of regions' success, as they increasingly need to support the transition towards climate neutrality and the development of green but not necessarily productive (yet) industries and firms.

Figure 3.5. Many non-metropolitan regions experience employment decline as productivity grows

Share of TL3 regions by growth or decline in labour productivity and employment, type, 2001-19



Note: Labour productivity is GVA per employee in USD at constant 2015 prices and PPP. Countries included are AUT, BEL, CZE, DEU, DNK, ESP, EST, FIN, FRA, GBR, GRC, HUN, ITA, LTU, LVA, NLD, NZL, POL, PRT, SVK, SVN, SWE and USA. Growth rates for GBR are for the 2004-19 period.
Source: Based on data from OECD (2022[7]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

StatLink https://stat.link/y8jsdk

Productivity growth through reallocation towards high-productivity sectors

Reallocating economic activity towards high-productivity – tradeable – sectors is a source of productivity growth (Baumol, 1967[9]). Trade integration and the greater degree of competition it entails favour technology upgrading and productivity, among all firms and not just those engaged in exporting. Consequently, tradeable sectors tend to feature higher productivity on average, at least in developed countries (Mano and Castillo, 2015[10]).[8]

This section discusses the nexus between labour productivity and the shift of employment towards tradeable sectors. It discusses cross-and within-country sectoral reallocation trends. Finally, it shows that the shift of employment towards the tradeable goods sector in non-metropolitan regions has reduced productivity inequality.

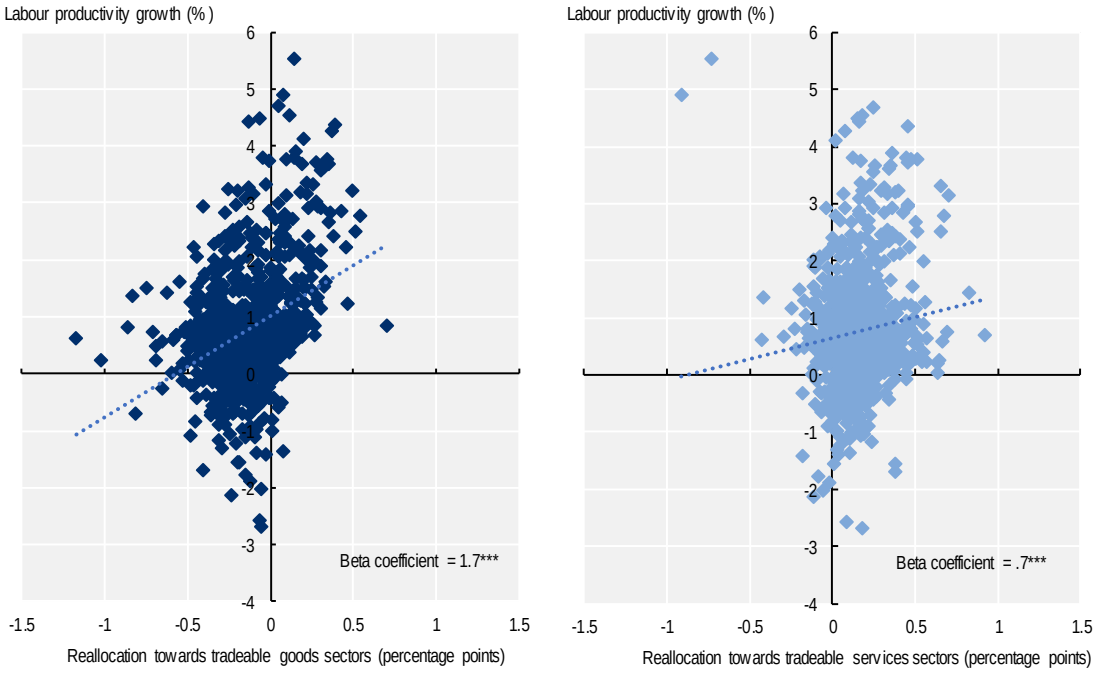
The shift towards tradeable sectors is boosting regional labour productivity growth

During 2001-19, labour productivity growth was higher in regions where employment grew in tradeable sectors. Reallocation towards (away from) tradeable sectors in a region is captured by an increase (decrease) in the share of regional employment in these sectors. Using information on 973 TL3 regions, an annual average increase of 0.1 percentage points in the employment share in the tradeable goods sector over the 2001-19 period is associated with 0.17 percentage points higher annual average productivity growth in the region. The correlation is weaker for the tradeable services sector but still positive and statistically significant, and equal to 0.07 (Figure 3.6).

The two macro sectors differ also in terms of average expansion or contraction of employment. The change in the share of regional employment was negative in 80% of regions for the tradeable goods sector (used interchangeably in this chapter for the industrial sector), while positive in nearly 90% of regions for tradeable services. Harnessing the productivity growth potential from these two sectors requires different approaches that can be mixed and tailored to the region with the aim of preventing employment in the industrial sector from further declining or favouring an expansion of employment in tradeable services.

Figure 3.6. Overall productivity growth is higher in regions reallocating jobs towards tradeable sectors

TL3-level yearly change in the employment share of tradeable sectors and overall productivity growth between 2001 and 2019



Note: The 2001 values are obtained as an average between 2001 and 2002; the 2019 values are obtained as an average between 2018 and 2019. The industrial sector includes NACE group B-E, while tradeable services include NACE groups J, K, L, M-N. For Austria, Germany, Poland, Spain and the United Kingdom, tradeable services include G-J, K, L, M-N. Data for the United Kingdom start in 2004 (Northern Ireland missing due to boundary changes). Data from the United States are not included in the analysis due to the low quality of employment data by sector/TL3 region.

Source: Based on data from OECD (2022[7]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

StatLink https://stat.link/1jfhw0

Employment in high-productivity sectors rose at different speeds

During 2001-19, employment in OECD countries shifted from the industrial (tradeable goods) sector towards tradeable services. As a result, the employment share of the industrial sector shrank from 14% to 12%.[9] The GFC was an important contributor to this shift, with nearly 5 million industrial jobs lost during 2008-10 (see Annex 3.B for the longer-lasting consequences of the GFC).[10] To compensate for the decline of the industrial sector, OECD countries have witnessed robust growth in tradeable services, with the employment share rising from 17% to 19% on average across countries and a total of 16 million jobs added in less than 20 years (from 54 million workers in 2001 up to 70 in 2019) (see Annex 3.A for country-specific figures).

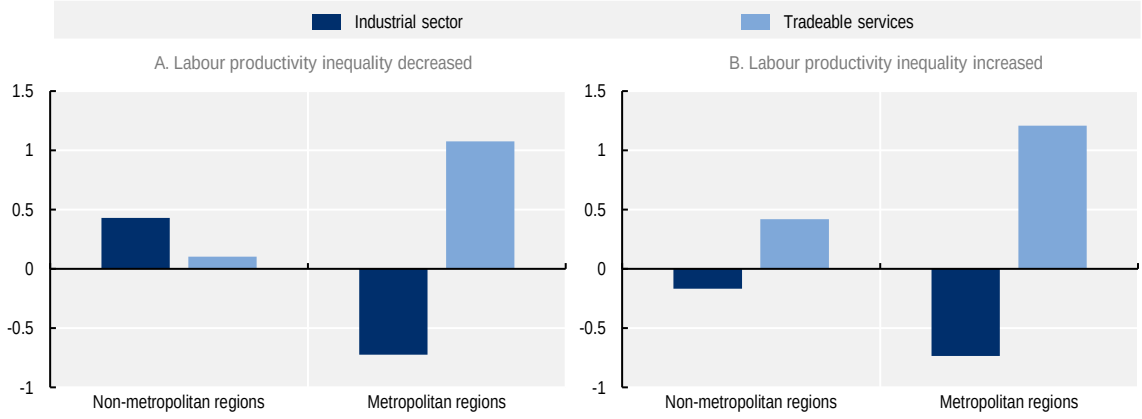
Between 2011 and 2019, the share of employment in tradeable sectors diverged across OECD regions. This trend is likely to have increased productivity inequality.[11] In Spain, for instance, the employment share in the industrial sector declined faster in regions where this share was already low (12% decline as opposed to 5% in other regions), resulting in an increase in productivity inequality between 2011 and 2019. Conversely, productivity inequality decreased in some countries that managed to close gaps in the employment share. In Poland, the employment share in tradeable services rose by 9% during 2011-19 in

regions with an initially lower share, while it stayed approximately constant in other regions and overall productivity inequality decreased.

The evolution of employment shares in the industrial sector in non-metropolitan regions has been a driver of convergence in OECD countries. Countries where the industrial sector in non-metropolitan regions performed better than in metropolitan ones, saw, on average, a decrease in productivity inequality (Figure 3.7).

Figure 3.7. Non-metropolitan regions added employment in the industrial sector in countries where labour productivity inequality decreased

TL3-level change in the employment share in high-productivity sectors between 2011 and 2019, averages by metropolitan/non-metropolitan status and country groups (percentage points)



Note: The 2011 values are obtained as an average between 2011 and 2012; the 2019 values are obtained as an average between 2018 and 2019. The industrial sector includes NACE group B-E, while tradeable services include NACE groups J, K, L, M-N. For Austria, Germany, Poland, Spain and the United Kingdom, tradeable services include G-J, K, L, M-N. Data for the United Kingdom start in 2004 (Northern Ireland missing due to boundary changes). Data for the agricultural sector missing for the United Kingdom. Countries where labour productivity inequality increased are Belgium, the Czech Republic, Denmark, France, Hungary, Italy, the Slovak Republic, Spain, Sweden and the United Kingdom; countries where it decreased are all the remaining others. Data from the United States are not included in the analysis due to the low quality of employment data by sector/TL3 region.
Source: Based on data from OECD (2022[7]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

StatLink https://stat.link/as0btm

Increasing productivity in all economic sectors and regions

There is significant potential for low-productivity regions to boost productivity growth in all economic sectors. In 2019, close to 25% of productivity differences between regions within OECD countries were due to differences in productivity within the same macro sectors (tradeable services, tradeable goods, non-tradeable services and primary). Empirical evidence based on firm-level data also highlights the importance of "within-sector" differences. About 75% of productivity differences between firms occur within the same industry (Criscuolo et al., 2021[11]). Indeed, productivity gaps within sectors are often growing. For example, in the metropolitan region of Paris, productivity in the tradeable services sector in 2001 was 9% higher than in the other French regions combined and the gap widened between 2001 and 2019 as productivity in Paris grew by 30%, while it declined on average by 1.6% across all other French regions. Similarly, the increase in wage inequality among United States' commuting zones between 1980 and 2015 can be attributed to differential growth in business services-related industries (Eckert, Ganapati and Walsh, 2022[12]).

In 2004, the average productivity difference in the tradeable services sector between the top- and bottom-50% of productive regions in Germany and the United Kingdom was quite similar and equal to, respectively, 31 and 39 percentage points. However, between 2004 and 2019, productivity in tradeable services grew by 11% in the bottom 50% of regions in Germany compared to 5% in the top 50% of regions. Conversely, productivity in tradeable services grew by 12% in the top 50% of United Kingdom (UK) regions, compared to 9% in the bottom 50% of regions. Over the same period, total productivity inequality declined in Germany, while it increased in the United Kingdom.[12]

This section considers a set of drivers of within-sector labour productivity growth, namely technological change, business dynamism and innovation and their connection with productivity inequality.

The impact of technological change is neither skill- nor place-neutral

Starting in the 1980s, technological change in areas such as information and communication technology (ICT), artificial intelligence and robotics has neither been skill- nor place-neutral. There is evidence that automation, which enables capital to replace labour, and computerisation, which replaces repetitive tasks has caused a shift in labour demand away from low- and middle-skill occupations to high-paying professional segments of the labour force (OECD, 2019[13]). The trend continues as the OECD estimates the share of jobs at risk of automation ranging from 4% to 40% across TL2 regions (OECD, 2020[14]). At the same time, technological change has contributed to the creation of new types of jobs and created an increase in demand for others – often those requiring high levels of skill. The "skill-biased" increase in employment has mitigated the negative impact of technological progress on aggregate employment but at the cost of increased interpersonal inequality (OECD, 2020[14]; 2019[13]).[13]

Technological change has also contributed to worsening productivity inequality (Moretti, 2012[15]; Eckert, Ganapati and Walsh, 2022[12]). Using data on US regions, Giannone (2021[16]) estimates that 50% of the decline in regional catching-up observed in the United States since the 1980s can be attributed to skill-biased technological change. Using data on French local labour markets, Davis et al. (2022[17]) highlight that the disappearance of middle-skilled jobs has triggered the creation of low-skilled jobs in smaller cities and high-skilled jobs in larger ones. Agglomeration forces disproportionately benefitting high-skilled individuals are likely to reinforce their choice to find jobs in already highly productive "skill-rich" regions, thus widening productivity inequality (Moretti, 2012[15]).

The rise of remote work can become an opportunity for low-productivity regions

The COVID-19 pandemic has provided an unprecedented stimulus towards the digitalisation of the economy and society. Regional differences in terms of access to digital infrastructure have been narrowing since the pandemic under the impulse of increased demand by firms and households. However, gaps remain large in certain countries. For example, the gap in the share of households with access to broadband Internet between better-off and worse-off regions was around 10 percentage points in 2021 across OECD countries. However, it reached as much as 20 percentage points in countries such as Chile, Israel, Japan and Mexico (OECD, 2022[8]).

The stimulus induced by the pandemic has both reinforced the ongoing labour market structural transformation and introduced some new powerful diversification drivers, such as the rise in remote work, primarily among service sector jobs. During the first wave of the pandemic, the share of workers teleworking at least once per week went up from 31% to 58% across OECD countries. In surveys, managers and workers tend to provide a positive assessment of remote work in terms of both productivity and well-being. Furthermore, two years after the COVID-19 outbreak, the share of remote workers has not gone back to pre-pandemic levels. This trend seems to suggest that, overall, remote work is likely to become a permanent feature of the labour market (Luca, Özgüzel and Wei, forthcoming[18]).

The implications of the rise in remote work for the spatial organisation of economic activity are profound. The uptake of remote work and the ensuing decline in commuting translated into a shift in residential preferences. The subsequent move of housing demand away from core cities towards suburban regions (Ramani and Bloom, 2021[19]; Ahrend et al., 2022[20]) has also helped to reduce regional differences in the cost of living. On a more macrogeographical scale, remote work can also benefit regions located further away from core cities. However, the scale needed for this phenomenon to have a measurable positive impact on productivity and economic development restricts the set of regions in a position to benefit from it (Baldwin and Dingel, 2021[21]). An example of regions that can benefit are those with intermediate cities known as "university towns" that featured a concentration of ICT activities already before the pandemic (Florida, Storper and Rodríguez-Pose, 2021[22]).

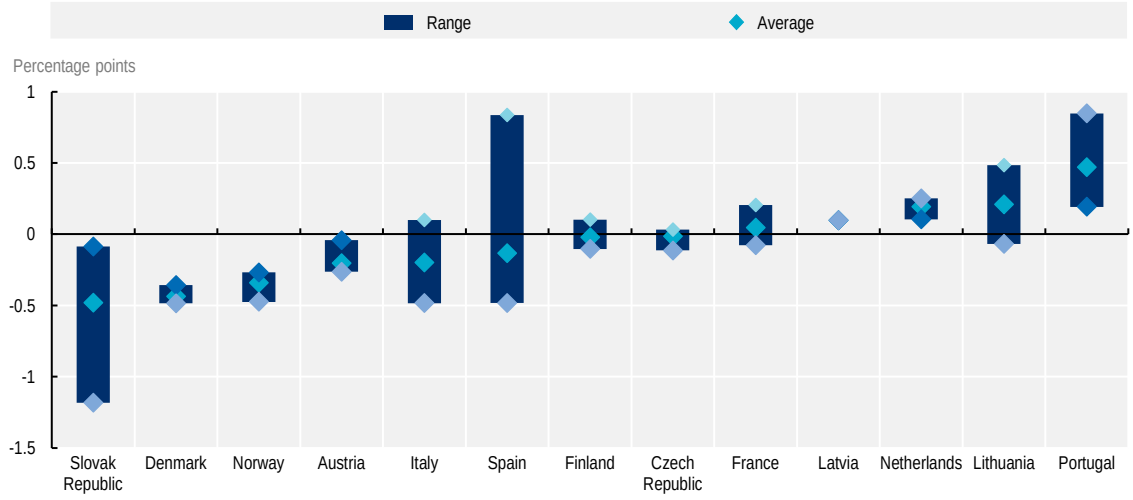
Uneven business dynamism is linked to productivity disparities

Business dynamism, and in particular the firm creation rate, has been weak across several OECD countries, affecting both productivity and employment growth, as younger firms are more likely to grow both in productivity and employment terms (OECD, 2021[23]), and lower levels of entry weaken competition and induce greater concentration (Autor et al., 2020[24]). Finally, it reduces the scope for workers in low-paying and low-productivity firms to change jobs and thereby improve both their productivity and pay (Criscuolo et al., 2021[11]). Recent OECD work analysing the impact of the GFC has shown that declines in entry rates have persistent negative effects on employment. A 20% drop in the number of entrants in a single year induced a loss of about 0.7% of aggregate employment 3 years after the GFC and 0.5% 14 years later (OECD, 2020[25]).

Regional disparities in the evolution of business dynamism might amplify differences in productivity growth between regions. Data at the TL2 level from the OECD Regional Business Demography database available for a subset of 13 OECD countries indicate that the firm creation rate declined during 2012-18 for the median region (Figure 3.8). Variation within countries has been significant. For instance, in the autonomous community of the Basque Country, Spain, the firm creation rate has declined on average by 0.5 percentage points on an annual basis during 2012-18, dropping from 10 new firms every 100 firms to 7.5 in 2018, while it increased in the Canary Islands. Similarly, the firm creation rate declined everywhere in Italy (from 9.7% firm creation rate at the start of the period down to 8.8%in 2018) except for the Autonomous Province of Bozen-Bolzano. Population ageing (Karahan et al., 2021[26]), negative net inflow rates of young people and weak ICT adoption are likely to expose less populated and remote regions to more severe declines in business dynamism. For example, in the United States, smaller cities experienced the largest declines in firm entry rates during 1982-2018 (Rubinton, 2020[27]).

Figure 3.8. Firm creation has gone down in many countries

Within-country variation at the TL2 level in 2012-18 firm creation rate changes



Note: The 2012-18 firm creation rate difference is defined as the ratio between the annualised difference between the number of new firms in 2018 and the number of new firms in the first available year (at the numerator) and the average number of existing firms between 2018 and the first available year (at the denominator). Only countries with at least four observations per region during 2012-18 are considered.
Source: Based on data from OECD (2022[7]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

Sluggish innovation may hinder growth in regions

Innovation is a fundamental driver of productivity growth and its role is likely to be strengthened as production becomes increasingly digitalised (Brynjolfsson and McAfee, 2011[28]).[14] Innovation tends to be highly spatially concentrated. The high degree of spatial concentration is the result of the strong agglomeration externalities involved in the production of ideas and knowledge. Based on data from the European Patent Office during 1995-2014 for 30 OECD countries, 10% of cities accounted for 64% of patent applications (Paunov et al., 2019[29]). The advent of digitalisation and ICT have reinforced the incentives for innovative activity to concentrate spatially. For instance, in the United States, the share of patent applications accounted for by the top 10% of cities rose by 10 percentage points between 1995 and 2014 (Paunov et al., 2019[29]).

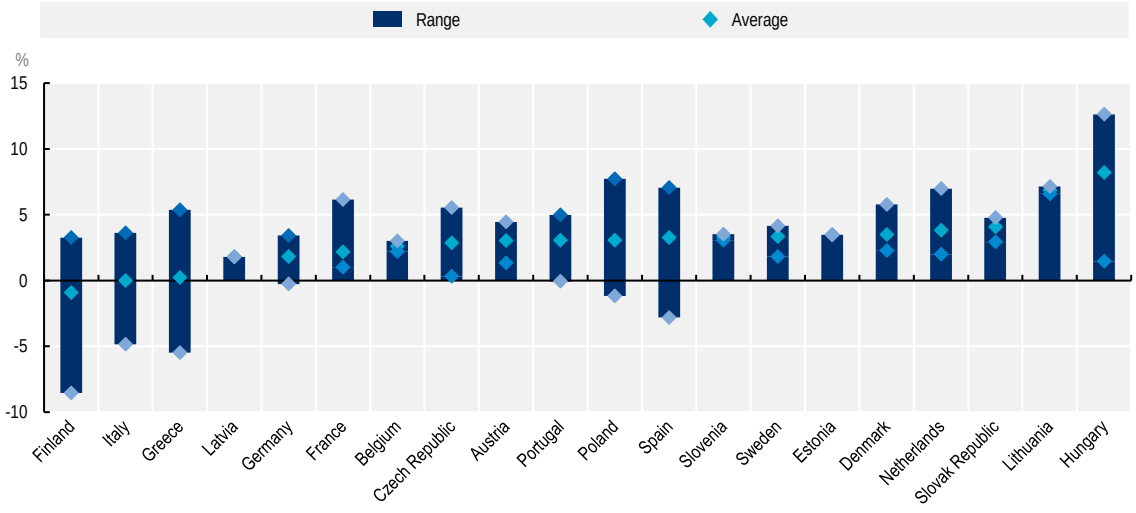
Incremental innovation or technology adoption complements frontier innovation by favouring its diffusion to other parts of the economy (OECD, 2020[30]). Firms do not in fact just develop knowledge; they also use the knowledge and technology developed by others, such as by adopting a customer relationship management software or building upon it to introduce further innovations. Regional differences are large when it comes to the diffusion of innovation. In 2021, nearly all businesses in Finland adopted cloud computing as opposed to an OECD average of approximately 70%. Large within-country differences exist also with respect to the competencies necessary to adopt new technologies. In countries such as Belgium or Hungary, the share of vacancies requiring digital skills in 2019 was 5% for the average region but as high as 15% in capital regions (OECD, forthcoming[31]).

Access to finance is a critical enabler of innovation. Barriers to access to finance are stronger for small and medium-sized enterprises (SMEs) and younger firms. SMEs usually have fewer assets to pledge as collateral. Furthermore, they tend to be less well-known by banks and investors, thus ending up suffering more heavily from negative informational asymmetries (OECD, 2022[32]). Differences in the level of capital stock between regions do not thus just translate into different levels of productive capacity. They are also reflected in different levels of assets that can be pledged as collateral to finance innovative activity,

potentially exacerbating gaps in innovation potential between regions. The sluggishness of investment recovery in the aftermath of the GFC may have exacerbated these differences. During 2012-19, gross fixed capital formation declined in 13% of large European TL2 regions.[15] Within-countries disparities are particularly high in East and Southern European countries. For instance, in the Italian region of Calabria, investment growth during 2012-19 has been -4.8%, while it has been positive and equal to 3.6% for the Autonomous Province of Bozen-Bolzano. Similarly, in the Hungarian region of Western Transdanubia, it has been 1.5%, compared to nearly 13% in the capital city TL2 region of Budapest (Figure 3.9).

Figure 3.9. Regional disparities in investment growth are particularly large in East and Southern European countries

Within-country differences at the TL2 level in investment growth during 2012-19



Note: Investment is measured by gross fixed capital formation. The cumulative growth rate in investment is calculated between 2012 and 2019, and next annualised.
Source: Knowledge Centre for Territorial Policies (2022[33]), *ARDECO Database*, https://knowledge4policy.ec.europa.eu/territorial/ardeco-database_en.

Managing the gains and risks of trade integration

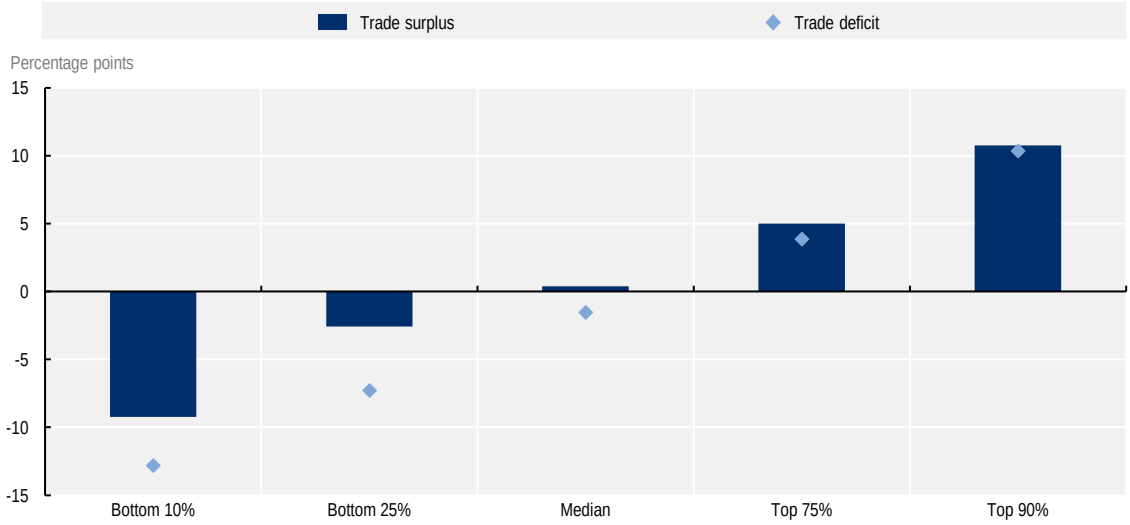
The specialisation of countries and regions prior to greater trade integration shapes the gains and losses associated with it. For example, there is some evidence that United States (US) and German regions specialised in industries exposed to import competition lost jobs during the process of trade integration with the People's Republic of China and East European countries. Production of apparel and leather goods in the United States, for example, was less than one-sixth in volume terms in 2022 than it was in 2000.[16] In contrast, regions specialised in export-exposed industries, such as car manufacturing or chemical production in Germany for example, on average, gained jobs and grew in productivity (Dauth, Findeisen and Suedekum, 2014[34]; Autor, Dorn and Hanson, 2013[35]).[17]

Customs data on goods trade collected by the OECD at the TL2 level available for a subset of 15 OECD countries allow measuring the level of regional trade openness and whether regions feature a trade deficit, i.e. the value of regional imports exceeds the value of regional exports, or vice versa a trade surplus.[18] About 52% of included regions feature a trade deficit, with the highest incidence in Latvia and Lithuania (100%), followed by the United States (73%) and the United Kingdom (67%). According to these data, export orientation is especially important among regions growing more slowly. During 2001-19, GDP per

capita grew on average 13 percentage points in the bottom 10% growing regions with a trade deficit, less than the country average. However, the GDP per capita growth gap with the national average was only 9 percentage points in the bottom 10% growing regions featuring a trade surplus (Figure 3.10).

Figure 3.10. Regions that grew less than the national average had larger trade deficits

Percentiles of the difference between TL2 and country-level GDP per capita growth during 2001-19 by regional trade surplus/deficit status



Note: Export/import data on goods trade are averaged at the TL2 level during 2010-19. Regions with a trade surplus are those regions where average exports during 2010-19 exceed average imports during 2010-19; regions with a trade deficit are those regions where the opposite is true. A unique value for regional imports and exports was obtained by estimating a regression of region/year imports or exports on time dummies. Different percentiles of the distribution of the difference between TL2 and country-level growth in GDP per capita during 2001-19 by trade surplus or trade deficit status are reported on the vertical axis. Countries included: Austria, Belgium, Germany, Greece, Spain, France, Italy, Korea, Latvia, Lithuania, Portugal, Slovenia, Sweden, the United Kingdom and the United States.
Source: Based on data from OECD (2022[7]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/ and OECD customs data.

StatLink https://stat.link/d6ify8

Excessive sectoral specialisation can exacerbate the impact of global shocks on trade-open countries and regions (Di Giovanni and Levchenko, 2009[36]). On the one hand, sectoral specialisation gives rise to localisation economies, i.e. productivity gains from bringing more firms in the same or similar sectors together, thus boosting a region's competitiveness in the global economy. On the other hand, it can increase regions' exposure to global shocks (Carvalho and Gabaix, 2013[37]).

Rural regions often struggle more than other regions to seize the gains from trade integration in more complex value chains. First, rural regions suffer from greater remoteness and are thus less well-positioned to integrate (Krawchenko, 2018[38]). Second, rural regions are more exposed to import competition as they feature on average a greater incidence of low-skilled jobs that tend to have a higher degree of substitutability with jobs in countries with lower labour costs.

The increasing fragmentation of production into global value chains (GVCs) has added new opportunities and challenges to trade integration. Lead countries in GVCs such as Germany and the United States concentrate knowledge activities in some of their large metropolitan regions next to legacy industries in their non-metropolitan regions (Kemeny and Storper, 2020[39]). Other countries with cost or location advantages integrated into GVCs, such as East European countries, rapidly expanded their manufacturing

base and eventually started their own transition towards knowledge activities (Navaretti and Markovic, 2021[40]). Data from before the COVID-19 pandemic show that regions characterised by faster growth in exports with higher domestic value-added content – a key metric of participation in GVCs – also managed to stay at the forefront of the productivity frontier or to reduce their gap with more productive regions (OECD, 2018[6]), whilst firms in regions that were neither resource- nor skill-rich in advanced economies were less able to capitalise on the benefits of GVC integration (Iammarino, Rodríguez-Pose and Storper, 2019[41]).

The challenges posed by sectoral specialisation and global shocks are amplified by the greater degree of specialisation induced by GVCs. The disruptions of GVCs experienced during the COVID-19 pandemic and the volatility triggered by the recent turmoil in global energy markets have led to increased calls for reshoring or nearshoring of value chains. However, the debate on the benefits and costs of trade integration of GVC participation requires a balanced approach: according to recent quantitative evidence based on OECD countries, at the national level, re- or nearshoring to reduce volatility can induce higher overall production costs and lower international competitiveness, outweighing the benefits from reduced volatility (OECD, 2021[42]).

Participation in global trade via foreign direct investment (FDI) must also find its balance. Regions typically gain from FDI (Lembcke and Wildnerova, 2020[43]). However, increasing economic integration and the rise in global financial flows have not always generated equal opportunities across regions, potentially exacerbating regional disparities. Regions equipped with more favourable “locational factors”, such as the availability of suitable infrastructure, the proximity to a local university ecosystem (OECD, 2021[44]) or the presence of institutional bridges favouring the formation of supplier links with local firms (Crescenzi, Harman and Arnold, 2018[45]) manage to attract larger volumes (and better quality) of FDI than others. Furthermore, the receipt of FDI entails risks related to reversals of investors’ intentions and sudden stops. For instance, cross-country evidence shows that an increase in climate-related risks can lead to a reduction in FDI inflows (Gu and Hale, 2022[46]). The same conclusion might hold with respect to regions, given that they are not identically exposed to climate-related risks (OECD, 2022[8]).

Towards productive and green regions

Climate change has the potential to widen income inequality through different channels. More frequent extreme events will have a stronger impact on some regions and their economies than others. Furthermore, policy action encouraging fossil fuels phasing out and the transition to green technologies can result in job losses concentrated in a few, especially vulnerable, regions.

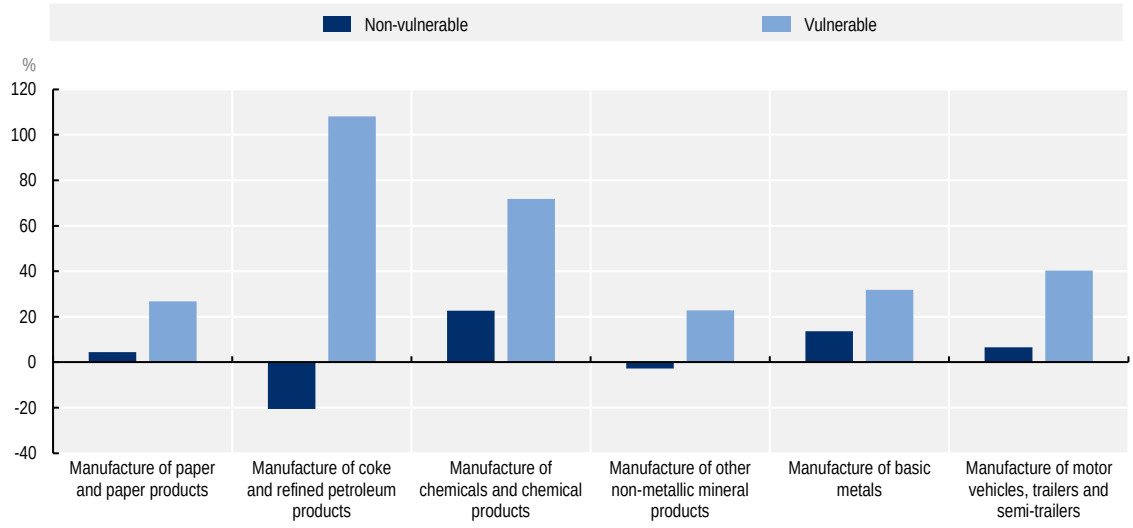
Extreme weather events do not affect all regions in the same way. For instance, in Australia, the number of additional days of strong heat stress in 2017-21 compared to 1981-2010 ranges from 0 to over 60 days in the Northern Territory TL2 region. Similarly, the share of the population exposed to river floods is 60% in the Mexican region of Tabasco, against less than 30% for the rest of the country (OECD, 2022[8]). The damage due to coastal flooding is estimated to be vastly heterogeneous, with coastal areas, particularly in Southeast Asia, experiencing losses as high as 10% of real GDP by 2200 (Desmet et al., 2021[47]). Rural regions face larger potential losses compared to urban ones, due to the higher incidence of the agricultural sector and its greater vulnerability to extreme weather events.

Rural regions play an important role in the transition towards climate neutrality. Per capita greenhouse gas (GHG) emissions declined more slowly during 1990-2018 in rural compared to urban regions, especially in those located far away from metropolitan regions or specialised in natural resource extraction (OECD, 2020[48]; 2021[49]). Rural regions also tend to be more dependent on cars. However, they also feature greener electricity production. In 2019, more than 50% of electricity generation in non-metropolitan remote regions came from renewables, compared to less than 20% in large metropolitan regions (OECD, 2022[8]).

Climate mitigation policy can contribute to the widening of income inequality if not accompanied by policies effectively supporting vulnerable regions (OECD, 2023[50]).[19] Regions featuring high per capita emissions combined with a high employment share in highly polluting manufacturing sectors are more vulnerable to the risks posed by climate mitigation policies. While being concentrated in Central Europe, most European countries feature one or more vulnerable regions. Climate-induced vulnerability often overlaps with other types of socio-economic weaknesses, such as a lower-than-average GDP per capita or tertiary education share. Climate mitigation policies threaten some of the best available jobs in these regions, where highly polluting manufacturing industries on average provide for better-productive and better-paid jobs compared to other sectors (Figure 3.11).

Figure 3.11. Highly polluting manufacturing sectors pay higher wages compared to the regional average in vulnerable regions

Wage difference in selected sectors compared to the regional average by vulnerability status of regions, 2018



Note: Data refer to NUTS 2 regions. Vulnerable regions are defined using employment shares and per capita emissions in each of the corresponding key polluting manufacturing sectors. See OECD (2023[50]) for a more detailed explanation of how vulnerable regions are defined.
Source: Eurostat Structural Earnings Survey.

StatLink https://stat.link/oa5l0y

Adapting to climate mitigation regulations will have asymmetric impacts on firms too. Firms with a more solid financial situation are better able to cope with the introduction of economic and regulatory costs seeking to correct the negative externalities associated with polluting technologies. Smaller firms with fewer resources to make the investments necessary to "green" their production face a higher risk of losing competitiveness. These firms tend to be concentrated in vulnerable regions (OECD, 2023[50]). Productivity growth in green technologies can help as it makes technologies more effective and reduces the cost of entry for firms.

Finally, place-based climate mitigation policy must consider that jobs at risk of disappearing or expected to see a substantial revision of their task content in favour of green tasks are not evenly distributed across regions. Whilst, policies undertaken to mitigate the negative impact of climate change will induce job reallocation in the order of magnitude of 1.5% of aggregate employment (OECD, 2017[51]), this figure understates the real impact on labour markets as it does not account for those jobs that will also need at least some retraining and reskilling efforts. Metropolitan regions seem to be further ahead in the green transition as they already feature a high and increasing share of green jobs and a low share of polluting jobs (at risk of disappearing) (OECD, 2023[52]).

Annex 3.A. Supplementary figures and tables

Annex Table 3.A.1. Country-level employment in different sectors, millions

	Agriculture		Industry		Tradeable services		Non-tradeable services	
	2001	2019	2001	2019	2001	2019	2001	2019
Austria	0.23	0.15	0.70	0.72	0.59	0.87	2.26	2.77
Belgium	0.08	0.06	0.69	0.56	0.83	1.25	2.57	2.99
Czech Republic	0.21	0.16	1.48	1.57	0.60	0.83	2.58	2.86
Denmark	0.09	0.07	0.42	0.32	0.43	0.56	1.84	2.03
Estonia	0.04	0.02	0.15	0.14	0.06	0.11	0.34	0.39
Finland	0.13	0.09	0.47	0.38	0.34	0.53	1.41	1.65
France	0.91	0.75	3.72	2.92	5.17	6.51	16.23	18.14
Germany	0.72	0.60	8.38	8.34	6.82	9.16	23.84	26.96
Greece	0.64	0.50	0.54	0.43	0.45	0.61	2.75	3.13
Hungary	0.27	0.19	1.13	0.98	0.44	0.84	2.28	2.68
Italy	1.06	0.93	4.88	4.28	3.58	4.63	14.17	15.60
Latvia	0.14	0.07	0.18	0.14	0.10	0.15	0.53	0.54
Lithuania	0.24	0.09	0.27	0.25	0.09	0.18	0.77	0.86
Netherlands	0.24	0.20	1.00	0.86	2.18	2.67	4.98	5.77
New Zealand	0.13	0.16	0.48	0.29	0.26	0.51	0.99	1.66
Poland	2.69	1.53	3.23	3.96	1.17	2.07	6.88	8.84
Portugal	0.64	0.40	1.07	0.84	0.55	0.81	2.88	2.88
Slovak Republic	0.11	0.07	0.57	0.59	0.23	0.40	1.12	1.37
Slovenia	0.10	0.07	0.27	0.24	0.13	0.19	0.43	0.53
Spain	0.98	0.79	3.03	2.26	2.23	3.63	11.22	13.41
Sweden	0.11	0.10	0.79	0.64	0.74	1.04	2.75	3.33
United Kingdom	0.36	0.40	3.90	3.04	6.40	8.74	18.32	21.57
United States	1.38	1.42	8.81	10.57	20.05	23.46	90.72	107.27

Source: OECD (2022[7]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

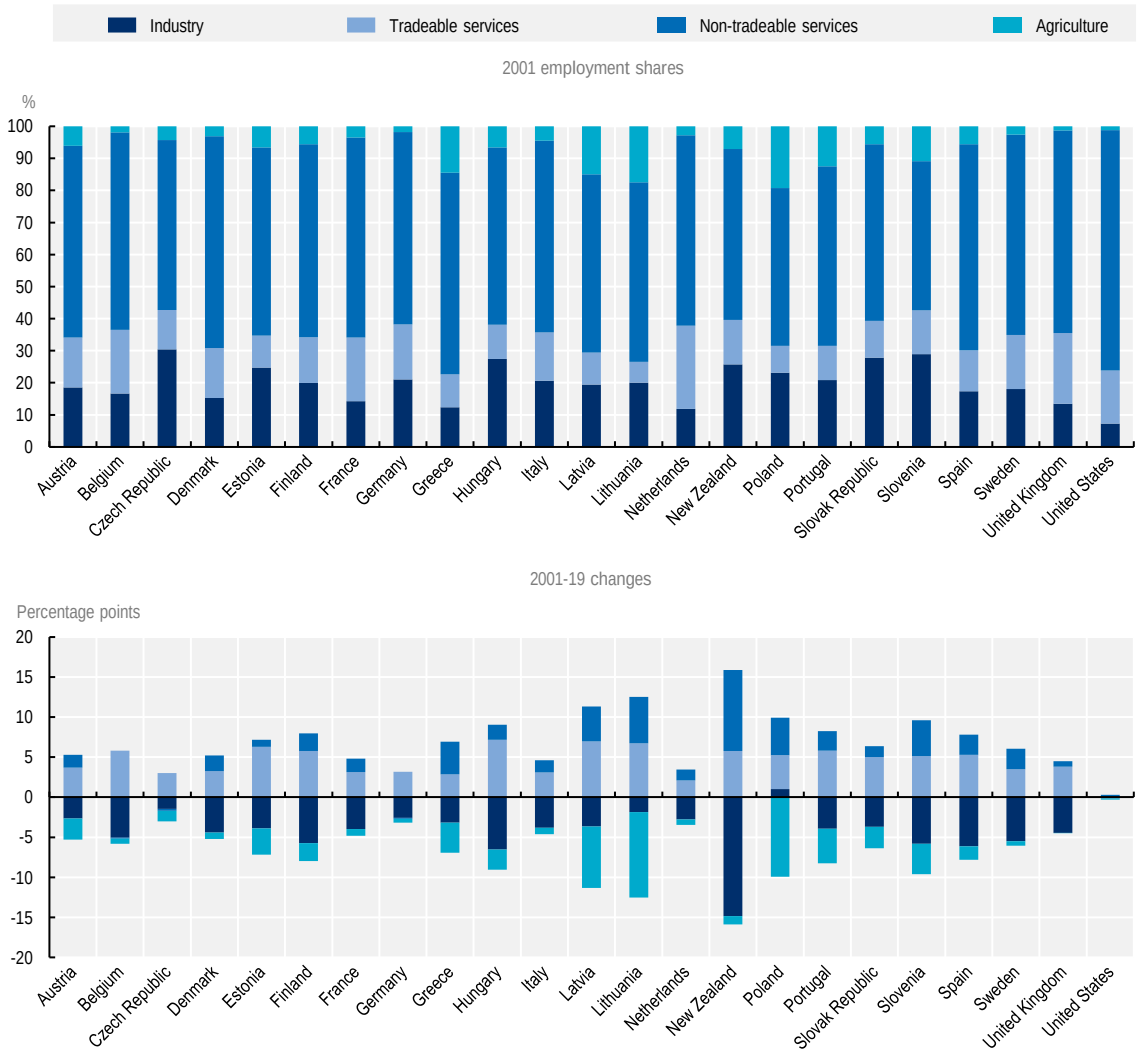
Annex Table 3.A.2. Growth rate of regional inequality, selected indicators

2001-19 yearly change in Theil index according to different metrics (%)

Country	GVA per capita	GVA per capita with equal labour productivity growth	Labour productivity
Austria	-1.34	-0.95	-0.69
Belgium	1.51	0.31	2.11
Czech Republic	1.75	-0.19	2.85
Denmark	2.06	1.05	2.54
Estonia	0.64	0.98	-0.45
Finland	-4.95	-1.88	-3.83
France	0.70	0.17	0.55
Germany	-0.87	-0.35	-1.55
Greece	-0.12	2.74	-2.09
Hungary	0.65	0.43	1.68
Italy	0.73	0.59	0.21
Latvia	-0.39	2.00	-3.27
Lithuania	2.11	4.32	-0.93
Netherlands	-0.89	-0.66	-1.01
New Zealand	-2.38	-0.09	-3.24
Poland	1.75	4.05	-3.10
Portugal	-2.95	0.44	-4.10
Slovak Republic	0.54	-0.40	2.27
Slovenia	1.78	3.21	-3.71
Spain	-1.15	-1.89	1.04
Sweden	1.34	-0.02	1.73
United Kingdom	0.79	0.50	2.54
United States	2.94	0.47	2.59

Note: Data for the United Kingdom start in 2004 (Northern Ireland missing due to boundary changes). According to the equal labour productivity growth scenario, regional labour productivity is assumed to grow at the same rate as the national one in each region. Inequality as measured by the Theil index in 2001 is obtained as the average of the values in 2001 and 2002; inequality in 2019 is obtained as the average of the values for 2018 and 2019. Countries are sorted in ascending order of GVA per capita disparities 2001-19 percentage change. Labour productivity is calculated as GVA/employment, where employment corresponds to employment by place of work.
Source: OECD (2022[7]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

Annex Figure 3.A.1. 2001 employment shares and 2001-19 changes



Note: Shares in 2001 are obtained by averaging the values for 2001 and 2002; shares for 2019 are obtained by averaging values for 2018 and 2019. The industrial sector includes NACE group B-E, while tradeable services include NACE groups J, K, L, M-N. The category "Non-tradeable services" comprises the remaining sectors.
Source: OECD (2022[7]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

StatLink https://stat.link/5dpj3u

Annex 3.B. Hysteresis and the effect of the global financial crisis

Adverse economic shocks can have permanent negative impacts on regions and countries. For instance, in 2018, about half of TL2 regions still had higher unemployment rates than in 2008 (OECD, 2020[14]). "Hysteresis" refers to a situation where an adverse economic shock to a country or region permanently and negatively affects the path of the economy. Martin (2012[53]) distinguishes three types of hysteresis: economic shocks followed by a permanent decline in the level of economic activity; economic shocks followed by a permanent decline in the growth rate; and economic shocks followed by a permanent decline in the level and growth rate.

Based on GDP per capita data, a substantial number of countries have displayed hysteresis in the aftermath of the 1991-92 and 2008-12 (double) recessions.[1] Post 2008-12 recession, several countries, such as France, Greece and Italy, have featured hysteresis in the level of GDP per capita, in contrast with zero countries after the 1991-92 recession. Further, less than half of the countries – among those with data available for both expansion periods – have managed to recoup the growth rate of GDP per capita after both recessions (Annex Table 3.B.1).

Annex Table 3.B.1. Hysteresis has become more common across OECD countries over time

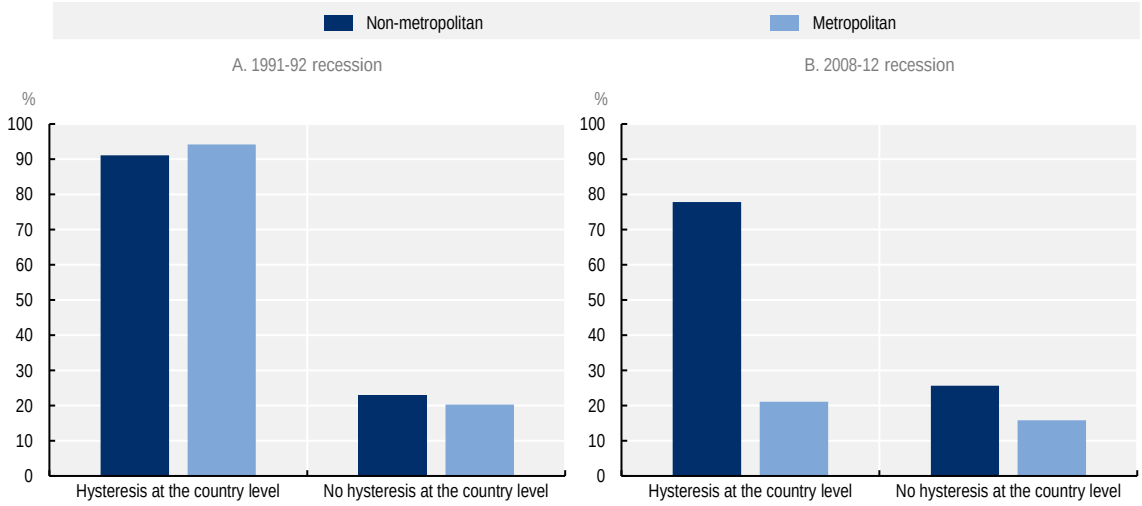
	Hysteresis – both level and growth rate	Hysteresis – only level	Hysteresis – only growth rate	No hysteresis
1991-92 recession			CZE, FIN, POL, SWE	AUT, BEL, DEU, DNK, ESP, FRA, ITA, NLD, NOR, PRT
2008-12 recession		FRA, GRC, ITA	CZE, HUN, JPN, NOR, PRT	AUT, BEL, DEU, DNK, EST, ESP, FIN, GBR, KOR, LTU, LVA, NLD, NZL, POL, SWE, SVN, SVK, TUR, USA

Note: Countries displaying growth rate hysteresis are those countries that during the expansion phase following a given recession featured an average growth rate lower than the one featured during the previous expansion. Countries displaying hysteresis in the level are those countries for which the maximum level attained during the expansion phase following a given recession was lower than the one attained during the previous expansion. Following Tsvetkova (forthcoming[54]), 1983-91, 1994-2007, 2010-11, 2013-19 are defined as expansion phases, 1992--93, 2008-09, 2011-12 are defined as recession periods. For the purpose of this analysis, the 2007-09 and 2011-12 recessions have been bundled together. The growth rate in the employment rate corresponds to the annualised absolute change, rather than the relative one.
Source: Based on Knowledge Centre for Territorial Policies (2022[33]), *ARDECO Database*, https://knowledge4policy.ec.europa.eu/territorial/ardeco-database_en.

Unlike the 1991-92 recession, a relatively larger share of non-metropolitan regions struggled to recover from the GFC compared to metropolitan regions, driving hysteresis at the country level. During the 1991-92 recession, the share of the population living in TL3 regions experiencing sluggishness in GDP per capita growth in countries featuring hysteresis was approximately 90% for both metropolitan and non-metropolitan regions (Annex Figure 3.B.1, Panel A). In contrast, during the GFC, the share for non-metropolitan regions stayed about the same, while the one for metropolitan regions dropped to 20% (Annex Figure 3.B.1, Panel B).

Annex Figure 3.B.1. The global financial crisis has increased on average within-country disparities

Population in non-metropolitan and metropolitan TL3 regions experiencing post-recession hysteresis in the growth rate of GDP per capita by recession and whether the country experienced hysteresis as a whole



Note: For each recession, the share of the population living in TL3 regions that experienced hysteresis in the growth rate of GDP per capita during the corresponding recovery period is shown. Regions are grouped by type of TL3 regions and whether the country as a whole also has experienced hysteresis in the aggregate GDP per capita growth rate. A country or a region experiences hysteresis in the growth rate of GDP per capita after a given period of recession if it does not manage to attain, not even once during the ensuing recovery period, the highest growth rate experienced during the previous expansionary phase.
Source: Based on Knowledge Centre for Territorial Policies (2022[33]), *ARDECO Database*, https://knowledge4policy.ec.europa.eu/territorial/ardeco-database_en.

StatLink https://stat.link/cg7ba3

Annex 3.C. Rising dissimilarities in the local importance of tradeable sectors

Reallocation of employment towards high-productivity sectors has proceeded at different speeds across regions. The coefficient of variation of tradeable sectors' employment shares, $share_i$, calculated across regions i within a certain country measures how strong differences in the importance of these sectors are at the regional level:

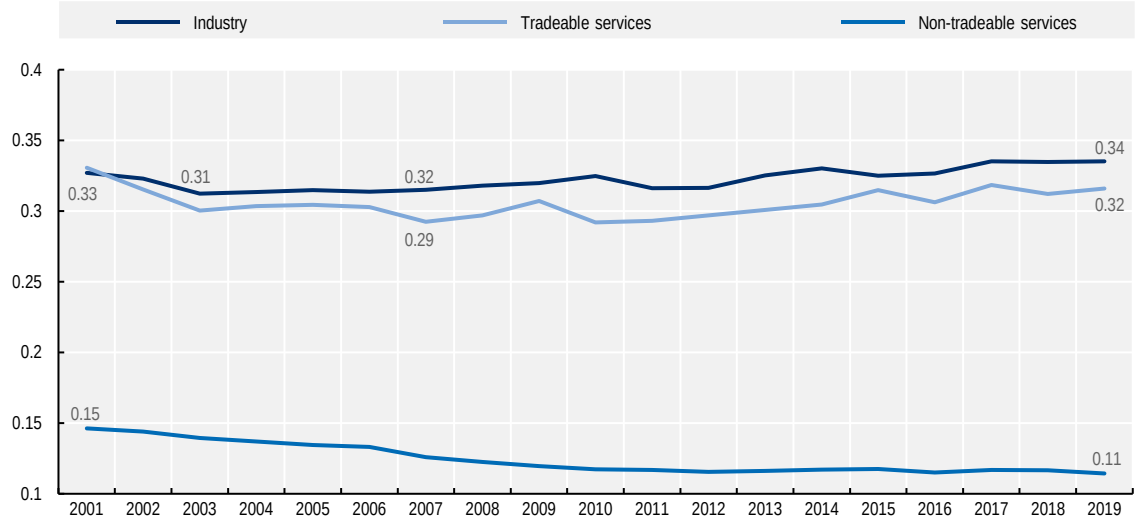
$$CV = \frac{\sigma(share_i)}{\mu(share_i)}$$

where σ is the standard deviation and μ corresponds to the mean of employment shares.

This coefficient is typically higher in tradeable sectors since firms operating in these sectors can pursue more freely location advantages compared to firms operating in non-tradeable industries given the tradeable nature of goods and services produced. In 2019, the coefficient of variation in tradeable sectors was nearly three times as high as in the non-tradeable sector across OECD countries (Annex Figure 3.C.1). To give a measure of this difference, in 2019, only 5% of employees in the Portuguese region of the Algarve worked in the tradeable goods sector, as opposed to 44% in the manufacturing-dense Ave region in northern Portugal – a ninefold difference. In contrast, the employment share in the non-tradeable sector ranged from 65% to 37% across regions, less than a twofold difference.

Annex Figure 3.C.1. Employment shares in high-productivity sectors have become more dispersed

Country-specific coefficient of variation of TL3-level employment shares by sector, average across OECD countries



Note: The industrial sector includes NACE group B-E, while tradeable services include NACE groups J, K, L, M-N. For Austria, Germany, Poland, Spain and the United Kingdom, tradeable services include G-J, K, L, M-N. Data for the United Kingdom start in 2004 (Northern Ireland missing due to boundary changes). Data for the agricultural sector are missing for the United Kingdom. Data from the United States are not included in the analysis due to the low quality of employment data by sector/TL3 region.
Source: OECD (2022[7]), *OECD Regional Statistics (database)*, https://www.oecd.org/regional/regional-statistics/.

StatLink https://stat.link/m6r1q8

Especially between 2011 and 2019, OECD regions have become more dissimilar in terms of the importance that tradeable sectors play at the local level. The incentives for regions and firms to specialise in response to the mounting competition induced by rising global economic integration have likely concurred with shaping this trend for the industrial sector. On the other hand, differences between regions in terms of the local importance of tradeable services first declined, thanks to the maturing of ICT and their spatial diffusion. The decline was driven to a halt and reverted by the GFC, owing also to the inability of certain regions to recoup their pre-crisis employment levels.

References

Acemoglu, D. and P. Restrepo (2020), "Robots and jobs: Evidence from US labor markets", *Journal of Political Economy*, Vol. 128. [55]

Adler, M. et al. (2020), "Roads, market access and regional economic development", *OECD Regional Development Papers*, No. 06, OECD Publishing, Paris, https://doi.org/10.1787/8b9eca17-en. [56]

Ahrend, R. et al. (2022), "Changes in the geography housing demand after the onset of COVID-19: First results from large metropolitan areas in 13 OECD countries", *OECD Economics Department Working Papers*, No. 1713, OECD Publishing, Paris, https://doi.org/10.1787/9a99131f-en. [20]

Ahrend, R. et al. (2017), "What makes cities more productive? Evidence from five OECD countries on the role of urban governance", *Journal of Regional Science*, Vol. 57/3, pp. 385-410, https://doi.org/10.1111/jors.12334. [5]

Autor, D., D. Dorn and G. Hanson (2013), "The China syndrome: Local labor market effects of import competition in the United States", *American Economic Review*, Vol. 103/6, pp. 2121-2168. [35]

Autor, D. et al. (2020), "The fall of the labor share and the rise of superstar firms", *The Quarterly Journal of Economics*, Vol. 135/2, pp. 645-709. [24]

Baldwin, R. and J. Dingel (2021), *Telemigration and development: On the offshorability of teleworkable jobs*. [21]

Baumol, W. (1967), "American economic association macroeconomics of unbalanced growth: The anatomy of urban crisis", *The American Economic Review*, Vol. 57/3, pp. 415-426. [9]

Brynjolfsson, E. and A. McAfee (2011), "How the digital revolution is accelerating innovation, driving productivity, and irreversibly transforming employment and the economy". [28]

Carvalho, V. and X. Gabaix (2013), "The great diversification and its undoing", *American Economic Review*, Vol. 103/5, pp. 1697-1727. [37]

Corrado, C. et al. (2021), "New evidence on intangibles, diffusion and productivity", *OECD Science, Technology and Industry Working Papers*, No. 2021/10, OECD Publishing, Paris, https://doi.org/10.1787/de0378f3-en. [57]

Crescenzi, R., O. Harman and D. Arnold (2018), "Move on up! Building, embedding and reshaping global value chains through investment flows: Insights for regional innovation policies", Background paper for an OECD/EC Workshop on 21 September 2018 within the workshop series "Broadening innovation policy: New insights for regions and cities", OECD, Paris. [45]

Criscuolo, C. et al. (2021), "The firm-level link between productivity dispersion and wage inequality: A symptom of low job mobility?", *OECD Economics Department Working Papers*, No. 1656, OECD Publishing, Paris, https://doi.org/10.1787/4c6131e3-en. [11]

Dauth, W., S. Findeisen and J. Suedekum (2014), "The rise of the east and the far east: German labor markets and trade integration", *Journal of the European Economic Association*, Vol. 12/6. [34]

Davis, D., E. Mengus and T. Michalski (2022), "Labor market polarization and the great divergence: Theory and evidence", *NBER Working Paper*, No. 26955. [17]

Desmet, K. et al. (2021), "Evaluating the economic cost of coastal flooding", *American Economic Journal: Macroeconomics*, Vol. 13/2, pp. 444-86. [47]

Di Giovanni, J. and A. Levchenko (2009), "Trade openness and volatility", *The Review of Economics and Statistics*, Vol. 91. [36]

Eckert, F., S. Ganapati and C. Walsh (2022), "Urban-biased growth", *NBER Working Paper*, No. 30515. [12]

Florida, R., M. Storper and A. Rodríguez-Pose (2021), "Cities in a post-COVID world", *Urban Studies*. [22]

Giannone, E. (2021), "Skill-biased technical change and regional convergence". [16]

Gu, G. and G. Hale (2022), "Climate risks and FDI", *NBER Working Paper*, No. 30452. [46]

Iammarino, S., A. Rodríguez-Pose and M. Storper (2019), "Regional inequality in Europe: Evidence, theory and policy implications", *Journal of Economic Geography*, Vol. 19/2, pp. 273-298. [41]

Karahan, F. et al. (2021), *Demographic Origins of the Startup Deficit*, Federal Reserve Bank of New York Staff Reports, no. 888. [26]

Kemeny, T. and M. Storper (2020), "Superstar cities and left-behind places: Disruptive innovation, labor demand, and interregional inequality". [39]

Knowledge Centre for Territorial Policies (2022), *ARDECO Database*, https://knowledge4policy.ec.europa.eu/territorial/ardeco-database_en. [33]

Krawchenko, T. (2018), "RURAL 3.0.: A framework for rural development", Policy note. [38]

Lembcke, A. and L. Wildnerova (2020), "Does FDI benefit incumbent SMEs? FDI spillovers and competition effects at the local level", *OECD Regional Development Working Papers*, No. 2020/02. [43]

Luca, D., C. Özgüzel and Z. Wei (forthcoming), "The new geography of remote jobs? Evidence from Europe", *OECD Regional Development Papers*, OECD Publishing, Paris. [18]

Mano, R. and M. Castillo (2015), "The level of productivity in traded and non-traded sectors for a large panel of countries", International Monetary Fund. [10]

Martin, R. (2012), "Regional economic resilience, hysteresis and recessionary shocks", *Journal of Economic Geography*, Vol. 12/1, pp. 1-32. [53]

Moretti, E. (2012), *The New Geography of Jobs*, Houghton Mifflin Harcourt. [15]

Navaretti, G. and B. Markovic (2021), "Place-based policies and the foundations of productivity in the private sector: What are we building on?", OECD-EC high-level expert workshop 'Productivity Policy for Places", OECD, Paris. [40]

OECD (2023), *Job Creation and Local Economic Development 2023: Bridging the Great Green Divide*, OECD Publishing, Paris, https://doi.org/10.1787/21db61c1-en. [52]

OECD (2023), *Regional Industrial Transitions to Climate Neutrality*, OECD Regional Development Studies, OECD Publishing, Paris, https://doi.org/10.1787/35247cc7-en. [50]

OECD (2022), *Financing SMEs and Entrepreneurs 2022: An OECD Scoreboard*, OECD Publishing, Paris, https://doi.org/10.1787/e9073a0f-en. [32]

OECD (2022), *OECD Regional Statistics (database)*, OECD, Paris, https://www.oecd.org/regional/regional-statistics/. [7]

OECD (2022), *OECD Regions and Cities at a Glance 2022*, OECD Publishing, Paris, https://doi.org/10.1787/14108660-en. [8]

OECD (2022), *Unlocking Rural Innovation*, OECD Rural Studies, OECD Publishing, Paris, https://doi.org/10.1787/9044a961-en. [2]

OECD (2021), "Global value chains: Efficiency and risks in the context of COVID-19", *OECD Policy Responses to Coronavirus*, OECD, Paris. [42]

OECD (2021), *OECD Regional Outlook 2021: Addressing COVID-19 and Moving to Net Zero Greenhouse Gas Emissions*, OECD Publishing, Paris, https://doi.org/10.1787/17017efe-en. [49]

OECD (2021), "Regions and globalisation: An original approach to regional internationalisation and its application to the case of France", *OECD Regional Development Papers*, No. 20, OECD Publishing, Paris, https://doi.org/10.1787/75dae685-en. [44]

OECD (2021), *Understanding Firm Growth: Helping SMEs Scale Up*, OECD Studies on SMEs and Entrepreneurship, OECD Publishing, Paris, https://doi.org/10.1787/fc60b04c-en. [23]

OECD (2020), *Broad-based Innovation Policy for All Regions and Cities*, OECD Regional Development Studies, OECD Publishing, Paris, https://doi.org/10.1787/299731d2-en. [30]

OECD (2020), *Job Creation and Local Economic Development 2020: Rebuilding Better*, OECD Publishing, Paris, https://doi.org/10.1787/b02b2f39-en. [14]

OECD (2020), *OECD Regions and Cities at a Glance 2020*, OECD Publishing, Paris, https://doi.org/10.1787/959d5ba0-en. [48]

OECD (2020), *Rural Well-being: Geography of Opportunities*, OECD Rural Studies, OECD Publishing, Paris, https://doi.org/10.1787/d25cef80-en. [3]

OECD (2020), "Start-ups in the time of COVID-19: Facing the challenges, seizing the opportunities", *OECD Policy Responses to Coronavirus (COVID-19)*, OECD Publishing, Paris, https://doi.org/10.1787/87219267-en. [25]

OECD (2019), *Under Pressure: The Squeezed Middle Class*, OECD Publishing, Paris, https://doi.org/10.1787/689afed1-en. [13]

OECD (2018), *Productivity and Jobs in a Globalised World: (How) Can All Regions Benefit?*, OECD Publishing, Paris, https://doi.org/10.1787/9789264293137-en. [6]

OECD (2017), *Investing in Climate, Investing in Growth*, OECD Publishing, Paris, https://doi.org/10.1787/9789264273528-en. [51]

OECD (2016), *OECD Regional Outlook 2016: Productive Regions for Inclusive Societies*, OECD Publishing, Paris, https://doi.org/10.1787/9789264260245-en. [4]

OECD (2015), *The Metropolitan Century: Understanding Urbanisation and its Consequences*, OECD Publishing, Paris, https://doi.org/10.1787/9789264228733-en. [1]

OECD (forthcoming), *Challenges in Regional Innovation Diffusion: A Self-assessment Toolkit for Regions*, OECD Publishing, Paris. [31]

Paunov, C. et al. (2019), "On the concentration of innovation in top cities in the digital age", *OECD Science, Technology and Industry Policy Papers*, No. 85, OECD Publishing, Paris, https://doi.org/10.1787/f184732a-en. [29]

Ramani, A. and N. Bloom (2021), "The donut effect of Covid-19 on cities", *NBER Working Paper*, No. 28876. [19]

Rubinton, H. (2020), "The geography of business dynamism and skill biased technical change", *FRB St. Louis Working Paper*, No. 2020-20. [27]

Tsvetkova, A. (forthcoming), "Forty years of labour markets resilience: Is productivity the secret ingredient", *OECD Local Employment and Economic Development (LEED) Papers*, OECD Publishing, Paris. [54]

Notes

[1] In this chapter, the expression "high- (low-) productivity" is used to refer to regions with productivity above (below) the country average.

[2] Labour productivity is measured in terms of regional GVA per worker, expressed in USD at constant prices and constant PPP (2015 base year).

[3] Data based on 23 OECD countries: AUT, BEL, CZE, DEU, DNK, ESP, EST, FIN, FRA, GBR, GRC, HUN, ITA, LTU, LVA, NLD, NZL, POL, PRT, SVK, SVN, SWE and USA.

[4] Greece and Italy are the only two OECD countries where productivity growth at the national level was negative.

[5] See Annex Table 3.A.2 for figures on the evolution of labour productivity inequality.

[6] For the analysis in this chapter, TL3 regions belonging to the same metropolitan area have been combined to avoid having changes in inequalities reflecting variation in commuting patterns between core and peripheral TL3 regions.

[7] See Annex Table 3.A.2 for figures on the evolution of GVA per capita inequality under different assumptions.

[8] Tradeable sectors include: the tradeable goods sector, or industrial sector, and the tradeable services sector. Industry includes: Mining and quarrying (B), Manufacturing (C), Electricity, gas, steam and air conditioning supply (D) and Water supply; sewerage; waste management and remediation activities (E) NACE macro sectors. Tradeable services include: Information and communication (J), Financial and

insurance activities (K), Real estate activities (L), Professional, scientific and technical activities (M), Administrative and support service activities (N). Non-tradeable services include: Wholesale and retail trade; repair of motor vehicles and motorcycles (G), Transporting and storage (H), Accommodation and food service activities (I), Public administration and defence; compulsory social security (O), Education (P) and Human health and social work activities (Q), Arts, entertainment and recreation (R), Other services activities (S), Activities of households as employers; undifferentiated goods - and services - producing activities of households for own use (T) and Activities of extraterritorial organisations and bodies (U).

[9] The decline in relative terms was mirrored by a decline in absolute terms, with a total loss of about 3.5 million jobs across OECD countries, and Southern European countries (Greece, Italy, Portugal and Spain) suffering the largest employment losses in relative terms (20% cumulated employment decline during 2001-19 against an OECD average of 9%). The decline partly reflects outsourcing of ancillary activities (e.g. cleaning, security, accountancy, etc).

[10] See Annex Table **3.A**.1 for figures on country-level employment in the different sectors.

[11] See Annex 3.C for a more in-detail discussion of the evolution of regional shares in tradeable sectors in OECD countries.

[12] For the sake of this exercise, a region is classified as top 50% if it belongs to the top half productive regions within the country for at least three years between 2004 and 2007. Conversely, it is classified as bottom 50%.

[13] Using data on US local labour markets, Acemoglu and Restrepo (2020[55]), for example, find that 1 more robot per 1 000 workers reduced the employment-to-population ratio by 0.2 percentage points and wages by 0.42%.

[14] The rise of intangibles in production presents also some challenges. For instance, industries characterised since the early 2000s by the strongest increase in intangible capital accumulation are also those where differences in firm productivity went up faster (Corrado et al., 2021[57]).

[15] Gross fixed capital formation comprises fixed asset acquisitions minus disposals by resident producers.

[16] Based on Industrial Production: Manufacturing: Non-Durable Goods: Apparel and Leather Goods (NAICS = 315.6) (IPG315A6A), FRED, St. Louis FED (accessed 06 June 2023).

[17] Differences in sectoral specialisation matter also for the impact of domestic – not just global – trade integration on within-country disparities. For intermediate levels of transport costs, the development of a new transport infrastructure spurring domestic trade integration can trigger concentration of economic activity in regions already specialised in manufacturing due to economies of scale experienced by firms when locating close to larger markets. Estimates of the impact of road network expansion in European regions during 1990-2012, for instance, highlight large differences in the amount of investment that would have been required to obtain similar gains across regions (Adler et al., 2020[56]).

[18] Trade openness is defined as the ratio between the sum of imports and exports divided by regional GDP. These data refer to 182 TL2 regions located in 15 OECD countries and span the period between 2010 and 2019.

[19] Traditionally considered highly polluting sectors are coke and oil refining, chemicals, basic metals, in particular steel and aluminium, non-metallic minerals, in particular cement, paper and pulp, motor vehicles (OECD, 2023[50]).

4 The future(s) of OECD regions: Scenarios 2045

The chapter discusses how readiness to respond to change is critical to secure prosperity and social cohesion in the next 20 years. The first section focuses on the value of leveraging strategic foresight to manage transnational and intergenerational risks related to megatrends and shocks and to future-proof regional development policy. The second proposes three scenarios for OECD countries and regions in 2045 and what these different pathways could imply for regional inequalities and policies. A final section sets out ways forward to future-proof regional development.

In Brief

- Around the world, megatrends – including climate, demographic and technological change – have emerged with the potential to profoundly transform societies in the coming decades. These megatrends will result in widely different trajectories across regions, creating, in turn, different public investment needs, challenges and opportunities and reinforcing the importance of place-based foresight and responses.
- Recent crises – from the COVID-19 pandemic to Russia's war of aggression against Ukraine – have increased awareness of vulnerabilities to shocks and the need for preparedness and resilience. The significant costs of managing the consequences of increasingly regular crises have reinforced the need to better anticipate, understand and price risks within global, national and regional systems, including those from ongoing megatrends and potential new ones such as artificial intelligence (AI).
- Strategic foresight is a critical tool to explore possible future changes and their implications for decision making today. Territorial foresight in particular is needed to address asymmetric risks of shocks and megatrends and to future-proof regional development policy.
- Building on a participative foresight exercise, this chapter proposes three scenarios for 2045. "The foregone region" scenario imagines the emergence of fully centralised power and top-down decision making in OECD countries, combined with less citizen engagement and growing distrust. The "hyper-connected region" scenario sees regional and national authorities collaborating actively together and with citizens to elaborate effective solutions to pressing challenges. "The region-state" scenario explores a power shift whereby regions form into separate, almost independent entities, each operating within their own ecosystem and competing for wealth and resources.
- Two priority avenues emerge to futureproof regional development policy and build up resilience in the next 20 years: i) building systemic and strategic approaches to fiscal systems and governance structures; and ii) developing the strategic foresight capacity of policy makers at the national and subnational levels. In addition, the scenarios reveal some strategic considerations for how the core purpose of regional development policy may need to adapt in the future.

Introduction

OECD countries and their regions are in the midst of rapid changes that are influencing how people live, work, communicate, create, produce, consume, exchange, think and decide. These social, technological, economic, environmental, political and geopolitical forces are occurring arguably faster than ever before and are profoundly reshaping human relations within societies, between places and with the natural environment. Awareness of such forces and their impacts on societies and economies is critical.

Whilst there are inevitably many uncertainties on what these widespread and long-term changes will mean for regions and regional inequalities, and how policy makers can begin to contemplate potential challenges and opportunities that may result, it is already clear that they are not on a distant horizon but already underway and reshaping the geography of opportunities today. The impact of these megatrends will differ from region to region, exacerbating risks of increasing the already large and persistent regional disparities evidenced in Chapters 2 and 3. Faced with this reality, societies and their governments cannot afford to remain passive or complacent. Adequate policy responses need to factor in this geographic diversity and act on these risks now.

COVID-19 and Russia's war of aggression against Ukraine have demonstrated that our societies can be disrupted virtually from one day to the next (as discussed in Chapter 1). The uptake of remote working and the development of e-commerce and a wide array of digital tools, though already underway, was drastically accelerated during the first few weeks of COVID-19. Disruptions to global supply chains from COVID-19 and then exacerbated by the war in Ukraine have re-opened the question of reshoring/nearshoring as a means of making economies more resilient through shorter supply chains. Yet, even before the pandemic, broader transitions – e.g. urbanisation, technological change, population ageing – were happening at a rapid pace.

As major uncertainty becomes the "new normal", regions in OECD countries are facing a renewed need to learn to better anticipate, prepare for and rebound from different crises. Addressing the challenges stemming from recent shocks, in conjunction with challenges that preceded them, such as persistent inequalities and environmental degradation, will be central to building more resilient regional economies. A key lesson from the past is that any short-term savings from not acting in anticipation can be significantly outweighed by the costs of remedial actions.

While the importance of including future thinking into policy is increasingly acknowledged, more can be done to support policy makers, especially at the regional and local levels, to think more long-term and be proactive. Actively thinking about different futures is a means to identify and learn from new threats and opportunities coming from even unthought-of impacts in order to agree upon actions today. This is particularly relevant at the regional level where actions require interaction and co-ordination across different levels of government to be successful. To support policy makers in this endeavour, this chapter recalls the global and territorial changes shaping the future. It discusses why territorial foresight is essential to future-proof decision making on regional development. It also explores three scenarios for 2045 and their implications for regional development policy, including the steps to take today to be more resilient and adaptative to whatever the future may entail.

Why think of the future(s)?

Regions in times of global changes

Around the world, several trends have emerged that have the potential to transform society in unpredictable yet profound, ways in the coming decades. Evidence of this can be found in the most significant, so-called "megatrends", a term used to refer to transformations that are unfolding across the globe in a number of countries and that can drive the global economy and society in specific directions over the coming years.

Megatrends are likely to result in meaningful, long-term changes impacting social, economic, political, environmental and technological issues. Despite their potential for high impact, they often unfold slowly and follow relatively stable trajectories over several decades.

Megatrends that are likely to impact countries around the world include demographic change (including migration), economic interconnectedness, climate change, digitalisation and urbanisation, among others. In addition to megatrends, "weak" signals of other changes and developments are emerging and could grow over time, including the role of states vs. markets or the influence of non-state actors (OECD, 2021[1]). These, on top of potentially unpredictable events and shocks, could similarly have a significant impact on the future of societies and the world order.

Megatrends create different public investment needs, challenges and opportunities across regions within countries. Reaching the objectives of the Paris Agreement on climate change will require scaling up and tailoring actions and investments to the needs and realities of different localities and regions as mitigation and adaptation challenges and opportunities differ widely across places (OECD, 2017[2]). Demographic change, particularly population ageing and shrinking, will especially affect remote and rural regions across the OECD. Digital divides are emerging across regions, limiting access to the advantages of the digital transition, establishing and intensifying divides as the pace of digitalisation accelerates. Finally, regions differ in the degree they are embedded in global value chains and migration patterns, leaving some territories more prone to the impact of global shocks (e.g. COVID supply chain bottlenecks) than others, which may demand a rethink of their regional strategies. Table 4.1 recalls some key projections related to these megatrends and their impact on regions.

Table 4.1. Key trends and projections related to megatrends and their impacts on regions

Megatrends	Key trends and projections worldwide	Impact on regions
Climate change, resource management and availability	• More than a century of burning fossil fuels as well as unequal and unsustainable energy and land use has led to global warming of 1.1°C above pre-industrial levels. This has resulted in more frequent and more intense extreme weather events that have caused increasingly dangerous impacts on nature and people in every region of the world. (IPCC, 2023[3]). • Almost half of the world's population lives in regions that are highly vulnerable to climate change. In the last decade, deaths from floods, droughts and storms were 15 times higher in highly vulnerable regions (IPCC, 2023[3]). • Greenhouse gas emissions will need to be cut by almost half by 2030, if warming is to be limited to 1.5°C (IPCC, 2023[3]).	• In metropolitan areas, climate change will increase local urban heat island effects, which, in addition to increasing local temperatures, alter small-scale meteorological processes (e.g. land-sea breeze effect) thereby increasing the risk of heat-related morbidity and mortality (IPCC, 2018[4]). • CO_2 emissions from urban mobility are expected to increase by 26% by 2050, while demand for urban passenger transport could grow by 60-70% in the same period if cities go back to the pre-COVID urban transport demand levels (OECD, 2020[5]). • Average wages in the key manufacturing sectors most likely to be impacted by the green transition are often higher than average wages in the economy as a whole, meaning that job loss or job transformations pose risks for wealth in the regions hosting them (OECD, 2022[6]). • In the European Union, the largest share of regions most vulnerable to the industrial transition to climate neutrality lag on several socio-economic indicators, especially gross domestic product (GDP) per capita and average regional wages (OECD, 2023[7]).
Demographic shifts and urbanisation	• Since 1970, life expectancy in OECD countries has increased on average by more than ten years (OECD, 2017[8]). Life expectancy at age 65 is higher, implying that a large part of the population in OECD countries can expect to live for more than 20 years after retiring (OECD, 2019[9]).	• An increasing share of the OECD population will move into large cities and their commuting zones (functional urban areas, FUAs). Between 2020 and 2030, the OECD population living in FUAs will increase from 950 million to 1 billion inhabitants. The population is expected to increase in larger FUAs with more than 1 million inhabitants, while the population in smaller FUAs is expected to shrink (OECD, 2022[14]).

Megatrends	Key trends and projections worldwide	Impact on regions
	• At current rates, there will be almost global parity between the number of over-60s and the number of children by 2050. The old-age dependency ratio (the ratio of older people to the working-age population) is expected to increase significantly by 2050 in most OECD member countries, shifting the composition of the workforce from young to older workers (OECD, 2022[6]). • Health spending as a share of GDP is projected to increase on average from 8.8% in 2015 to 10.2% by 2030 for OECD countries, with demographic changes accounting for about one-fourth of the overall projected change (OECD/EC-JRC, 2021[10]). • Public expenditure on pensions is expected to increase in 21 OECD countries with an overall increase to 9.4% of GDP in 2050 (OECD, 2022[6]). • In 2019, 5 million new permanent migrants settled in OECD countries, an increase of around a quarter since 2010 (OECD, 2022[11]); 3.7 million arrived in 2020. New migrants include highly qualified foreign doctors, nurses and scientists, as well as individuals that work in low-skilled but important jobs. • An annual average of 21.5 million people have been forcibly displaced by weather-related events since 2008 (UNHCR, 2016[12]). Available estimates suggest that up to 1.2 billion people could be displaced globally by 2050 due to climate change and natural disasters (IEP, 2020[13]).	• Across the OECD, non-metropolitan regions will experience population ageing the most. Across the OECD, elderly dependency rates remain significantly lower in metropolitan regions compared to other regions. As the population ages, the elderly share of the population (i.e. those above 65 years old) will increase in all regions but the increase will be largest in regions far from a metropolitan region (OECD, 2022[14]).
Digitalisation and automation	• Across the OECD, 14% of all jobs are estimated to consist of more than 70% of tasks that are likely to be automated, whereas another 32% of all jobs consist of 50-70% of tasks that are likely to be automated (Nedelkoska and Quintini, 2018[15]). • Average mobile data usage per subscription in OECD countries quadrupled between 2015 and 2019, and prices for high-usage mobile broadband fell by 59% over 2013-19. As of June 2020, 5G (fifth-generation technology standard for broadband cellular networks) commercial services were available in 22 OECD countries (OECD, 2020[16]). • OECD economies counted 113 high-speed mobile Internet subscriptions per 100 inhabitants as of June 2019, up from 32 per 100 a decade earlier, while non-OECD countries counted 60 such subscriptions per 100 people (OECD, 2020[16]).	• In some OECD regions, the share of jobs at high risk of automation is as low as 4% whereas in others, it is close to 40% (OECD, 2018[17]). • In the first quarter of 2022, people living in metropolitan areas experienced, on average, 40% faster fixed Internet connections than those in regions far from metropolitan areas (OECD, 2022[14]). • Throughout 2020, across European countries, the average gap between the large regions (TL2) with the highest and lowest shares of individuals working remotely was close to 10 percentage points. On average, 20% of workers in capital regions worked remotely most of the time in 2020 compared to only 10% in all European regions. (OECD, 2022[14]). • In OECD countries, teleworking grew from around 16% of employees before the crisis to around 37% during the first wave of the COVID-19 pandemic in April 2020.

Specific trends are shaping the future of regions

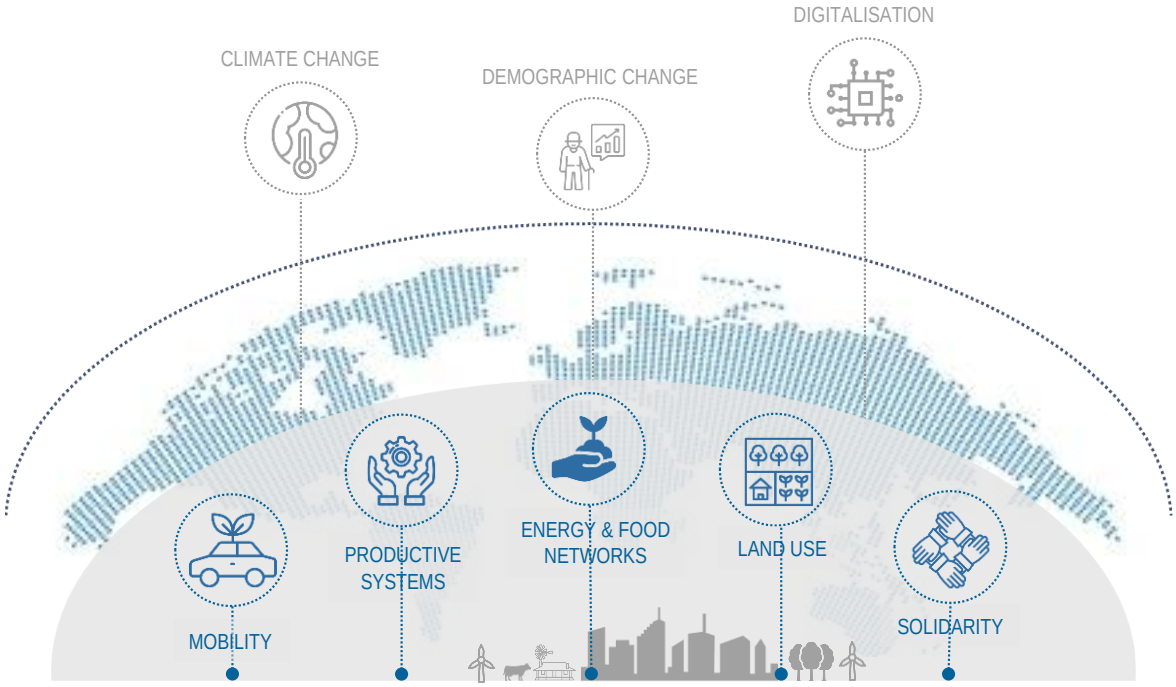
As Table 4.1 exemplifies, megatrends are not impacting regions within countries equally, while at the same time, they overlap with specific trends that are playing out at the regional level (illustrated in Figure 4.1). These latter trends are characterised by strong place-based effects that will result in widely different trajectories and responses at the regional level, i.e. not all regions and places are and will be impacted in the same way, and their capacities to engineer collective solutions will be asymmetric as well:

- **New forms of mobility**: With fossil fuels becoming scarcer and green subsidies scaling up, daily mobility costs will continue to increase. While regions have been deeply shaped by easy access to inexpensive modes of individual transport, new forms of mobility will decisively impact regions in

the short term as people adapt their daily life and, in the long term, with the emergence of new functional approaches based on shorter distances.

- **The transformation of productive systems**: Three major trends are expected to transform productive sectors, i.e. i) the emergence of Industry 5.0 and large-scale digital and technical transformations in production processes (automation, robotisation, etc.); ii) the development of more circular and low-carbon production and consumption cycles; and iii) a declining and ageing labour force, whose relation to work will evolve (e.g. remote working, search for meaning, etc.).
- **The advent of place-based carbon-free energy and food networks**: This transition, which is already on the way in many regions, is likely to accelerate as energy and food strategies become increasingly localised. The development of local energy and food networks will translate into very different dynamics across places, depending on their strategic choices and their capacity for action.
- **The shift in land use balance and people's relationship to nature**: Land use will change significantly in the coming decades and trade-offs will be required between different needs, such as preserving farmland for food production while developing renewable energy, raising the value of wood resources while strengthening the carbon storage capacity of forests, supporting re-industrialisation strategies and preventing further land loss (e.g. related to urban sprawl or commercial uses). At the same time, people's relationship with nature and space will continue to change as they search for a better quality of life, access to nature and more proximity in their everyday lives.
- **Poverty and new solidarity models**: Repeated crises will have a significant impact on disposable income, leading to more and more people living in precarious conditions. At the same time, in a context of increasingly constrained public budgets, it is likely that new models, mechanisms and networks of solidarity will emerge at the regional and local levels.

Figure 4.1. Regions have to anticipate the overlapping effects of megatrends and specific long-term transformations at the territorial level



Making sense of these trends at the regional level will be critical to prepare and adapt regions. Such transitions are likely to require structural transformations in how regions grow, supply energy, provide essential services, do business and use land. To continue to thrive, regions will also need to develop technical know-how and human and social skills. It is equally important to raise awareness and buy-in from those who will be most impacted by these policy choices. The following section discusses how strategic territorial foresight can be leveraged to help prioritise challenges, mobilise governmental and non-governmental actors, and identify a collective path forward to take an active rather than passive role in shaping the future of regions.

Territorial foresight to futureproof regional policy making

Strategic foresight to better prepare for an uncertain future

Strategic foresight is a structured approach to exploring possible future changes and their implications for decision making today. Foresight is based on the premise that one cannot predict the future but one can prepare for it. It entails scanning the horizon for new developments and emerging trends, constructing alternative scenarios about what future changes could occur and designing forward-looking strategies for advancing values and objectives under a wide range of possible circumstances (OECD, 2021[1]). Foresight helps to prevent poor decisions based on unquestioned assumptions about the future. Practising foresight allows for spotting new challenges sooner, so as not to be caught by surprise, and perceiving a broader universe of opportunities. Box 4.1 presents some of the main concepts and benefits of strategic foresight.

Box 4.1. Key concepts and benefits of strategic foresight

The OECD defines strategic foresight as a structured and systematic way of exploring different plausible futures that could arise, the opportunities and challenges they could present and using those ideas to make better decisions and act now. Foresight can support government policy making in the following main ways:

- **Better anticipation**: to better anticipate changes that could emerge in the future.
- **Policy innovation**: to reveal options for experimentation with innovative approaches.
- **Futureproofing**: to stress test existing or proposed strategies and policies.

Strategic foresight is not forecasting. It does not attempt to offer definitive answers about what the future will hold. Foresight understands the future as an emerging entity that is only partially visible in the present, not a predetermined destiny that can be fully known in advance (predicted). There are no hard facts about the future and the evidence base is always incomplete. The objective is not to "get the future right" but to expand and reframe the range of plausible developments that need to be taken into consideration. One of the main contributions of foresight is to give meaning to the future and help actors better understand its complexity.

Strategic foresight is not strategic planning. Doing strategic foresight alone will not produce a strategy or plan. The task of developing strategies and plans is enhanced and supported but not replaced by the process of considering multiple alternative futures and their implications. Strategic foresight instead aims to pose key questions that might have gone unasked in developing a strategy and to reveal and challenge potentially fatal assumptions and expectations built into current policies and plans.

Source: OECD (n.d.[18]), *Strategic Foresight*, https://www.oecd.org/strategic-foresight/ourwork/.

Over the last decade, foresight has become a highly visible and widespread way of informing decision-making and policy-planning processes. It is used to more systematically debate future prospects and desires, with a view to influencing present-day decisions and actions. It is particularly useful to leverage the knowledge of a wide range of stakeholders on new developments as well as on societal and business needs. The tacit and tangible "results" of foresight are recognised as valuable inputs to the setting of priorities for public and/or private initiatives, vision building, network formation, education and knowledge dissemination among relevant actors, especially among policy decision makers.

Across the OECD, more and more governments use forecasting and strategic foresight instruments to future-proof regional policy. Responses to an OECD survey conducted in 2018 showed that more than two-thirds of countries in the sample had a national long-term planning or strategic foresight unit at the centre of government, and nearly two-thirds of the countries used both forecasting and strategic foresight in regional planning processes (OECD, 2019[9]). Examples from Canada, France and Switzerland of using strategic foresight in policy making and strategic planning are provided in Box 4.2.

Sceptics may argue that adequate strategy and policy-planning methods and processes are already well-established at all levels of policy making. But the rules of the game are changing rapidly and radically, eroding the value of more rational planning and linear methods of policy development, and accentuating the need for more real-time interactive approaches that characterise foresight. The value of traditional planning approaches depends largely on long periods of relative stability and these approaches are currently challenged by the acceleration of environmental and technological changes, among others. The prevalence of interactive and participative methods of exploratory analysis and study is what could be termed a new paradigm. The methods are not "new" in the strictest sense, as they have been practised and developed over several decades. Nor do they replace more traditional forms of planning or rigorous academic research. However, their value is becoming more and more extensive, and they increasingly constitute a decisive element within a planning exercise. What foresight methods impart is a much more "emergent", real-time planning approach.

Box 4.2. Using foresight to develop future-oriented policy and programmes at the national level: Experiences in Canada, France and Switzerland

Canada

Policy Horizons Canada is a federal government organisation that conducts foresight to help the government of Canada develop future-oriented policies and programmes that are more robust and resilient in the face of disruptive change on the horizon. To fulfil this mandate, Policy Horizon Canada analyses the emerging policy landscape, the challenges that lie ahead and the opportunities opening up, engages in conversations with public servants and citizens about forward-looking research to inform their understanding and decision making, and builds foresight literacy and capacity across the public service.

In 2017-18, Policy Horizons Canada, with the support of the Privy Council Office, ran the Canada Beyond 150 programme with the goal to: develop leadership for a diverse cohort of public servants; experiment with new methods in open policy, to build the required skills and encourage a culture shift to a more open, innovative, collaborative public service; and engage external partners in the development of longer-term analyses and innovative ideas to inform future policy making. The programme gathered a Canada-wide group of federal public servants who learned skills in foresight analysis, design thinking and engagement, and explored five themes: reconciliation, feminist government, sustainable development goals, open and transparent government and socio-economic inclusion, which includes the future of work, capital and debt, and future of well-being. The programme

delivered seven thematic reports exploring key opportunities, challenges and policy issues across the different themes, as well as possible solutions and strategies.

France

In line with its commitments under the Paris Agreement, France launched two initial national low-carbon strategies. These strategies will imply important systemic transformations that will mobilise all stakeholders and require major technical, institutional and social innovations. In 2022, to inform the French government's decisions in this regard, the French Agency for Ecological Transition (*Agence de la transition écologique*, ADEME) produced four scenarios that propose very different economic, technical and social options for achieving carbon neutrality. The report *Transition(s) 2050* presents the scenarios in detail, provides a cross-scenario comparison according to energy, climate, and resources considerations and proposes some lessons across several sectors such as territorial planning, housing, mobility, agriculture, waste management and industrial production.

Switzerland

For more than ten years, the Territorial Concept Switzerland has provided the joint strategy of the Confederation, the cantons and the municipalities for the future regional development of the country. It outlines a vision of Switzerland for the future and, since its first publication in 2012, has become an important planning tool for decision makers. In 2023, the three levels of government decided to update it as new challenges have gained importance, notably climate change, energy production and digitalisation, which should be integrated into the Territorial Concept. The process will include a multi-level, government-wide reflection on what Switzerland could look like in 2050, with all major institutional partners involved. Workshops will be organised with foresight experts on themes such as climate, economy, energy and cohesion and a youth conference will be organised, all with a view to producing an updated Territorial Concept by 2025.

Source: Government of Canada (n.d.[19]), *Policy Horizons Canada*, https://horizons.gc.ca/en/home/ (accessed on 3 February 2023); Government of Canada (n.d.[20]), *Canada Beyond 150*, http://canadabeyond150.ca/ (accessed on 3 February 2023); ADEME (2022[21]), *Transition(s) 2050. Choisir maintenant. Agir pour le climat*, https://transitions2050.ademe.fr/; Projet de territoire Suisse (n.d.[22]), *Homepage*, https://projet-de-territoire-suisse.ch/ (accessed on 12 April 2023).

The rationale for foresight applies in equal measure at any territorial level. However, issues and priorities for a region can be very different from that of an entire country given the immediacy of their various socio-economic constituencies and highly variable (from region to region) situations, including the different responsibilities of subnational governments across and within countries. This means that territorial foresight is different in many ways from national foresight, though there are important similarities and synergies. The following section delves into the specificities of territorial foresight and how it can contribute to futureproofing regional development policy in particular.

Territorial foresight: Objectives and approaches

Territorial foresight has specific characteristics. First, territorial foresight approaches are inherently multi-faceted and consider the economic, social, environmental and political dimensions that make up regional economies and ecosystems. Second, the scope of territorial foresight exercises looks beyond administrative boundaries to consider the multiple connections a region shares with neighbouring regions and other parts of the world. Third, territorial foresight serves as a tool to reconcile different perspectives and priorities among actors of the same region by providing a platform for dialogue (e.g. workshops, reflection groups, fora, etc.) where these actors can confront different views of what is possible and desirable in the future, and the risks and opportunities they need to anticipate, which in turn fosters collective learning and strategic planning.

In a territorial foresight exercise, regional actors ponder key questions that imply different assumptions, biases and trade-offs, e.g. should a region prioritise technological or behavioural changes to address climate change? Should a region specialise or diversify its economy? Should a region focus on developing its endogenous resources and skills or building linkages and partnerships with neighbouring regions? Answers to these questions can set a region on different paths. Box 4.3 presents some experiences across OECD countries of using territorial foresight.

Box 4.3. Experiences in territorial foresight across the OECD

In **Australia**, the government agencies of New South Wales set up a foresight and futures team to equip decision makers across the sector with an ability to navigate future uncertainty and anticipate challenges and opportunities on the horizon. The team developed a digital platform – the Trend Atlas – accessible to all New South Wales government agencies that provides a test bed for building collaborative intelligence into government systems. The Trend Atlas provides information on over 275 local and global trends, including a detailed analysis highlighting the drivers, impacts and possible developments of each trend. Multiple foresight and risk management taxonomies are also applied to the trends to enable effective user navigation and sense making. A horizon-scanning database of over 3 500 articles gives users indications of weak signals of change. The platform makes future analysis easier to integrate into government decision making, strategic planning, policy development and service redesign.

In **Finland**, given the increasing polarisation of the regional structure and as part of future planning efforts, the Ministry of Economic Affairs and Employment commissioned a study on regional development scenarios for 2040. The scenarios are intended to enable discussions on possible options for the future of regions. Fifty key issues to be addressed by the scenarios relate to ensuring world-leading knowledge concentrations and finding the most suitable role for each region, as well as ensuring smart adaptation and good living conditions including in areas that fall outside the top-performing regions.

In **France**, the Brière regional park launched a territorial foresight process in 2019 on the impact of climate change, population growth and tourism on its future. Over the course of 3 forward-looking workshops, more than 100 stakeholders explored different possible futures over a 40-year period, to outline a desirable future for the park. The process revealed that the park was not yet equipped to meet upcoming challenges and risks, and called for rethinking spatial planning, environmental management and tourism strategies. The foresight process led to the creation of three “transition labs” tasked with inventing new ways for local actors to work together and seek collective solutions. One of the innovation labs focused on the future of urban planning and looked at how to rethink a “net zero artificialisation” planning approach in an area highly exposed to floods while preserving ecosystems. The lab brought together urban planners, citizens and land use developers to design a new charter for future urban planning in the park.

The Government Office for Science in the **United Kingdom** conducted a plausible scenario-led foresight assessment (*Futures of Cities*) to develop an evidence base on the future of United Kingdom (UK) cities (challenges and opportunities towards 2065), to inform national- and city-level policy makers. The study was conducted through the commissioning of working papers and essays, and interactive workshops, with over 25 UK cities participating. By combining megatrends analysis and scenario planning, for instance, the study “produced” a plausible future consisting of considerable climate shocks presenting key urban challenges by 2065, e.g. drier summers and heatwaves affecting the United Kingdom’s southern cities, and high levels of precipitations affecting western cities during the winter.

The state of Kansas in the **United States** piloted a novel framework, Our Tomorrows, to ensure that policies and practices meet the needs of families. The framework set out to achieve three goals: i) gather stories about thriving and surviving from families across Kansas utilising a complexity-informed narrative research approach called SenseMaker; ii) make sense of patterns that emerged from the stories through community SenseMaking workshops with stakeholders at various levels of the system; and iii) take action and enable bottom-up change through community action labs. Our Tomorrows laid groundwork to introduce anticipatory innovation to state decision makers while providing avenues at the community level for immediate participation and is being scaled statewide.

Source: NSW Government (n.d.[23]), *Case Study: New South Wales (NSW) Trend Atlas*, https://data.nsw.gov.au/nsw-government-data-strategy/case-studies/case-study-new-south-wales-nsw-trend-atlas; Futuribles (n.d.[24]), *Prospective Parc naturel régional de Brière 2060*, https://www.futuribles.com/la-prospective/etapes-de-la-demarche/exemples-de-demarches/prospective-parc-naturel-regional-de-briere-2060/; UK Government (2016[25]), *Future of Cities: Foresight for Cities*, https://www.gov.uk/government/collections/future-of-cities.

Territorial foresight can take many forms and seek different goals, from one-off workshops to a multi-year process, and involve a few or many stakeholders (see Box 4.4). In addition, different methods can be used to explore the future, notably:

- **Prospective backdrop**: This method consists in summarising the major changes and uncertainties at global, national and regional levels. Actors of a region are invited to select and prioritise the changes that seem to have the greatest impact and then reflect on their possible implications for the region. This method enriches strategic reflection, in particular on the vulnerability of the region and the resilience measures to be taken as a result.
- **Normative foresight**: This approach is based on a common objective for the future of the region. This objective can be represented by a story or images, in order to represent as concretely as possible what would constitute a desirable and unifying horizon. Generally, this common objective is defined by one or more key players in the region (elected representatives, entrepreneurs, citizens) and finds consensus. The goal of the foresight exercise is then to determine the most appropriate trajectory to achieve it.
- **Exploratory scenarios**: In this method, the aim is to construct a simplified representation of the possible futures of a region. To this end, a rigorous method makes it possible to identify the main components (or variables) of the region, study their dynamics and formulate hypotheses on their possible future evolution. Finally, these hypotheses are combined to build scenarios. This method is an opportunity to get stakeholders to work together and to build a common understanding of the region and of priorities for the future.

Box 4.4. How to use territorial foresight: Different approaches for different purposes

Regions and places are diverse in their characteristics, challenges and strategic contexts. As a result, territorial foresight approaches adapt to this diversity and can have different forms and goals, as illustrated below.

Territorial foresight to challenge preconceived ideas of the future

A foresight approach can be brief and made of short sequences, for example, interviews with regional/local actors, a foresight pre-diagnosis and a few workshops. This approach provides an opportunity to discuss with regional/local actors their views and representations of the future and to have them sketch the outline of foresight thinking. This type of approach is useful to challenge preconceived notions, uncover new issues or challenges and raise interest to go further. This type of

brief approach still requires careful preparation to frame the issues for discussion in the specific context of the region. It typically proves useful as a first step or prelude in a more structured and long-term foresight process.

Territorial foresight to manage uncertainty and build resilience

At a time of rapid and unpredictable changes, regional and local actors need to map and anticipate these changes to be prepared. Territorial foresight can be used to better understand ongoing and upcoming changes, to clarify the possible implications for a region or place in terms of exposure and vulnerability, and to design a resilience strategy. Such a strategy can be designed to manage risks and adapt to a changing environment. This type of foresight approach makes an important contribution to regional resilience strategies, which are often based only on an understanding of past and present risks.

Territorial foresight to set a course for transformational change

Territorial foresight can be used to prepare for major transformations in a region, such as industrial transition. These are more complex strategic approaches, where foresight brings meaning and coherence as well as an exploration of the future that enriches collective thinking and strategic planning. Generally, these approaches are structured in three main stages: i) a diagnostic of how the main strengths and challenges of the region and its environment; ii) the development of exploratory scenarios to identify possible futures and lay the foundations for a vision of the region's future; and iii) the design of the vision and future trajectory of the region.

Source: Information provided by Futuribles.

Scenarios for OECD regions in 2045

To better understand the challenges regions in OECD countries may face in the coming decades, this section explores several plausible alternative futures using scenario planning. This approach challenges current assumptions about where regions may be headed. These scenarios are intended as an initial contribution to further reflection and decision making on regional development in the years ahead.

The scenarios are not prescriptive or predictive, nor are they exhaustive or mutually exclusive. They are imagined future contexts, crafted to stretch plausibility about what the future may hold. The scenarios represent possible future disruptions that could create significant strategic considerations for territorial disparities and regional development policy. They do not aim to fully reflect the diverse realities across all OECD regions but instead seek a common denominator by describing possible developments in a generalised way, with a focus on issues of mutual interest with an OECD-wide perspective.

Scenario building process and overview

The scenarios are informed by emergent OECD findings on the impact of megatrends and transitions on regions and were developed in collaboration with the delegates of the OECD Regional Development Policy Committee (RDPC) during a series of participatory workshops organised in 2022-23 to scan the horizon for important drivers of change in regions, think of different possible futures and explore what these futures mean for regional development policy (Box 4.5).

Box 4.5. The Regional Outlook 2023 foresight exercise

The scenarios described in this chapter were developed in close collaboration with the delegates of the RDPC. The foresight process consisted of two participatory workshops organised between November 2022 and March 2023 with the participation of 30 to 40 representatives of different member and non-member countries.

The first workshop, "A Day in 2045: What's driving the future(s) of OECD regions?", engaged RDPC delegates in discussions and ideation about the main drivers of change for OECD regions in the future. In break-out groups, participants first imagined what a typical day in the lives of people living in different types of OECD regions in the year 2045 could possibly look like. Each group pictured the day of different people living in a region of an OECD country, considering his/her job/education, mobility, connectivity, food, environment, social life, culture, etc. and discussed the main factors of change shaping the person's future. These people were a 19-year-old migrant, at university, living in a dense metropolitan region, a 55-year-old small and medium-sized enterprise (SME) owner with 3 children, living in a semi-dense region, and a 30-year-old doctor, living in a sparsely populated region. Participants then reflected on the factors influencing or changing the way these people live, work, consume and interact in the future, considering in particular:

- What do they notice about the person's life in the future and what stands out?
- What are the assumptions they are making about the future?
- What have they found out about the future they are imagining?

The second workshop, "Building forward-looking scenarios for OECD regions", had participants engage in exercises designed to help them imagine different paths OECD regions could take over the coming 20 years as they are influenced by major transformations and what policy choices and interventions are needed to prepare for and adapt to these possible futures. Participants were first presented with and further elaborated on three sketch scenario narratives, including to ensure their consistency, plausibility and clarity. They then imagined these sketch scenarios happening today to consider:

- What needs to be done to adapt to these new realities? What policy actions can be carried out today?
- What policies/solutions need to be invented to improve the lives of people in the future?
- What could happen to change that reality from coming true, for better/worse?

Among the drivers of change identified as part of the foresight workshops, which included societal, economic, technological or environmental factors, the state of multi-level governance was selected as the most impactful and uncertain in shaping regional realities across the OECD in the future. Multi-level governance generally refers to the interactions among and across levels of government, which are mutually dependent, and with a broad range of non-governmental stakeholders, including private actors and citizens, when designing and implementing public policies with subnational impact (OECD, 2023[26]). Discussions in the foresight workshops highlighted how multi-level governance systems will be instrumental to shape the responses to many challenges and transitions different regions will face and how their evolution in the years ahead can be decisive for regions' future development.

Using multi-level governance as the main driver of change, three scenarios emerge, set in 2045. They are summarised in Table 4.2 and elaborated in the following sections. The scenarios consider the different degrees of either co-operation or autonomy at the national and regional levels across OECD countries, from highly centralised policy making to effective and balanced co-operation among levels of government to high levels of autonomy at the regional level. Each of the three scenarios also considers developments of other drivers of change identified during the workshops (climate change, natural resources availability,

technology, infrastructure, etc.). To illustrate different possible futures, contrasts between scenarios may appear exaggerated.

The “foregone region” scenario explores the emergence of fully centralised power and top-down decision making in OECD countries, combined with less citizen engagement and growing distrust. The “interconnected region” sees regional and national authorities collaborating actively together and with citizens to elaborate effective solutions to pressing challenges. The “region-state” explores a power shift whereby regions form into separate, almost independent entities, each operating within its own ecosystem and competing for wealth and resources.

Table 4.2. Scenario overview

	“Foregone region” scenario	“Hyper-connected region” scenario	“Region-state” scenario
Description	Regional authorities have all but disappeared as national governments (re)centralised all decision- and policy-making powers. The absence of a multi-level approach to managing transitions led to even-deeper asymmetric impacts of megatrends within countries and untenable territorial disparities between those most and least affected regions.	There is strong co-ordination and collaboration across national and regional governments, including across borders. Transitions are managed in a networked and integrated way. Communities and citizens play an active role and engage almost exclusively in the metaverse. While inequalities within countries are subsiding, inequalities between countries are widening.	OECD countries are fragmented as regions have become (more) autonomous and embraced widely different economic models and ideas of social value, with territorial inequalities running wild as a result. There is a lack of co-ordination on global challenges such as climate change. National governments are relegated to the role of regulator and must mediate rising competition and tensions between regions.
How it happened	After the COVID-19 pandemic, disasters and crises continued and led OECD countries to centralise and consolidate decision making in order to tackle climate change and regulate sustainability, mostly with techno-solutions.	As citizens fear further pandemics and increasingly large-scale and frequent natural disasters, they demanded greater collaboration between national and regional governments to lead the green transition.	The proactive role played by subnational governments during and in the aftermath of the COVID-19 pandemic strengthened public support for more regional autonomy, leading to regions-states with their own authority.
Assumptions challenged	That the regional development paradigm was widely adopted and supported, and countries rely on multi-level governance and decentralisation to build resilience in the face of megatrends.	That effective co-ordination between national and subnational governments would be difficult to achieve, and that there is no value-added in collaborating with the central level.	That the nation-state and national sovereignty would remain the dominant model in the world order.

The “foregone region” scenario

Scenario highlights

In 2045, OECD countries believe that fighting climate change is best done at the national level and centres of government now concentrate all decision-making powers. Regions and regional governments have all but disappeared as a result. For several years now, national governments have taken a top-down, mission-oriented innovation approach to manage the green transition, betting everything on new green technologies, such as sustainable green power and biotechnology. Environmental protection is seen as necessary to maintain growth, not as an end in itself. The dominant development model still depends on resource exploitation despite an increased focus on sustainability. National governments control essential infrastructures and collaborate closely with big technology companies. Citizens worry about the limited channels through which they can influence the new centralised politics and trust in government has plummeted, resulting in anti-democratic movements.

How we got here

After the COVID-19 pandemic, crises and disasters continued. Dramatic sea level rises in the 2020s and 2030s have caused people to abandon coastal communities across OECD countries. Climate change also resulted in the re-emergence of ancient pathogens. To avoid a full-blown climate catastrophe, national governments in OECD countries take charge of the sustainability agenda. Multi-level governance, decentralisation and stakeholder engagement are seen as hindrances, time-consuming and distracting from coherent and decisive top-down action to combat the climate crisis. Progressively, national governments (re)centralise policy-making powers and take over key competencies in major infrastructure (energy, water, transport) to be "more effective", while dismissing the role of regions and subnational authorities. At the same time, national governments favoured technology development over changing consumption patterns to address environmental challenges and have implemented strong policies to promote the decarbonisation of economies, in a context of international competition and globalisation of trade. The place-blind, top-down policy model has led to the promotion of agglomeration and density in big dynamic cities in the 2020s and 2030s.

By 2045…

Regions and regional governments have all but disappeared. National governments have fully embraced a top-down and uniform approach to policy making and sustainability. The dominating policy strand is advocated on the belief that central decision making is more efficient while regional and place-based considerations are secondary and ineffective. These national strategies consider that good macroeconomic management and nationwide policies are what matter most to fighting climate change and maintaining growth levels.

Nature is seen as a set of resources to be exploited for the benefit of humans, in a relationship of mutual growth between natural ecosystems and intense human activity in all economic areas. Technologies are means of understanding, monitoring and regulating the impacts of climate change. Technological solutions also provide new flexibilities and capacities for adapting (e.g. precision agriculture, development of seawater desalination, home automation, etc.). Hence, lifestyles, travel and work are very similar to those of the 2020s and 2030s, but with some differences. For instance, food diets contain less meat and individual mobility is still prevalent but with lighter, electrified vehicles. By focusing on green or decarbonised technologies, energy and material consumption risks are insufficiently controlled. Green energy is big business, including for SMEs.

The best technologies are widely deployed and widely available to those who can afford them, notably big cities and rural areas that have specialised, e.g. in green technologies or resource extraction that contribute to strategic autonomy. Centralised transport systems focus on connecting cities and facilities. Meanwhile, poor regions are getting poorer and risk not having access to basic needs (hospitals, public transport, etc.) and losing their young and skilled. Inequalities within countries are at an all-time high.

Apart from isolated initiatives, citizens are less involved in political decisions. As people feel disconnected from government and elected officials, life is inwardly focused and more individualistic. Concentrations of power are weakening the foundations of democracy. Trust in government and social cohesion are dramatically eroded, leaving behind a vacuum that is increasingly filled by major technology companies. The line between government and business is blurry. Lower social trust also coincides with a withdrawal into virtual forms of engagement and misinformation is rampant.

Considerations raised by this scenario for the future of regional development policy

- How could regional development policy manage the tensions between achieving sustainability objectives and leveraging technological innovation across places?

- How could regional development policy further contribute to establishing frameworks and standards for regional well-being and quality of life in a far more centralised environment?

The "hyper-connected region" scenario

Scenario highlights

It is 2045 and the green transition is the thread that connects all regions together and with their national governments. OECD countries are on their way to climate neutrality by 2050. Fuelled by the success of the International Programme for Action on Climate (IPAC) and the Inclusive Forum on Carbon Mitigation Approaches (IFCMA) to help reach the targets of the Paris Agreement in the early 2030s, member countries have invested massively in green and digital transition technologies and paved the way to support governance structures that are more networked and co-operative. Regions are instrumental cogs in this new system and work together with national governments to achieve societal goals. All decisions are based on consensus and through compromise solutions. To facilitate this hyper-connectedness, most interactions, whether across levels of government or with citizens, now take place in the metaverse. The main channels to interact with the government are targeted applications and social media using a new generation of wearable technology. Diplomacy is more complex than ever before as relationships between national governments, subnational authorities, platform companies and citizens need to be delicately managed.

How we got here

As environmental degradation reached dangerous levels in the late 2020s, global initiatives like the OECD-led IPAC and IFCMA enabled dramatic reductions in greenhouse gas emissions in the early 2030s and convinced countries that co-operative and co-ordinated efforts are fundamental to safeguard humanity and should be mainstreamed across all policy issues and levels of government. The steady growth of deliberative democracy, citizen engagement and co-creation, reinforced by trends towards more transparency and accountability, have transformed society. With a framework of shared governance and regional co-operation, public institutions, the private sector, non-governmental organisations and civil society have found pragmatic ways to co-operate and maintain the social fabric while protecting the planet.

By 2045…

To achieve carbon neutrality, society relies on a progressive but steady change of the economic system towards a sustainable path combining sufficiency and efficiency. Consumption of goods becomes measured and responsible, and sharing becomes widespread. Transformation in housing (e.g. shared/community living, a ban on vacant housing), work habits, diet and travel change. Nature and biodiversity are appreciated for their intrinsic values. Changes in society's values provide for massive investment in efficiency and renewable energy, and in renewing and retrofitting infrastructure. Reindustrialisation policies are implemented in targeted industrial sectors. These investments are encouraged by financial incentives, defined by policies and regulations based on social and environmental criteria. The impacts are felt across all OECD countries as a global certification system on green infrastructure and products, and strict rules on imports of carbon-intensive goods are established, and international trade slows down to reduce carbon emissions.

Regions and regional governments are essential actors in the green transition alongside national governments and civil society. The co-ordination of the green transition across levels of government is essential for governance systems, and all policy decisions are made based on compromise among all

stakeholders, enabled by higher degrees of trust. Integrated, multi-level policy making means that environmental sustainability strategies are foregrounded across all areas of government.

However, as national and subnational governments strive to make progress on many policy fronts at the same time, seeking consensus from all stakeholders is time-consuming and slows down the transformation of production systems and lifestyles. Other by-products of the significant increase in co-ordination are now becoming more challenging, including the difficulty to agree on major policy reforms, decision paralysis, an expansion of the public sector including new co-ordination bodies, more bureaucracy around decisions and less agility and responsiveness in times of crisis.

Massive breakthroughs in digital technologies, such as blockchain, telepresence and augmented reality, allow immediate and constant access to relevant information and facilitate participation in decision making at all levels and tailored local implementation. The Internet of Things and AI systems provide evidence for policy making. Algorithms also drive day-to-day political life. They are used to customise messages addressed to different groups, assess the chances of success of proposed legislation and both contain and spread fake news. Much of people's everyday and civic life now takes place in the metaverse. Digital space is prioritised over the physical, including limiting carbon emissions, most public services are digitally based and economic life takes new forms on line. These technologies also contribute to more demographic spread and less stark urban-rural differences, as they open more places to live a quality life.

As states and regions increasingly co-operate, decisions are locally scaled and sensitive to spatial issues, and regional disparities have subsided. However, whilst inequalities *within* countries have declined, inequalities *between* countries are widening. The metaverse is where most economic and social activity is taking place and a small group of technology giants provide the hardware needed to access it. Digital infrastructure, therefore, dictates inequality between countries as they differ in their ability to leverage access for their population. Some countries with a large share of youth are experiencing massive growth, while others are ageing rapidly, and their older populations struggle to adjust to cutting-edge technologies and the new socio-economic realities. The convergence process in the OECD during the 2000-20s is being reversed by an ever-growing digital divide, accompanied by rising social tensions. Cybersecurity is a major concern for governments at all levels. Interconnectedness means vulnerabilities can affect many actors. The elevated costs of cybersecurity are a barrier to many countries trying to bridge the digital divide.

Considerations raised by this scenario for the future of regional development policy

- What new relationships/connections may regional development policy makers need to broker in a more inter-connected world (e.g. global technology companies, local community movements)?
- How can regional development policy develop the necessary incentives to ensure hyper-connected regions continue to work together rather than consolidate their power and influence?

The "region-state" scenario

Scenario highlights

In 2045, OECD countries have become patchworks of regions. In this scenario, region-states have increased authority and operate as individual entities with different economic and social value models and standards. Prosperous regions negotiate directly with corporations around the world. In this setting, there is more of an inclination to hold on to the wealth they generate and compete for national and international legitimacy. National governments' limited strength resides in their ability to regulate and mediate rising competition and tensions between regions. The ability to pursue a co-ordinated sustainability agenda is diminished due to fragmented and disconnected agendas. Regional inequalities intensify as the gap between poor and rich regions increases.

How we got here

Public perception that regional governments were on the frontlines of the COVID-19 pandemic and handled the recovery better than national governments strengthened calls for greater autonomy and prompted the rise of independence movements and radical decentralisation across OECD countries. At the same time, the 2020s and 2030s were marked by increasing dissatisfaction with the redistributive model of most OECD countries. Leading regions grew tired of supporting lagging regions and precipitated a general collapse of public trust in national institutions. In the wake of this collapse, regions started to break away and pursue widely different economic models and arrangements within the same country.

By 2045…

OECD countries are fragmented as many regions have become independent or increased self-determination. Regions use their autonomy to move in different directions reflecting their self-interest. Different levels of government compete for legitimacy and social cohesion is low. Accountability is diluted and makes it easy to shift the blame on others. Meanwhile, national governments use the little power they have left to mediate internal conflicts between regions.

Some regions sustain themselves through rewarding relationships with international “patrons” and base their economies on strong external affiliations with global economic actors, while less successful regions struggle with public debt and have to be more frugal. As stronger regions share fewer budget resources with poorer performing regions, fiscal equalisation breaks down. As a result, successful regions become more appealing but less open to migration from poorer regions, which causes territorial disputes. Extreme regional inequalities and structural unemployment are growing in many countries.

Some regions lead the green transition and try to control their local environment to ensure their citizens’ well-being, while others have limited connections to nature and disregard such concerns. The fragmentation of climate efforts and funding creates incoherencies, tensions and divisions. Some regional renewal superpowers emerge but it is based on economic not environmental benefits and there is no consistent policy or facility to redistribute renewal energy. Regional energy systems have proliferated piecemeal and are hard to integrate. The failure to co-ordinate climate action has compromised critical ecosystem services, such as the provision of drinking water.

Some autonomous regions choose to bet everything on their comparative strengths and have over-specialised: many rural regions hold on to their natural resources and intensify the automation of farming (e.g. farm factories), forestry (bioengineered trees) and renewable energy production. Most automated farms are owned and managed by corporations with integrated processing of food and bio-based products. People living in these rural regions are forced to sell their land and move to cities. Large metropolitan regions are getting bigger and have become high-technology hubs but suffer from worsening air quality, congestion and insecurity. Higher-income groups have moved to the suburbs for better living conditions while low-income groups stay in city centres, creating new urban ghettos.

Considerations raised by this scenario for the future of regional development policy

- What new system of collaboration may regional development policy require to achieve effective co-ordination among regions-states and address global challenges?
- How can regional development policy support regional diversity while ensuring a minimum level of social cohesion?

Strategic considerations to future-proof regional development policy

The scenarios illustrate some of the ways in which the world could be substantially different in 2045. In this respect, they serve to broaden the perspectives about what the future may require in terms of regional development and what it could mean for regional development policy. How can regional development policy and policy makers begin to prepare for challenges and opportunities posed by these plausible – although by definition uncertain – futures and by global challenges that will continue to unfold over the next decades?

How can regional development policy prepare for the future

The scenarios serve to highlight how political, social and technological developments can challenge institutional and fiscal systems that operate on the basis of inflexible assumptions. But the coming decades could be highly unpredictable, marked by complex and non-linear systemic change and bringing an acceleration of significant challenges. Two priorities, in particular, emerge to prepare and adapt regional development policy and build up resilience in the next 20 years: building systemic and strategic approaches to fiscal systems, public investment strategies and governance structures to withstand unknown shocks and respond to emerging circumstances and developing strategic foresight capacity at the national and subnational levels.

Building resilient and adaptable fiscal systems, public investment strategies and governance structures

Strengthening subnational fiscal robustness, notably ensuring debt sustainability and bolstering subnational revenues, is the first important avenue to build more resilience in regional development policy. Many trends discussed in this chapter will affect subnational fiscal systems. The tax base of some regions and cities might fundamentally change due to demographic shifts, changes in the labour market and business income, as well as changes in land values and housing prices. This could lead to increasing disparities in fiscal capacity among regions.

A particular challenge for governments is to reconcile on the one hand the objective of ensuring that public debt remains at levels that are sustainable under scenarios that account for the longer-term fiscal impact of megatrends, such as population ageing and shorter-term effects on the public finances of global risks, and, on the other hand, the objective of accommodating public investment in priority areas, such as mitigation and adaptation to climate change, needed improvements in digital and other essential infrastructure, reducing the risk of future shocks like pandemics and dealing more effectively with their consequences when they materialise (de Mello and Ter-Minassian, 2022[27]).

Across the OECD, national governments in federal countries can foster subnational fiscal sustainability for instance through agreements with regional governments or by creating incentives for those governments to adopt and implement appropriate fiscal responsibility frameworks/fiscal rules. Meanwhile, in most unitary countries, national governments are able to regulate the access of regional or local governments to borrowing and may choose to do so in different ways, ranging from administrative controls to standing fiscal rules or periodic agreements. Furthermore, in view of the increased incidence of unforeseen exogenous shocks, such as natural disasters, national and regional governments may need to take preventive actions, such as purchases of insurance and the maintenance (or increase) of their contingency reserves, including rainy-day funds.

To expand the fiscal space to attend to new spending needs in the future while respecting the requirements of sound fiscal responsibility frameworks, most subnational governments in OECD countries will need to both increase their revenues in an efficiency and equity-friendly way and rationalise their existing spending (de Mello and Ter-Minassian, 2022[27]):

- National governments can support subnational own-revenue mobilisation efforts in a number of ways, including by helping subnational tax administrations through systematic exchanges of information, joint audits, technical assistance and financial support to their modernisation and digitalisation efforts or by providing appropriate incentives for subnational government to more fully exploit their revenue-raising potential.
- Subnational governments have a number of options to increase their own revenues, such as: broadening the base of existing own taxes, by reducing or eliminating existing exemptions and other preferential treatments and mitigating the impact of the changes on lower-income groups through targeted transfers, if needed; strengthening and modernising the administration of own taxes, e.g. property tax; or adopting or progressively raising "green" taxes and levies, among other possible reforms.

Futureproofing public investment strategies is a second important avenue to build more resilience in regional development. Infrastructure investments will need to be made that anticipate shocks all while avoiding the "green gentrification" of cities and regions, which can make life less affordable for vulnerable populations in the name of sustainable development (OECD, 2022[6]). Optimising existing infrastructure assets and making them more resilient also needs to be part of long-term infrastructure investment strategies. Upgrading existing infrastructure assets provides a solution for existing asset stock making it more effective, long-lasting and better value for money (OECD, 2021[28]).

The investment mix should also be balanced and differentiated across places to properly address megatrends and reduce regional inequalities. The investment mix inevitably varies strongly from urban to rural regions, reflecting the specificities and assets of different territories. In addition, megatrends will impact regions differently and thus shape their investment needs. Challenges linked to megatrends, such as localised flooding or urban heating, are also profoundly local and place-specific. This means not only a need to target the investment mix to each place but also a need to balance investment in hard infrastructure with investment in human capital to maximise the potential for long-term growth and sustain a continuing improvement in living standards, environmental quality and well-being (OECD, 2022[6]).

Making a multi-level governance structure more adaptable is a third important avenue for resilient regional development policy. To manage differences in terms of subnational autonomy, responsibilities or capacities, experimental governance that embeds learning-by-doing and trial-and-error processes into policy design can help governments to develop better approaches to address different local needs. A willingness and capacity to experiment with policy approaches – testing, adjusting and retesting – is particularly relevant when confronted with uncertainty, as megatrends can dramatically shift and shocks can occur, catching policy makers off guard and requiring a rapid policy response.

Such approaches can be combined with asymmetric decentralisation, which many OECD countries have moved towards in recent years. Asymmetric decentralisation arrangements can help regions, cities and rural areas that are particularly affected by global changes to better respond to opportunities and challenges. These types of arrangements allow subnational governments to adopt institutional and fiscal frameworks that are better targeted to local capacities and may allow them to better respond to local needs. This trend is likely to continue and can help to adapt governance to differences in regional, metropolitan and local conditions and capacities (OECD, 2019[9]).

Developing the strategic foresight capacity of policy makers at the national and subnational levels

Developing the foresight capacity of policy makers is critical to constantly perceive, make sense and act upon ideas about future change emerging in the present. Building such capacity can help policy makers to envisage new solutions, stress test plans to make them more robust, develop early warning systems for threats and opportunities, and advance regional development policy objectives under conditions of continuous change.

Governments face barriers to the effective development and use of strategic foresight in the context of a still-dominant culture of forecast-based policy planning. As a result, high-quality policy-driven foresight is underused. Investing in foresight capacity for regional development policy making also requires overcoming day-to-day challenges (e.g. under-funded mandates) and taking a long-term view.

At the national level, avenues to develop and strengthen strategic foresight capacity for regional development policy include:

- *Leveraging territorial data to inform foresight:* Moving towards more proactive policy making requires mainstreaming strategic foresight and planning across sectors and jurisdictions. At a time when territorial data and indicators are increasingly driving regional development policy decisions, the ability to harness and make sense of that data as part of territorial foresight approaches becomes even more important. Policy makers must ensure that they either have the capacity to make data-driven decisions in the future or that other departments with that capacity are fully briefed on key trends and issues impacting regions to play a supportive role.
- *Promoting a culture of innovation and change management*: Governments can be challenged by the pace at which change and shifts occur. Promoting a culture of innovation within government will be critical to ensuring that megatrends are given due consideration withing the decision-making process. The use of futures labs and scenario planning exercises, which tackle forward-looking issues through creative multi-stakeholder engagement, is one potential mechanism to promote a culture of adaptation, continuous improvement and future thinking. The focus on participatory forward thinking involving people with a common issue can strengthen the ownership of the foresight topic, possible territorial consequences and pointers for policy making.
- *Scanning the horizon over the long term*: Maintaining a system to identify weak signals of change is a useful approach to anticipating possibilities for the future and designing forward-looking scenarios. Such long-term planning approaches should bring together experts from different fields related to regional development. Strategies and decision-making processes should also be informed by actors on the ground, i.e. subnational authorities, private actors and citizens.

At the subnational level, avenues to develop and strengthen strategic foresight capacity include:

- *Optimising existing foresight work*: More and more regions and cities are using foresight to inform their policy making but these initiatives are often scattered. The sharing of existing foresight work, whether applied to specific sectors (e.g. climate change, future mobility) or to specific places, would provide regional actors with a considerable bank of knowledge and experiences. Similarly, the pooling of foresight methods and tools would equip these actors and ensure the foresight approaches they use have been stress tested.
- *Relying on networks of foresight practitioners*: Developing a community of practice on foresight at the subnational level would facilitate the dissemination of good practices and help policy makers to strengthen capacities and skills at the subnational level. These networks could support peer learning (e.g. between elected officials, between foresight officers, etc.), which is critical to ensure know-how and skills transfer. Bringing together the insights and knowledge of a wide range of different practitioners allows for approaching complexities and uncertainties where no quantitative information about the future is available.
- *Training subnational public officials to become more future-literate*: Raising awareness and building knowledge on cross-cutting disciplines can enable regional and local civil servants to better understand major systemic transformations at work, notably the green, digital and energy transitions. The ability to work as a team and in project mode should be part of such training. Stepping up regional and local engineering capacities is a necessity to enable subnational actors to prepare for, rather than react to, future challenges. This includes strengthening technical teams within regional and local administrations, notably their capacity to design and implement collective

strategies. Finally, foresight training should also target elected officials so they can better articulate their political vision with effective action on the ground.

Where should regional development policy be headed next?

Taken together, the three scenarios presented in the chapter reveal several strategic considerations for the future of regional development policy. These considerations are the result of brainstorming exercises during the foresight process. These are not exhaustive but aim to stimulate reflections and may serve as a stepping stone for future foresight reflections on regional development.

How would the core purpose of regional development policy need to adapt in the future?

The scenarios shed light on how the world could evolve in any number of directions over the coming two decades, each raising new implications for regional development policy. For instance, the digital transition could divide regions between those that stand to win or lose from it and could force regional development policy to focus investments only on a subset of regions at risk of staying digitally behind. As the territorial impacts of megatrends continue to evolve, what new purposes should regional development policy be ready to achieve in the future? These might include:

- Building foresight capacity at the subnational level (e.g. establishing regional/local foresight competency centres).
- Setting sustainable and digital requirements at the subnational level (e.g. regional sustainability and cybersecurity standards).
- Expanding inter-regional, inter-municipal and cross-border co-operation and optimising peer-to-peer learning opportunities to better understand and address global changes.
- Supporting more localised and clean production systems and manufacturing.

What mission would remain central to regional development policy?

The scenarios illustrate how the values and priorities of central and subnational governments could evolve. Different economic and social models and standards could proliferate within countries and polarisation may grow. Long-held values of regional development policy (e.g. spatial differentiation, multi-level governance, place-based approach) could be increasingly contested. In this context, what should remain the central mission of regional development policy?

This might include:

- Safeguarding regional well-being in an increasingly virtual world.
- Providing targeted, place-based support to address increasing territorial green and digital divides.
- Placing local knowledge at the centre of adaptation strategies to global changes.
- Ensuring continued connections and communication channels across levels of government and among regions.

References

ADEME (2022), *Transition(s) 2050. Choisir maintenant. Agir pour le climat*, French Environment and Energy Management Agency, https://transitions2050.ademe.fr/ (accessed on 3 February 2023). [21]

de Mello, L. and T. Ter-Minassian (2022), "Improving subnational governments' resilience in the wake of the COVID-19 pandemic", *OECD Working Papers on Fiscal Federalism*, No. 37, OECD Publishing, Paris, https://doi.org/10.1787/6b1304c8-en. [27]

Futuribles (n.d.), *Prospective Parc naturel régional de Brière 2060*, https://www.futuribles.com/la-prospective/etapes-de-la-demarche/exemples-de-demarches/prospective-parc-naturel-regional-de-briere-2060/. [24]

Government of Canada (n.d.), *Canada Beyond 150*, http://canadabeyond150.ca/ (accessed on 3 February 2023). [20]

Government of Canada (n.d.), *Policy Horizons Canada*, https://horizons.gc.ca/en/home/ (accessed on 3 February 2023). [19]

IEP (2020), *Ecological Threat Register 2020*, Institute for Economics and Peace, https://etr.economicsandpeace.org/. [13]

IPCC (2023), *Sixth Assessment Report - Climate Change 2023*, Intergovernmental Panel on Climate Change, https://www.ipcc.ch/report/sixth-assessment-report-cycle/. [3]

IPCC (2018), *Global Warming of 1.5°C.An IPCC Special Report on the Impacts of Global Warming of 1.5°C above Pre-industrial Levels and Related Global Greenhouse Gas Emission Pathways, in the Context of Strengthening the Global Response to the Threat of Climate Change*, Intergovernmental Panel on Climate Change. [4]

Nedelkoska, L. and G. Quintini (2018), "Automation, skills use and training", *OECD Social, Employment and Migration Working Papers*, No. 202, OECD Publishing, Paris, https://doi.org/10.1787/2e2f4eea-en. [15]

NSW Government (n.d.), *Case Study: New South Wales (NSW) Trend Atlas*, New South Wales Government, https://data.nsw.gov.au/nsw-government-data-strategy/case-studies/case-study-new-south-wales-nsw-trend-atlas. [23]

OECD (2023), "Recommendation of the Council on Regional Development Policy", Draft, OECD, Paris. [26]

OECD (2023), *Regional Industrial Transitions to Climate Neutrality*, OECD Regional Development Studies, OECD Publishing, Paris, https://doi.org/10.1787/35247cc7-en. [7]

OECD (2022), "Making the most of public investment to address regional inequalities, megatrends and future shocks", *OECD Regional Development Papers*, No. 29, OECD Publishing, Paris, https://doi.org/10.1787/8a1fb523-en. [6]

OECD (2022), *OECD Regions and Cities at a Glance 2022*, OECD Publishing, Paris, https://doi.org/10.1787/14108660-en. [14]

OECD (2022), *The Contribution of Migration to Regional Development*, OECD Regional Development Studies, OECD Publishing, Paris, https://doi.org/10.1787/57046df4-en. [11]

OECD (2021), “Building resilience: New strategies for strengthening infrastructure resilience and maintenance”, *OECD Public Governance Policy Papers*, No. 05, OECD Publishing, Paris, https://doi.org/10.1787/354aa2aa-en. [28]

OECD (2021), *Global Scenarios 2035: Exploring Implications for the Future of Global Collaboration and the OECD*, OECD Publishing, Paris, https://doi.org/10.1787/df7ebc33-en. [1]

OECD (2020), *Improving Transport Planning for Accessible Cities*, OECD Urban Studies, OECD Publishing, Paris, https://doi.org/10.1787/fcb2eae0-en. [5]

OECD (2020), *OECD Digital Economy Outlook 2020*, OECD Publishing, Paris, https://doi.org/10.1787/bb167041-en. [16]

OECD (2019), *OECD Regional Outlook 2019: Leveraging Megatrends for Cities and Rural Areas*, OECD Publishing, Paris, https://doi.org/10.1787/9789264312838-en. [9]

OECD (2018), *Job Creation and Local Economic Development 2018: Preparing for the Future of Work*, OECD Publishing, Paris, https://doi.org/10.1787/9789264305342-en. [17]

OECD (2017), *Health at a Glance 2017: OECD Indicators*, OECD Publishing, Paris, https://doi.org/10.1787/health_glance-2017-en. [8]

OECD (2017), *Investing in Climate, Investing in Growth*, OECD Publishing, Paris, https://doi.org/10.1787/9789264273528-en. [2]

OECD (n.d.), *Strategic Foresight*, OECD, Paris, https://www.oecd.org/strategic-foresight/ourwork/. [18]

OECD/EC-JRC (2021), *Access and Cost of Education and Health Services: Preparing Regions for Demographic Change*, OECD Rural Studies, OECD Publishing, Paris, https://doi.org/10.1787/4ab69cf3-en. [10]

Projet de territoire Suisse (n.d.), *Homepage*, https://projet-de-territoire-suisse.ch/ (accessed on 12 April 2023). [22]

UK Government (2016), *Future of Cities: Foresight for Cities*, Office for Science, UK Government, https://www.gov.uk/government/collections/future-of-cities. [25]

UNHCR (2016), “Climate change and disaster displacement”, United Nations High Commissioner for Refugees, https://www.unhcr.org/uk/news/stories/frequently-asked-questions-climate-change-and-disaster-displacement. [12]

5 A policy roadmap to address regional inequalities now and in the future

The chapter discusses the consequences of leaving persistent regional inequalities unchecked. The first section describes how, when left unaddressed, these disparities can threaten economic growth, the provision of public services, trust, political stability and a just transition. Governments in OECD countries need to act now to ward off persistent divides between regions. The second section of the chapter presents a policy roadmap along five key priorities to guide these efforts.

In Brief

- While economic development is inherently uneven within countries due to differences in factors of production across places, wide and sustained regional inequalities can no longer be considered necessary or a "fact of life". At a time when megatrends and shocks such as the COVID-19 pandemic and Russia's war of aggression against Ukraine are impacting regions differently, they serve to highlight and sometimes compound existing weaknesses in national economies. As regional inequalities grow and persist over time in many OECD countries, they are raising costs that are becoming too economically, socially and politically high to ignore.
- Inaction on regional inequalities raises different costs:
  - **Economic costs**, as the aggregate contribution of lagging regions and/or those trapped in a vicious cycle of long-term stagnation or decline (so-called "development traps") to national growth is substantial, which means that leaving these regions with levels of economic activity below their potential is an important missed opportunity.
  - **Social costs**, as persistent inequalities challenge the capacity of subnational governments to provide adequate access to key public services and infrastructure, both in economically dynamic regions that may struggle to cater to the large numbers of people they attract and in lagging regions and/or those in a development trap where public services become stretched, of low quality or difficult to access.
  - **Political costs**, as regional inequalities, are a factor behind large regional variations in trust in government in OECD countries, with variations between countries' most and least trusting regions, ranging from below 10% to over 30% difference. These variations have given rise to growing discontent and disengagement, strain social cohesion and undermine democracy over time.
- This geography of discontent is unfolding at a time when countries need to accelerate the green transition and manage demographic changes. As megatrends are not impacting regions in the same way and lagging regions are often most likely to be adversely affected, persistent regional inequalities further hinder these regions' capacity to respond and adapt to change and, in turn, jeopardise governments' ability to make the green and digital transitions equitable and just.
- To effectively reduce regional inequalities, policy responses are warranted at the national and subnational levels of government and in a shared responsibly so as to address the concerns of and improve prospects for those regions that have been left behind, while sustaining the prosperity of the most dynamic regions. It requires taking co-ordinated and sequenced actions at different government levels across five policy priorities:
  - Ensuring equitable access to quality public services and infrastructure in all regions.
  - Boosting productivity and competitiveness.
  - Providing the right skills and quality job opportunities in regional labour markets.
  - Improving the quality of multi-level governance systems.
  - Strengthening capacity at the national and subnational levels of government.

Introduction

Chapters 2 and 3 of this report undertake a thorough analysis of regional inequality trends and drivers across OECD regions and within countries over the past two decades and conclude that these trends are heterogenous. The analysis shows a diversity of situations across OECD countries, each of which requires a diverse set of context-specific policy responses to address regional inequalities more effectively. This diversity reflects disparities in productivity resulting from differences in economic structure, the supply of skilled labour, physical capital and natural resources, and public infrastructure and strong path dependency in these spatial distributions. Such diversity may also relate to the local availability of certain amenities and is affected by labour market institutions and redistribution through taxes and benefits.

Not addressing wide and sustained regional inequalities has led to negative by-products and future remedial costs, often outweighing the costs of directly addressing those inequalities, that has become increasingly difficult, whether politically or socially, to ignore. To effectively reduce regional inequalities, policy responses are warranted to address the concerns of and improve prospects for those places that have been left behind, while sustaining the prosperity of the most dynamic regions and helping regions navigate the green and digital transitions. The chapter starts by discussing how inaction on regional inequalities can have adverse consequences on economic performance, service provision, social and political stability and the just transition in OECD countries. To encourage and guide public action, the chapter then proposes a comprehensive policy roadmap to support policy makers at different levels in their efforts to effectively address regional inequalities now and in the future.

Leaving regional inequalities unchecked: The consequences of inaction

Economic development is spatially uneven due to the differences in factors of production across regions. While cities enjoy agglomeration benefits, rural regions tend to depend highly on primary and tradeable activities. As discussed in earlier chapters of this report, pockets of economic activity and clusters tend to concentrate on space and natural resources are localised in specific geographies. Differences in factors of production translate into differences in productivity and growth potential, giving rise to unequal development patterns. Inequality in development patterns is often considered necessary or a “fact of life” of economic development. But there are important downsides to spatial inequality, especially when gaps become too high and persist over time.

This section looks at three negative by-products of regional inequalities: i) missed economic opportunities and a loss of growth potential; ii) cost implications for delivering high-quality services across the entire territory; and iii) risks of discontent and instability when they pass a certain threshold and some territories are left behind. It also examines the importance of anticipating and mitigating the potential increases of regional inequalities to deliver a just green and digital transition.

Across OECD regions, weak and strong signals of these by-products have been emerging in recent years and it has become clear that the consequences of inaction will eventually lead to even higher future remedial costs. Hence, regional policies must mitigate spatial inequality in new and better ways, moving away from quick fixes that have created dependency relationships in the past, towards a mix of muti-level, multi-sectoral policies and sound institutional and fiscal frameworks, tailored to the prospects of different kinds of OECD regions.

Spatial inequality and economic development: What does the theory tell us?

Some level of regional inequalities is inherent to and unavoidable in any country as the cycle of economic development and place-specific endowments of people and skills, firms and industries have led to the concentration of high-technology and knowledge-intensive sectors in some, predominantly urban, regions.

According to the economic literature, several studies provide some theoretical foundations for the rise of spatial inequality:

- Models of the New Economic Geography (NEG), the urban agenda and the new trade theory, have given important insights into explaining why economic activity and settlement patterns tend to concentrate in certain locations, which generates core-periphery spatial patterns. The model is based on a spatial equilibrium between the benefits and costs of agglomeration. Estimates predict that when city size doubles, productivity increases between 2-5% on average (OECD, 2015[1]).
- The cumulative dynamics also apply to superstar firms and industry clusters (Alfaro, Chen and Fadinger, n.d.[2]), showing a clear hub-and-spoke structure in the geographic distribution of agglomeration patterns of industries and plants in Europe related to superstar firms, suggesting that regional policies could have a role in building superstar-centred industry clusters.
- Studies based on endogenous growth theory and institutional economics may also reinforce these spatial outcomes. Acemoglu and Dell (2010[3]) document that about half of the between-country and between-municipality differences can be accounted for by differences in human capital and productive efficiency is determined by national factors and local institutions, such as the availability of local public goods and the security of property rights giving rise to inequality. Frick and Rodríguez-Pose (2018[4]) also find a relation between governance factors and infrastructure factors and divergence in regional growth rates. Their analysis examines the relation between city size and economic growth and finds that growth is highly dependent on adequate infrastructure and governance conditions.
- There are also studies that show the resilience of regions and cities to economic shocks and national economic recovery also differ such as the shocks of the global financial crisis, or more recently the COVID-19 pandemic and Russia's war against Ukraine. Duranton (2007[5]) showed that small, innovation-driven shocks lead to the churning of industries across cities. This may then lead to slower growth or decline in cities, following net gains or losses of industries.

When looking at time dynamics and the evolution of regional inequality over time, there are different scenarios:

- The standard neo-classical growth models using capital accumulation, labour and savings (Solow, 1956[6]), Swan (1956[7]) predicts convergence to a steady state over the long run. This means that poorer regions further away from their steady-state level will tend to grow faster and thus converge, and inequalities would then eventually decline from the bottom of the distribution.
- Williamson's curve predicts a rise in inequality and a decline over time. It suggests that in a catching-up country, a few growth poles concentrate in regions which attract the bulk of capital, knowledge and skilled workers. As productivity rises in these regions, it will lead to faster growth and increasing disparities among regions. At later stages, as higher factor costs or diseconomies of agglomeration emerge in these regions, capital is likely to move to other regions with lower capital per worker. In addition, knowledge spillover effects may enhance the reallocation of productive factors across sectors and regions, which leads to convergence in income levels (OECD, 2012[8]).
- Economic models of the NEG predict a core-periphery equilibrium but do not provide a clear prediction of the links between economic concentration and growth. These models explain why economic activities concentrate in specific geographies and sometimes benefits of agglomeration are offset by costs that arise on the concentration. The forces enhancing agglomeration typically include migration of labour, forward and backward linkages and elasticity of labour supply.

Several studies have investigated how agglomerations can benefit adjacent regions, also called "borrowed" agglomeration effects from neighbouring cities. Estimates of the benefits predict that for a doubling of the population living – at a given distance – in urban areas within a 300 km radius, the productivity of the city in the centre increases by between 1% and 1.5% (OECD, 2015[1]). Thus, evidence has shown that, more

often than not, these spillover mechanisms to less-favoured regions have a more limited effect than expected. The increasing importance of knowledge-based services has also reinforced the existing advantages of large metropolitan regions over low-density and less urbanised regions (Oliveira Martins, 2021[9]).

While spatially uneven development is regarded as the price to pay for economy-wide productivity maximisation – the overarching goal being to make the "economic cake" bigger first and then distribute it –, experience over the past decades has shown that this model has in many instances exacerbated inter-personal and regional inequalities and, in fact, failed to deliver and activate development opportunities in lagging regions. Today, inaction on regional inequalities is raising different types of costs, which are discussed in the following sections.

Regional inequalities can lead to missed economic opportunities

Many lagging, lower-income regions and regions in a "middle-income trap" have levels of economic activity that are well below their potential, both in terms of employment and productivity (EC, 2022[10]; Diemer et al., 2022[11]) and are often seen as a drag on national performance, rather than as potential assets to be exploited. Yet, the OECD has evidenced that, while there will always be inter-regional gaps, those lagging regions have opportunities to "catch up" in terms of social and economic development (OECD, 2016[12]). Leaving lagging or stagnating regions behind can not only affect the regions themselves but has important consequences for national aggregates. Indeed, while individually, the impact of these regions on national growth can be relatively small, in aggregate, the contribution to national growth of all regions with catching-up potential is substantial, even at these lower levels (OECD, 2012[8]).

An exclusive focus on the leading regions is not sufficient to drive average productivity. While the productivity frontier is mostly urban, many regions with large rural populations also do well and have been catching up to the national frontier. At the same time, those regions falling behind national frontiers include many urban regions (OECD, 2016[12]). As discussed in Chapter 3, only by generating stronger growth, fuelling the catching-up machine in all types of regions in a synchronised manner and supporting the performance of the system of regions as a whole, can national economies increase aggregate productivity and reach their total output frontier.

Regional inequalities challenge the capacity of subnational governments to provide quality public services

Differences in quality and access to public services are key determinants of inequalities between regions in OECD countries, as discussed in Chapter 2. In turn, when left unaddressed, high and persistent regional inequalities challenge the capacity of subnational governments to provide people with adequate access to public services and infrastructure.

On the one hand, economically dynamic regions and notably urban areas may have difficulties maintaining infrastructure capacity and/or keeping pace with infrastructure expansion needed to cater for the large numbers of people they attract. The consequence may be shortages in affordable quality housing and congestion problems (OECD, 2015[1]). This creates a challenge, particularly for cities' lower-skilled workers who may work in more precarious jobs and struggle with high urban costs of living, long commutes and air pollution problems.

On the other hand, lagging regions typically get trapped in a vicious cycle of decline that affects the quality of local public service provision, which becomes increasingly expensive. Regions that have suffered from long-term industrial decline have seen their unemployment rise and labour force participation decline and, in many cases, they have lost competitiveness and have not successfully transitioned into other areas of competitive advantage. As a result, public services in these regions have become stretched, are of low quality or are difficult to access, which may then be a catalyst for further outmigration of higher-skilled

workers and their families. Furthermore, many of these regions are also often facing accelerated demographic changes, including population decline and ageing, pushing up the demand for health and other social services (OECD, 2022[13]).

The physical infrastructure needed to provide good quality public services can be more complex and expensive in lagging regions and attracting highly skilled people poses an additional challenge. Many rural schools, for instance, are facing or will soon face declining student numbers, generating smaller schools, class sizes and student-teacher ratios (OECD, 2021[14]). While smaller sizes can present some opportunities such as more teaching time per student, many small rural schools operate in isolation and under capacity with a limited educational offer and their principals and teachers struggle with multiple roles. The challenges are even larger in remote rural regions with low population densities. With fewer people spread over a wider area, economies of scale are difficult to achieve.

In principle, differences in relevant aspects such as population density and demographic structure translate into unavoidable higher costs of service provision in certain local units and regions within countries. These higher per-unit costs translate into lower quality services, which in turn could lower the attractiveness of the regions and incentive further drops in population and tax revenue of these places leading to negative downward spiral dynamics. Given that, across many OECD countries, national constitutions recognise health and education provision as core rights, maintaining services in these places represents a high cost and often leads to the transfer of resources across places and dependency dynamics.

Regional disparities in access to quality services, especially essential ones, can lead to increased spending on social support services and more complex healthcare issues for instance and, in turn, lower tax revenues (related to lower employment outcomes from inactivity) (OECD, 2022[15]). In education, a lack of access to quality opportunities can lead not only to lower lifelong employment opportunities, incomes and well-being but also to higher intergenerational inequalities (Hanushek and Woessmann, 2020[16]). In healthcare, a lack of access to quality care can translate into worse health outcomes, higher incidence of chronic disease, increased mortality and ultimately to a lower quality of life (OECD, 2021[14]). Migration induced by inadequate access to services can lead to brain-drain and exacerbate existing gaps in the availability of educated workers such as doctors and teachers in rural areas. Against this backdrop, ensuring the vitality of lagging places by investing in framework conditions for development or making use of technological solutions and network effects to deliver services can act as effective measures to avoid future, and potentially considerable, remedial costs.

Regional inequalities threaten social and political stability, giving rise to the geography of discontent

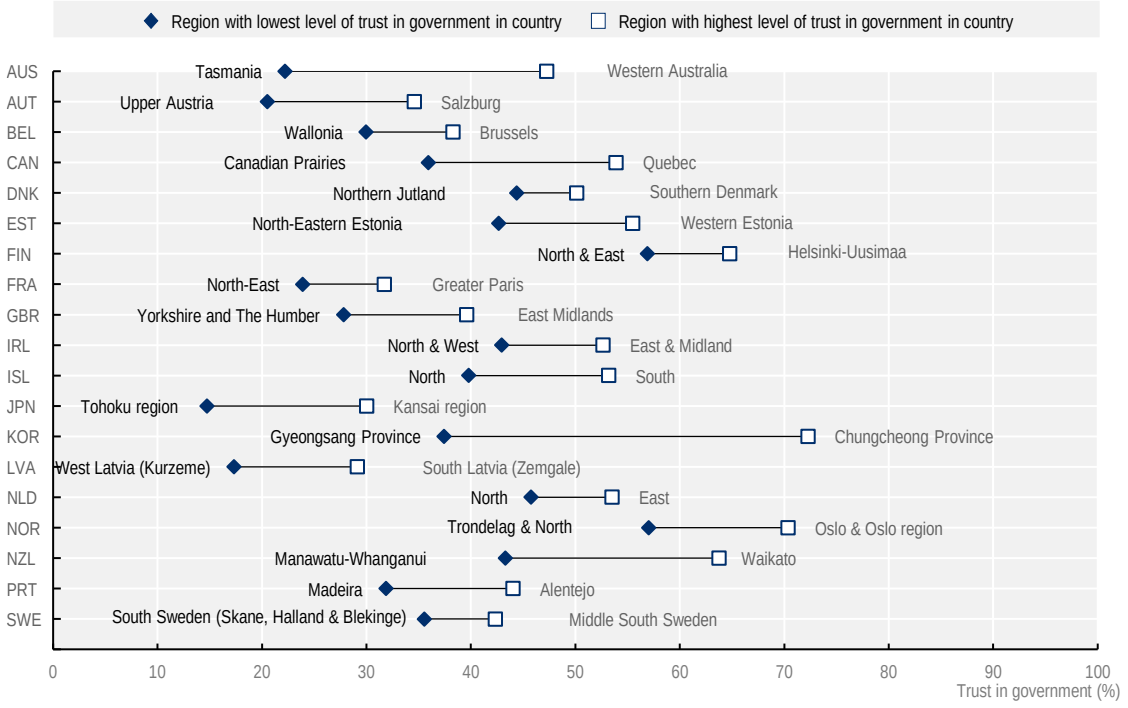
Regional inequalities are a factor behind large regional variations in trust in government in OECD countries. Data from the 21 countries included in the OECD Trust Survey reflect variations between each country's most and least trusting region, ranging from under 10% in Australia to a more than 30% difference in Korea (Figure 5.1). This suggests government trust deficits in many OECD countries have a territorial cleavage (OECD, forthcoming[17]; 2022[18]). Levels of trust in OECD territories have also been in flux in recent years, having declined in certain regions and risen in others.

There are a number of ways in which regional inequalities can contribute to trust deficits in certain places. Empirical evidence from OECD countries suggests that places with higher levels of government distrust are primarily: i) comparatively wealthy areas that have been in long-term economic decline (e.g. certain parts of northern Italy); and ii) middle-income areas that have been unable to sustain economic growth because they are not sufficiently innovative to compete with more productive regions (this primarily includes rural areas and small or medium-sized cities) (Dijkstra, Poelman and Rodríguez-Pose, 2020[19]). These findings reflect the growing divides between places that feel left behind by globalisation and technological change, and those that may benefit from the opportunities offered by megatrends, and even more so since the global financial crisis.

Regional disparities in trust in government reflect the differing levels of success that national and subnational governments have had in dealing with their citizens' challenges and needs. Furthermore, citizens tend to trust subnational governments more than national ones. In 2020, for example, trust in regional and local authorities across European Union (EU) member states was nearly 10% higher than trust in national governments (OECD, forthcoming[17]).

Figure 5.1. Regional disparities in national government trust, 2021

Share of respondents that trust the national government in OECD regions with the highest and lowest level of trust by country



Note: Proportion of respondents that "trust" the national government based on an aggregation of responses from 6-10 on the scale, based on responses to the question: "On a scale of 0 to 10, where 0 is not at all and 10 is complete, how much do you trust each of the following? The national government". "OECD" presents the unweighted average across countries. Finland's scale ranges from 1-10 and the higher trust/ neutral/ lower trust groupings are 1-4/ 5-6/ 7-10. New Zealand shows trust in civil service as respondents were not asked about trust in the national government (note that trust in civil service on average tends to be higher than trust in national government). Colombia, Luxembourg and Mexico are not shown due to data unavailability.

Source: OECD (2022[18]), *Building Trust to Reinforce Democracy: Main Findings from the 2021 - OECD Survey on Drivers of Trust in Public Institutions*, https://doi.org/10.1787/b407f99c-en.

StatLink https://stat.link/ig316r

In addition to long-term economic outcomes, there is also evidence to suggest that trust in government can be undermined by more short-term shocks to regional and local economies, such as increases in unemployment. In the United States, for instance, voters in local communities experiencing significant job losses in the manufacturing sector have shifted strongly towards anti-establishment candidates in recent years (Guriev and Papaioannou, 2020[20]). In the European Union, changes in regional unemployment rates between 2008 and 2014 were found to have a causal effect on decreasing trust in national parliaments and increasing votes for anti-system parties. An unemployment increase of 5 percentage

points was associated with a drop of 3.65 percentage points in trust towards a country's national parliament (Algan et al., 2018[21]).

While short- and long-term socio-economic outcomes are important determinants of trust, they often fail to fully explain its territorial variations. An additional factor that is thought to contribute to territorial divides in trust in government is the quality of local public service delivery. In Europe for instance, residents in a rural area or town were found to have a lower average level of trust in government compared to those living in cities, even after controlling for demographic, economic and cultural differences among cities and rural areas (EC, 2022[10]). Researchers found that a key factor behind this was dissatisfaction with local public services (notably education and healthcare) (Mitsch, Lee and Ralph-Morrow, 2021[22]). This finding is also reflected in recent OECD work in countries like Finland and Norway, where responsiveness in delivering public services has been identified as one of the most important determinants of citizen trust in national and local governments (OECD, 2022[23]; 2021[24]).

Persistent regional inequalities raise the risk that territorial divides in trust experienced by OECD countries will continue to grow and with them the risk of making the economic, social and political costs of inaction even higher:

- Lower levels of trust have been shown to have a negative impact on long-term regional economic performance (Algan and Cahuc, 2014[25]). This is because trust deficits can limit productivity through various channels, including trade, financial intermediation, the organisation of firms and labour markets. For example, a lack of trust may inhibit a country's performance by increasing transaction costs for businesses.
- Lower levels of government trust may affect the willingness of citizens to accept government policies, including in a crisis situation. Evidence collected in the early part of the COVID-19 pandemic provides a stark illustration of this effect. In the European Union and the United States, for example, mobility data show that, on average, people complied with COVID-19 health restrictions on movement less consistently when they did not trust their governments (Bargain and Aminjonov, 2020[26]; OECD, 2021[27]). At the regional level, low trust in institutions was also associated with higher excess mortality in EU and OECD countries during the first year of the pandemic (after controlling for economic and demographic differences), which may reflect, at least in part, lower overall compliance with health measures in these areas (Diaz-Ramirez, Veneri and Lembcke, 2022[28]).

Persistent economic stagnation or decline in many regions of OECD countries has given rise to growing discontent and resentment of the political and economic status quo. This trend has become apparent across the OECD, as indicated by growing political polarisation, growing political fragmentation, as well as the collapse of established political parties, record-low voter turnout and the surge of new or newly reconfigured parties from across the political spectrum.

Persistent regional inequalities can jeopardise a just green and digital transition

As earlier chapters discuss, megatrends such as climate and technological change are not impacting regions the same and lagging regions are often the one standing to be most affected. Persistent regional inequalities further hinder these regions' capacity to respond and adapt to change and, in turn, jeopardise governments' ability to make this transition equitable and just.

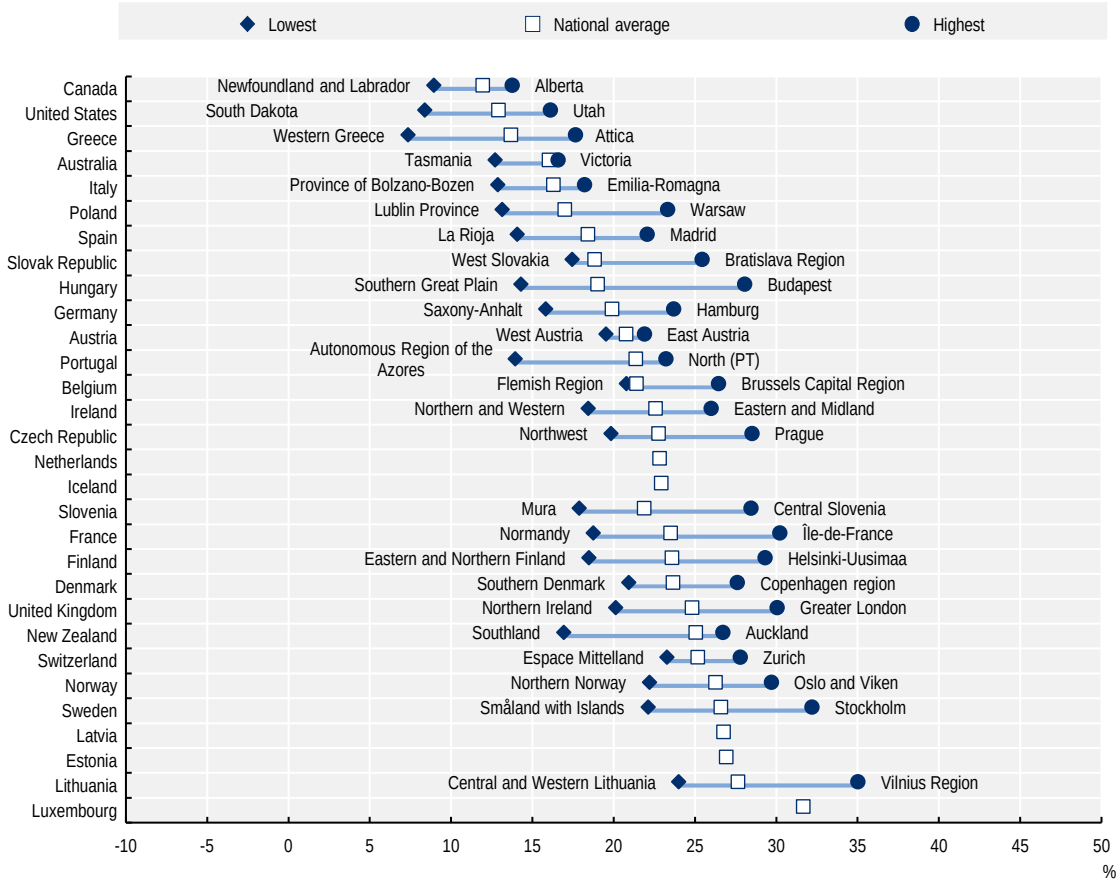
In the green transition, climate adaptation challenges and opportunities differ sharply across regions as some concentrate on employment and carbon emission-intensive activities. Furthermore, average wages in the key manufacturing sectors most likely to be impacted by the green transition are often higher than average wages in the economy as a whole, meaning that job loss or job transformations pose risks for wealth in regions hosting them (OECD, 2022[13]). These regions are often already lagging, implying they may have fewer economic resources to absorb shocks and take advantage of opportunities. In the

European Union, for instance, the largest share of regions most vulnerable to the industrial transition to climate neutrality lag on several socio-economic characteristics, especially gross domestic product (GDP) per capita and average regional wages (OECD, 2023[29]).

The OECD finds that the share of green-tasks jobs differs on average by 9 percentage points between the regions with the lowest and highest share (Figure 5.2). In some of these regions, workers are also exposed to poverty risk or are vulnerable on account of narrow, limited skills (OECD, 2023[30]). Regions also differ in their access to key infrastructure some of these industries will require, notably for hydrogen, carbon capture and storage and zero-emission freight transport, which is key to value chains. Addressing inequalities between regions can therefore strengthen their capacity to weather these changes and take the actions needed to ensure the success of the green transition.

Figure 5.2. Regional disparities in green-task jobs within countries

Share of green-task jobs across and within countries, OECD regions, 2021 or last available year



Note: Last available year. 2019 for the UK. 2020 for Iceland. 2021 for Australia, Canada, EU countries, Norway, New Zealand, Switzerland and the United States. According to the OECD, green-task jobs are defined and analysed at the occupation level based on the greenness of their related task content.

Source: OECD (2023[30]), *Job Creation and Local Economic Development 2023: Bridging the Great Green Divide*, https://doi.org/10.1787/21db61c1-en.

StatLink https://stat.link/it4csf

Similar to the green transition, the challenges and opportunities emerging from the digital transition are uneven across regions. The opportunities being created by digitalisation differ largely due to differences in connectivity, the share of occupations amenable to remote work and the digital skills required to succeed in this new economy (OECD, 2021[31]). The rise of remote working, increasing automation and the digitalisation of services are improving productivity and well-being for many people (see Chapter 3). Remote working, for example, is redefining how and where people choose to work, proving an important opportunity to improve the work-life balance by reducing commuting times and encouraging more flexible working arrangements. At the same time, it is redefining where higher-income higher-skilled workers choose to live, which will impact the future development of regions and transportation systems, and impact carbon emission patterns.

Adapting to the digital transition requires that people and firms in regions have the right digital skills but large gaps remain. The share of people using the Internet in regions with the highest use is 10 percentage points higher than in the region with the lowest use, while, despite an acceleration since COVID-19, small and medium-sized enterprises (SMEs) trail large firms in the adoption of digital tools such as cloud computing and big data for instance (OECD, 2023[32]). This can lead to significant differences in the ability of people and firms to position themselves for the new digital environment.

The challenges posed by the green and digital transition can be turned into opportunities to boost development in lagging regions and reduce regional inequalities. Climate mitigation policies for instance can support prosperity and well-being in rural regions. This can be realised through more sustainable land management, higher valorisation of ecosystem services, making use of innovative production processes around agriculture, mining and renewable energies and new modes of transportation. Similarly, remote working can bring new growth opportunities for rural economies. Remote working holds the potential to create new job opportunities outside large cities because of more affordable and suitable housing and office spaces with better access to environmental amenities (OECD, 2022[33]).

A policy roadmap to address regional inequalities effectively

For a long time, most policies to address regional inequalities aimed at compensating lagging regions and consisted of top-down, often short-term, subsidy interventions (e.g. for infrastructure and setting up public services) to the poorest regions. They mostly resulted in distorted markets and harmed the development chances of these regions in the medium and long terms. Such policies also often focused on keeping declining industrial sectors alive so as to protect local jobs, even when these sectors were condemned in the long term. Overall, these government responses failed to reduce inequality, generate new jobs in lagging regions or trigger a culture of economic dynamism (OECD, 2012[8]). Moreover, these actions had unintended consequences, creating a culture of dependency on the part of recipient regions, many of which are now trapped in a vicious circle of under development.

Effectively addressing and mitigating regional inequalities is no small task. These inequalities are not marginal but touch on fundamental issues in people's lives, from access to healthcare to employment. Regions – especially lagging regions – often struggle, not just on one front but on many. This means that mitigating regional inequalities effectively cannot be done with siloed policy responses but requires taking on multiple systemic and interrelated challenges at the same time.

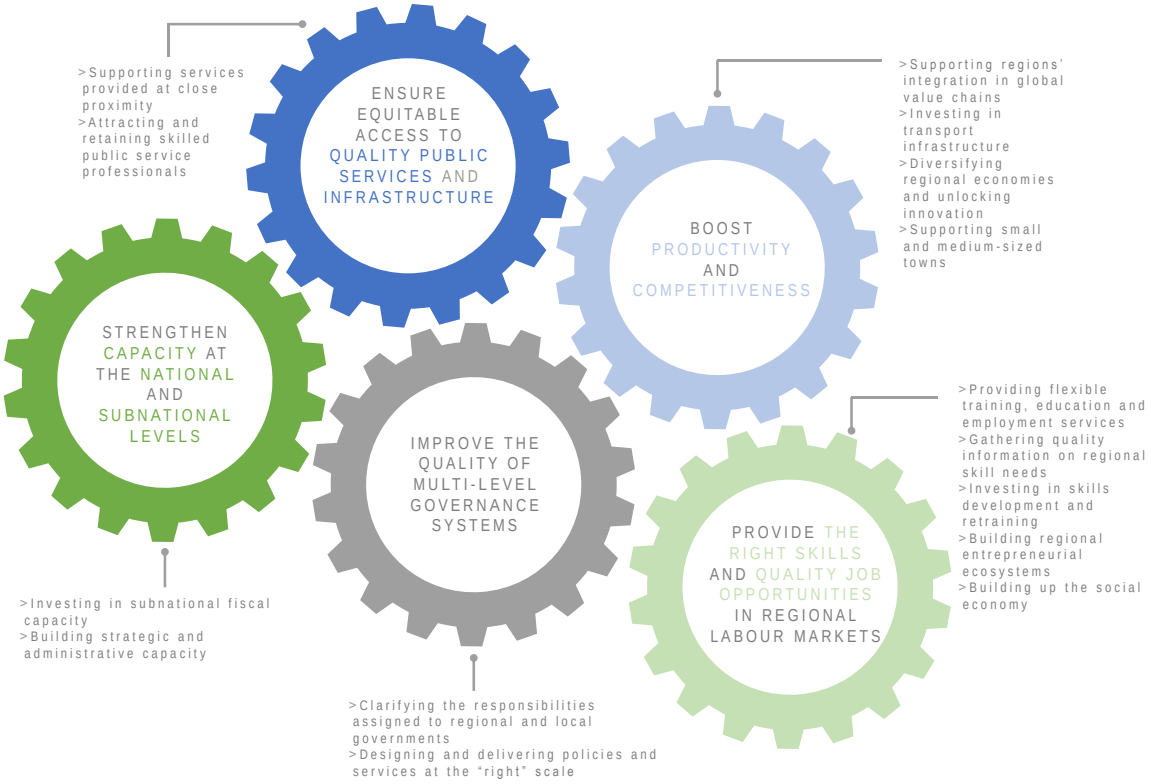
To guide policy efforts to address regional disparities in a way that both stimulates catching up in lagging/stagnant regions and sustains prosperity in the most dynamic regions, this section presents a policy roadmap structured around five priorities. These priorities, presented in Figure 5.3, should not be considered in isolation. Rather, policy makers should take co-ordinated and sequenced steps across all five to create equal opportunities across regions.

- Ensuring equitable access to quality public services and infrastructure in all regions.

- Boosting productivity and competitiveness.
- Providing the right skills and quality job opportunities in regional labour markets.
- Improving the quality of multi-level governance systems.
- Strengthening capacity at the national and subnational levels.

How to address regional inequalities depends largely on local economic, socio-demographic and geographic circumstances and differs from place to place. It means that delivering on the policy roadmap requires galvanising action across a wide range of governmental and non-governmental actors at different levels. This is best done through a place-based approach, one that recognises the heterogeneity characterising OECD regional economies, in terms of place (i.e. there is a continuum of places with different characteristics and different economic specialisations), activities (i.e. manufacturing, tradeable and non-tradeable services) and firms (i.e. in terms of productivity levels and growth) (OECD, 2019[34]; 2016[12]; Barba Navaretti, 2021[35]; Iammarino, Rodríguez-Pose and Storper, 2018[36]). The following sections discuss each of the five policy priorities in detail and present concrete policy measures and experiences across OECD countries.

Figure 5.3. A policy roadmap to address regional inequalities



Ensuring equitable access to quality public services and infrastructure in all regions

Why it matters

Improving access to quality public services can offer high social returns to investment including not only through better education and healthcare outcomes but also improved lifelong and intergenerational income and well-being outcomes. Indeed, bridging access gaps can generate higher tax revenues and decreased spending on social support services and more complex and costly health services. As the COVID-19

pandemic demonstrated, investing in reducing inequalities in service provision can also improve the resilience of systems to respond to unexpected shocks (OECD, 2022[15]).

Policy measures

Supporting services provided at close proximity and through flexible and/or digital models

The provision of basic services such as primary care remains essential in keeping the need for more specialised services at bay. OECD countries have striven to bridge access gaps in places lacking other options, including through innovative and digital solutions, such as expanding telemedicine and developing digitally based sharing mobility services. These strategies however often need to be accompanied by substantial transversal investments to tackle rural-urban gaps in (digital) skills and connectivity (OECD, 2022[15]).

The costs of service delivery not only depend on density or absolute or relative distances but also a wide range of other factors including economies of scale and scope. Policy efforts have focused on pursuing integrated and flexible approaches to the provision of services, notably by offering different types of related services in a single location, in order to broaden access, reduce costs and improve outcomes, especially for underserved communities in rural or remote regions.

Country examples

- In **Finland**, municipalities have streamlined service delivery to immigrants in communities with a high share of foreign-born population in multi-service centres. In these centres, public employment services collaborate with municipal services to help foreign-born jobseekers find employment or help them enrol in education (OECD, 2020[37]).
- In **France**, a network of over 1 000 Public Service Houses (*Maisons de service au public*) delivers public services in low-density or isolated territories through one-stop-shops, thus lowering fixed costs and staff needs for the different services. They offer a range of services, from postal services, public transport ticketing and energy utilities, to unemployment insurance and welfare services. Furthermore, the Ministry of Social Affairs and Health launched the Health Territory Pact (*Pacte territoire santé*) to promote the recruitment and retention of doctors in underserved areas. This pact includes a mix of measures including financial incentives, the creation of new multidisciplinary medical homes allowing physicians and other health professionals to work in the same location and the promotion of telemedicine (OECD, 2021[14]).
- In **Japan**, the Small Stations initiative creates basic service hubs to help sustain rural communities around small, multi-functional cores. Their offer includes administrative services, healthcare and shopping opportunities; transport networks are arranged to facilitate access to the population of the surrounding rural areas (OECD, 2016[38]).

Attracting and retaining skilled public service professionals

This is especially important at a time of high labour demand and staff shortages, especially in the care sector. Policy measures to address this challenge typically focus first on improving the attractiveness and working conditions in these professions, including working hours, pay, job security and access to training. Specific support for workers interested in moving into the care sector can also be part of the solution, for example in the form of career guidance and training. Additional incentives – financial or otherwise – can then help encourage professionals to take up work in underserved locations (OECD, 2016[39]). This can take the form of special scholarships to obtain certain qualifications and could be combined with return-of-

service obligations, one-off payments for those moving to underserved areas and to support their installation, or recurrent bonuses (OECD, forthcoming[40]).

Country examples

- In **Australia**, the Workforce Incentive Program, implemented in early 2020, provides targeted financial incentives to doctors and general practitioners to encourage service delivery in rural and remote areas. Financial incentives are linked to both the level of remoteness and the years of service provided. In the most remote areas, doctors are eligible for an annual payment of up to AUD 60 000, about EUR 40 000. But relocation packages can go beyond direct financial incentives and include rewards through better career prospects and skill development (OECD, 2021[14]).
- To encourage and support workers interested in moving into the care sector and make up for staff shortages in these professions in some regions, regional agencies in the **Netherlands** run campaigns to improve the public image of long-term care, providing students with short lectures and training sessions on regional labour market needs (Georgieva, Downes and Bachtler, 2021[41]).

Boosting productivity and competitiveness

Why it matters

Stagnating productivity growth and its consequences for well-being contribute to social and political polarisation (see discussion earlier in the chapter). Inversely, more productive regions tend to offer better jobs that translate into better wages and incomes for households, and more balanced development within countries. These places are also more likely to generate the tax revenues necessary to finance public services and infrastructure, such as health, education, transport and social support (OECD, 2020[42]; Tsvetkova et al., 2020[43]).

Policy measures

Supporting regions' integration in global value chains (GVCs)

As discussed in Chapter 3, operating in global markets exposes regions to practices of the global productivity frontier and makes them less constrained by country-specific limitations (e.g. technological, financial and related to market size) or equilibria (e.g. when frontier regions already dominate the local markets) (OECD, forthcoming[40]). An advantage of healthy tradeable sectors – especially tradeable services and manufacturing – is that they can enhance productivity in all types of regions – i.e. predominantly urban or rural – although tradeable subsectors and mechanisms in place might vary depending on the type of area (OECD, 2016[12]).

The impact of the war in Ukraine on GVCs has created a renewed focus on reshoring and nearshoring critical industries in regions. This is part and parcel of a broader trend of the macro-regionalisation of supply chains since the global financial crisis, which has been further accelerated by the COVID-19 crisis, albeit recognising that diversified supply chains can also be a source of resilience (see discussion on sectoral specialisation and diversification in Chapter 3). Regions must navigate and make the most of this new global environment and the OECD Programme on Regions in Globalisation provides an analytical framework to help examine and understand subnational drivers of attractiveness to key international target groups (Box 5.1).

Box 5.1. Rethinking regional attractiveness in the new global environment

Recent crises have prompted regions in OECD countries to rethink their participation in globalisation, as well as their relative attractiveness to investors, talent and visitors. As a result, regions need to better understand the structural challenges emerging or reinforced by these crises (i.e. COVID-19 pandemic, Russia's war of aggression against Ukraine) and existing megatrends (e.g. digitalisation and demographic change) and how their international profiles may have changed, while maintaining a focus on providing benefits to local residents and businesses and preserving environmental resources.

To help regions better understand their position in the new global environment and rethink their attractiveness strategies, the OECD has designed an innovative and multidimensional methodological framework that first considers and maps a region's international connections across four families of connections: business (e.g. foreign direct investment [FDI] projects, trade, employment in foreign-controlled businesses, etc.), human (employment, migration and visitors), knowledge (international students, research and development [R&D], patents) and infrastructure (broadband, ports, airports, stations). However, simply understanding a region's position in the world is not sufficient – other tools need to be identified to help strengthen that position.

Identifying available policy levers to enhance international connections and more effectively attract specific target groups (e.g. investors, talent and visitors), for example, requires a closer examination and understanding of subnational drivers of regional attractiveness. To do this, the OECD regional attractiveness framework considers global engagement beyond international connections and economic factors alone. In total, the methodology considers a dashboard of over 50 indicators to develop regional attractiveness profiles, covering 14 dimensions of attractiveness, across 6 domains, at the level of large regions:

- Economic attractiveness (e.g. innovation, entrepreneurship and labour market).
- Connectedness (e.g. transportation, logistics and digitalisation).
- Resident well-being (e.g. health, education and social cohesion).
- Natural environment (e.g. environment and natural capital).
- Visitor appeal (e.g. tourism and cultural capital).
- Land use and housing (e.g. usage and affordability).

The OECD approach provides regions with a graphical representation in the form of an "attractiveness compass" that highlights the strengths and weaknesses of regions across the six domains. It enables regions to compare their attractiveness relative to regional performance in their country, the European Union and the OECD. As a diagnostic tool, regional profiles can highlight to policy makers those areas where attractiveness can be strengthened. Furthermore, they can provide useful evidence to inform decisions concerning the various levers at their disposal to enhance regional attractiveness to key target groups, within the context of a region's development priorities, trends and ambitions.

Source: OECD (2023[44]), "Rethinking regional attractiveness in the new global environment", OECD, Paris.

Investing in transport infrastructure

Transport infrastructure can contribute to leveraging agglomeration economies of metropolitan regions and expand the benefits of well-functioning cities to other lower-density regions, including in terms of knowledge and innovation diffusion and links to financial institutions, which are crucial to entrepreneurship, firm growth and public infrastructure investment. To help create new economic activity in lagging regions,

transport infrastructure investments call for complementary policies supporting the (re)activation of unutilised resources, such as coupling FDI attraction policies with investment in major international transport hubs (OECD, 2020[45]).

Developing transport infrastructure that maximises the accessibility of opportunities for people and firms requires accounting for functional relationships across space that often go beyond administrative boundaries. A functional approach to transport infrastructure accounts for the diversity of scales and can thus help fit transport infrastructure to the needs of people and workers living in a place (Dijkstra, Poelman and Veneri, 2019[46]). This approach has important governance implications and requires incentives to work (see the following section on multi-level governance).

A functional approach is especially important to leverage rural-urban interlinkages through inter-regional transport infrastructure, inter-municipal co-operation, urban-rural partnerships, etc. Accessibility to metropolitan areas (through distances or driving times) is a powerful determinant of the "agglomeration economies" that rural areas can borrow from urban areas (Fadic et al., 2019[47]) and thus of the productivity growth potential that governments can leverage through better transport infrastructure. The functional approach is also behind the OECD definition of functional urban areas (FUAs) for instance, which delineate metropolitan areas' boundaries through labour market interactions between cities and their surroundings (OECD, forthcoming[40]).

Country example

- In **Germany**, the Branderburg *Land* implemented the Connecting Strengths strategy based on the promotion of core regional growth areas and clusters. The strategy capitalises on regional "strengths" including new forms of work and technologies, renewable energy, mobility, organic farming and tourism while leveraging on vertical and horizontal co-ordination between actors across themes, sectors and ministries. In the future, the strategy will evolve with an approach based on growth corridors to strategically connect people, businesses, governments and R&D along existing railway lines to better connect metropolitan and rural areas (Land Branderburg State Chancellery, 2021[48]).

Diversifying regional economies beyond their traditional strengths and unlocking innovation

Economic diversification is important to boost productivity and competitiveness, especially in lagging regions where innovation creation and uptake often lag behind metropolitan regions, weighing down on aggregate productivity, income levels and overall well-being (OECD, 2022[49]). Focusing on labour-augmenting innovation that improves job opportunities and wages can contribute to dynamically stimulating lagging regions and bend the trend of high-paying jobs concentrating in certain, often metropolitan, regions (Storper, 2023[50]).

A broad approach to innovation consists in promoting technology and non-technology-driven innovation, building innovation competencies of SMEs, better connecting regional innovation actors and stronger engagement with regional innovation cluster organisations, creating a stronger regional innovation ecosystem and linking innovation with broader regional development goals. It also means supporting innovative entrepreneurship to generate economic and industrial diversification and, through this, diversify innovation potential (OECD, 2021[51]). The OECD has developed a self-assessment toolkit for regions that allows national and regional policy makers to implement up-to-date assessments of bottlenecks for innovation diffusion in different regions. The toolkit provides a regional innovation profile (relative to other

OECD and EU-27 regions), quantifies the strength of different innovation diffusion channels in the region and allows policy makers to engage local stakeholders to gather their views on actions for improvement.

Country example

- In **Italy**, Piedmont's regional innovation policy aims to strengthen regional innovation capacities in order to boost regional competitiveness and foster innovative and dynamic enterprises. Since its inception, the policy has supported collaborative R&D, including through innovation clusters and the promotion of partnerships in important areas such as the smart factory, Industry 4.0, life sciences and the bioeconomy. Yet, Piedmont's strong concentration in manufacturing and sophisticated and specific innovation activities in local core industries are at risk of decline due to ongoing industrial transitions. Moreover, where innovation does occur, it tends to be created by larger firms, with only limited innovation by SMEs that dominate Piedmont's industrial system. In recognition of these challenges, the Piedmont Regional Government is taking a fresh look at its innovation policy design, implementation, monitoring and evaluation to prepare its smart specialisation strategy and revisit the current innovation cluster model that supports innovation in the region (OECD, 2021[51]).

Supporting small and medium-sized towns

Smaller urban areas are increasingly being seen as potential motors of regional development and catching up, although they are extremely heterogeneous in terms of development trajectories and underlying driving factors. They hold great potential to enable more polycentric development and greater territorial cohesion through a more balanced diffusion of activities and opportunities across space while helping boost broader territorial development by providing services and amenities to surrounding territories.

In this respect, intermediary cities can offer an attractive alternative to large metropolitan areas, especially to people looking for more affordable housing and better environmental quality and, in turn, boost well-being and reduce many of the negative externalities often presented by larger metropolitan areas, including urban sprawl and pollution, whilst also helping to preserve natural resources and landscapes.

In some OECD countries, urban strategies and programmes are no longer limited to addressing urban challenges characteristic of large metropolitan areas but also encompass specific visions and measures for smaller and medium-sized towns with the aim of increasing their innovation capacity and transition potential and preventing them from losing their socio-economic function.

Country examples

- In **Belgium** (Flanders), a document outlining a new urban vision outlines a common agenda for 34 regional cities. Within this approach, the government earmarks 10% of the 2021-27 Flemish European Regional Development Fund (ERDF) budget to 11 smaller, regional cities (*Centrumsteden*). Thematic interests are aligned with Flanders' long-term policy framework, Vision for 2050, whereas multi-level governance and horizontal co-operation are the strategic objectives in order to bridge the gap between these cities and surrounding territory (Georgieva, Downes and Bachtler, 2021[41]).

- In **France**, the Small Towns of Tomorrow programme (*Petites villes de demain*) was launched in 2020 and will mobilise EUR 6 million over 2020-26 with the objective to revitalise over 1 600 small towns and municipalities, especially in declining regions. The programme aims to strengthen the capacity of elected officials and intercommunal bodies in these places to implement projects that leverage opportunities arising from the green transition and make these places more resilient (Agence de la Cohésion des Territoires, 2023[52]).
- In **Norway**, the recent white paper *Vibrant Communities for the Future* focuses on districts and the challenges they face (e.g. skills and labour shortages, high age dependency ratios, quality of public services, challenges to business development). The white paper provided for two commissions to report on aspects of district policy – one on the role of businesses and the other on demographic challenges. In addition, a "youth panel" was set up to provide insights into what makes, or would make, district life attractive to younger people. Under the white paper, a study was commissioned by the Ministry of Local Government and Regional Development (KDD) to explore the role of small towns in regional development. The study highlights the diversity of Norwegian small towns and settlements outside major agglomerations and notes that, unlike major urban centres, they have not been a focus of policy in spite of their potential for stimulating regional development. A new strategy has focused on tapping the potential of small towns and reinforcing their role as "specialised" centres for service provision and makes concrete proposals to develop partnerships, digital technologies, greater collaboration and potential co-location of government (Ministry of Local Government and Regional Development, 2020[53]).

Providing the right skills and quality job opportunities in regional labour markets

Why it matters

Geographic inequalities in the number and quality of jobs available are large. Many policy responses to regional inequalities have given priority to distributing job opportunities more equally across regions, addressing regional skill imbalances, improving regional labour market outcomes and forecasting skill needs at the regional level to alleviate risks associated with structural change, such as industrial transitions.

Policy measures

Providing flexible training, education and employment services

In the context of the knowledge economy and as skills become more important to innovation and growth, the availability of a skilled workforce is increasingly important to firms' decisions to locate, remain and/or expand in a locality or region. In regions where quality job opportunities are rare, workers and young people have lower incentives to invest in their human capital and to increase labour market participation (OECD, 2020[54]). Meanwhile, businesses that lack qualified staff are unlikely to innovate and create good-quality employment. Wages and productivity are low and higher-skilled workers and innovative employers have the incentive to move to economically more dynamic areas leaving behind a low-skilled workforce and high unemployment (OECD, forthcoming[40]).

Flexible training, education and employment services are required to proactively respond to skills gaps that may act as barriers and obstacles to business growth and expansion. Providing workers with training in place-sensitive skills, which are relevant in the local context, can be one solution. For example, while the demand for basic digital skills will likely grow in all places, demand for more specialised skills may be more regionally concentrated. However, in addition to training workers, employers need to create the corresponding job opportunities to make sure that qualified workers can be retained and that their skills

are put to good use. It is also essential to increase the visibility of learning and training offers and raising awareness among firms and potential learners to facilitate their participation.

In some cases, longer-term skills strategies are devised, such as for growing industrial sectors, which can increase the relevance of the training offered. However, regions and localities need to be careful to avoid overspecialisation and "lock in" to a limited rage of sectors. To ensure lifelong learning becomes a reality, local education and training systems also need to better adjust to the needs of workers, for example by offering flexible learning modules and after-hour classes (OECD, 2014[55]).

Country examples

- In **Latvia**, Public Employment Services offers support with taking up job offers, including subsidised employment or attending training at distant locations. Jobseekers who receive a job or training offer more than 15 kilometres away are eligible for temporary support of up to EUR 150 per month to cover transport or accommodation costs. Between 2013 and 2017, more than 9 000 workers benefitted from this support, a third of them under the youth guarantee. Evaluations show good results: receiving mobility support had positive employment and earnings effects including training participation. In practice, workers' ability to take up a distant job offer will of course also depend on factors such as their family situation or on whether they own a private vehicle or depend on public transport (OECD, 2019[56]).
- In **Sweden**, employers can report their skill needs and work with education providers and public authorities to adapt vocational education programmes on regional skills platforms. Regional governments usually chair the platforms but all actors contribute to coming up with tools and activities needed to improve local dialogue, co-ordination and knowledge accumulation. Furthermore, the Swedish Job Security Councils provide workers at risk of collective dismissals a dedicated coach and a range of personalised services, including guidance and advice, training, financial support and business start-up support. Councils are financed through an employer levy of 0.3% and are run by social partners based on sectoral or cross-sectoral collective agreements (OECD, 2019[57]).
- The Rural Innovation Initiative in the **United States** seeks to assist rural regions interested in building local workspaces for remote workers, as well as creating digital skills training programmes to give residents the skills to take on remote jobs or start their own companies.

Gathering good-quality information on regional skill needs

Access to quality information on regional skill needs is the first step to steer investment towards in-demand skills. Skill forecasting and intelligence at the regional level can be effective particularly if it brings together local stakeholders such as industry organisations, and education and training providers, with national and regional authorities. Skill anticipation, however, should also fit into a national framework to prevent fragmentation.

Investment in the supply of skills alone will not be sufficient to improve job quality and the resilience of regional economies. The degree to which employers are demanding and using skills also has to be taken into account. There are considerable variations in the supply and demand for skills at the regional and local levels (OECD, 2014[55]) and these may very well increase as megatrends accelerate. Some regions can fall into a vicious circle known as "low skill equilibrium", i.e. it does not pay for people to invest in skills when skills are not valued by employers. At the same time, those who do not attain skills move away to better-quality jobs elsewhere. In such regions, skills policies need to be embedded in a broader drive to

support economic development. This can include helping existing firms to move towards more skills-intensive, higher-value product market strategies.

Policy makers also need to pay attention to regions and places which are experiencing persistent problems of unemployment, in particular youth unemployment and labour market exclusion. Immediate barriers to work can include a lack of affordable childcare, poor transport links and complex welfare arrangements that make reconciling work and benefits difficult (OECD, 2014[55]). In the longer term, living in areas which are isolated from the labour market and ill health can become more persistent barriers to employment. As the employment barriers experienced by individuals become more complex, a joint approach is often needed to tackle them, involving employment service providers, vocational education and training institutions, economic development agencies and social welfare organisations.

Investing in skills development and retraining

Skills development and retraining are vital to ensuring that workers have the right skills to prosper in a changing world of work and are a prerequisite for making the green transition a "just transition". New skills will be needed throughout the economy, whether it is retraining construction workers on environmentally friendly materials and techniques, or reskilling workers in automotive for electric vehicle production. The jobs and skills needed will differ geographically: some regional and local labour markets will have people with skills that can be easily redeployed and others not (OECD, 2023[30]).

In the context of rapidly transforming labour markets, workers with skills that are becoming outdated or obsolete require early support. Demographic trends, coupled with industrial transitions, including through digitalisation and automation, will likely bring about major changes in the skills supply and demand in local labour markets. In the past, some regions that underwent such heavy structural change experienced high numbers of layoffs with long-lasting negative consequences (OECD, 2018[58]). Helping workers affected by structural transformation avoid unemployment is better for their employment prospects, earnings trajectories and human capital development, and it is less costly for the public budget than providing support after dismissal (OECD, 2013[59]). Still, across the OECD, at-risk workers are less likely to participate in training or use guidance services than other workers (OECD, 2021[60]). One effective solution for identifying workers with potentially outdated skills can be to target specific groups of workers, for example at firms or in sectors facing declining demand or high risk of automation.

The extent to which employees and regional economies are capable of diversifying depends, to a large extent, on the success of reskilling and re-education programmes. In the context of the green transition, local, bottom-up organised training to leave high carbon emitting ("brown") industries is necessary to help the most affected workers transit into new career opportunities, make the human capital needed for the green transition available and include more disadvantaged groups in new emerging sectors. Furthermore, the transition to a low-carbon and resource-efficient economy as well as the effects brought by other megatrends require a workforce capable of acquiring skills throughout their lives. Effective and inclusive adult learning systems can help workers remain employable and productive throughout their life cycle, despite changing skills needs. If such systems are in place, the green transition can be delivered effectively and benefit most workers. Otherwise, skills shortages may hinder its implementation and inequality will likely increase. In turn, effective adult learning systems can become a comparative advantage that regions can leverage to attract investment from green businesses (OECD, 2023[30]).

Country example

- Labour foundations (*Arbeitsstiftung*) in **Austria** are a mechanism used mainly to address mass layoffs (outplacement foundation) and skills shortages (inplacement foundation) in a region. The mechanism involves a wide variety of counselling and skills development opportunities. An important component of labour foundations is collaboration between the company, regional labour market actors and territorial authorities. In response to the impact of the green transition on the labour market, an environmental inplacement foundation was started by the Austrian Trade Union Federation, the Austrian Federal Economic Chamber and the Public Employment Service. The foundation has a budget of EUR 10 000 000 and aims to support 1 000 unemployed individuals with no vocational training to acquire the qualifications required in the environmental sector (Aufleb Environmental Foundation, 2023[61]).

Making the most of the social economy

Jobs are not just created in the private sector. The social economy and social entrepreneurship can also play an important role in generating employment. In some regions, percentage growth in employment in the social economy has usually outpaced that of the private sectors in recent years (OECD, 2013[62]). The social economy also brings the added benefit of being embedded in communities and offering jobs to the most excluded in the labour market, either by providing training and work experience opportunities or by offering direct employment.

Country examples

- In **Belgium**, social economy organisations have been pioneers in developing the textile recycling sector since the 1960s, combining the development of the green credentials of this sector by selling the best pieces and utilising the worst pieces for other purposes such as insulation, while also running a work integration programme that creates and maintains employment for vulnerable groups. These organisations work together as a federation to streamline textile collection and exchange best practices. The success of these actors in developing this sector is demonstrated by new economic actors entering this field, including private for-profit actors, strengthening the sector and intensifying competition (OECD, 2020[63]).
- SINGA is a social enterprise established in 2012 that facilitates refugee integration by identifying job opportunities and social activities. Today, SINGA counts over 50 000 members and 90 full-time employees across **Belgium**, **Canada**, **France**, **Germany**, **Luxembourg**, **Spain** and **Switzerland**. At the core of SINGA's mission is providing business incubation services to refugees and migrants as well as individuals seeking to launch migration-related initiatives. SINGA operates nine incubators and one accelerator in France, Germany, Italy and Switzerland, each of which can support up to ten companies each year. Building on the success of its incubator programme, SINGA expanded its services to support entrepreneurs from the pre-incubation to the acceleration phase. To date, SINGA has helped to launch 337 companies, 62% of which created new jobs within 6 months of their creation. Businesses launched through SINGA's incubator programme currently operate in various sectors including the hospitality, education, healthcare and technology sectors (OECD, 2022[64]).
- In **Italy**, the social enterprise Quid employs 140 staff members from diverse backgrounds, most of whom with a history of social exclusion and marginalisation. Founded in 2013 in Verona, Italy,

Quid recovers and transforms high-quality fabrics into fashion items for ethical fashion brands. Over 80% of staff are women and close to 80% of managers are women. Their training activities include tailoring workshops in nearby Montorio prison. During the COVID-19 crisis, Quid quickly shifted production to contribute essential services by making face masks certified by the Italian health service (OECD, 2022[64]).

Building regional entrepreneurial ecosystems

Net job creation is typically led by a small number of young firms. While much industry now operates globally, new firms are strongly dependent on the local economic contexts in which they emerge, with most high-growth firms developing in regions with high population density and high levels of tertiary education. Despite their positive contribution to the local economy, high-growth firms are faced with barriers to development, including a lack of access to investment. Governments can help by putting in place strategies to build regional entrepreneurial ecosystems, where new firms can learn through knowledge-sharing networks and through inputs from more experienced managers.

In some OECD countries, business accelerators have been developed to provide a variety of support. OECD countries have also supported entrepreneurs build the skills required for their success. Common approaches are to embed entrepreneurship training into the curriculum in schools, vocational training and university-level courses and to develop stand-alone training for entrepreneurs and "would-be" entrepreneurs (OECD, 2023[65]). Other approaches are to support coaching and mentoring relationships and to develop peer learning programmes (OECD, 2014[55]).

Country example

- In **Sweden**, the Academy for Smart Specialisation is hosted by Karlstad University (KAU) and co-managed by the latter and the region of Värmland. It has contributed to innovating such a strategy, by identifying comparative advantages in new sectors and emerging skills needs and by connecting these with teaching and research activities carried out at the KAU. The academy has been playing a transformative role in the region of Värmland's smart specialisation strategy since its creation in 2015. It is the result of a longstanding partnership between the regional government of Värmland and the University of Karlstad, with a dual objective: to generate academic research and skills in areas relevant to regional competitiveness and to generate advanced services that enhance the region's capacity to identify emerging industries and key local assets. Smart specialisation has been transformational in Värmland. It has contributed to promoting new specialisations and skills in a variety of sectors and has helped the region capitalise on its existing strengths and generate new knowledge networks. The academy has supported this agenda by promoting and funding a range of innovative and entrepreneurial activities with a strong connection to local businesses, notably in value-creating services, forest-based bioeconomy, digitalisation of welfare services, advanced manufacturing and complex systems, nature, culture and place-based digitalised experiences, and systems solutions with photovoltaics (OECD, 2020[66]).

Improving the quality of multi-level governance systems

Why it matters

Designing and implementing policies to address regional inequalities is a responsibility shared by national and subnational levels of government and involves diverse policy sectors. A key issue for policy makers to consider is how to manage this mutual dependence through effective multi-level governance arrangements. It requires clarifying how responsibilities are assigned across levels of government, ensuring efficient co-ordination across levels of government, sectors and jurisdictions as well as strengthening administrative and fiscal capacities, especially at the subnational level (see following section) (OECD, 2014[67]; 2019[68]).

Policy measures

Clarifying the responsibilities assigned to subnational governments

How effective policies are at reducing regional inequalities depends, in part, on how national and subnational governments manage the functions they share. In practice, the question is not of a clear-cut allocation of responsibilities but rather of how to manage these shared responsibilities. The challenge comes from the fact that functional responsibilities – i.e. financing, regulating, monitoring – within each policy area are often not clearly defined or inconsistent (OECD, 2019[68]). The lack of clarity in the assignment of responsibilities is an important obstacle in ensuring overall institutional efficiency and local political accountability, which in turn is also linked to lower levels of trust in government (OECD, forthcoming[17]).

Over the past decades, an overall trend in the OECD has been in favour of decentralisation as a way to manage mutual dependence between national and subnational levels of government to achieve common objectives. Today, 40.4% of public expenditure in OECD countries is undertaken at a subnational level (OECD, 2019[68]). The forms and extent of decentralisation vary greatly from one country to another – and even within the same country. There are also varying degrees of upward and downward accountability and central government control. The trend has also been towards more differentiated (or asymmetric) governance systems at the subnational level in certain countries, with different responsibilities assigned to regional and local governments – at the same level of government, depending on their capacity, population (urban or metropolitan areas), and certain characteristics like geographic characteristics (e.g. islands) (OECD, 2019[68]).

Country examples

- A new Act of Decentralisation was introduced in **France** in Spring 2021 (*Le projet de loi 4D*). The act has four objectives: i) decentralisation, with a review of competencies between the national and subnational levels; ii) differentiation, to allow flexibility in the way subnational authorities organise themselves and implement public policies; iii) de-concentration, to enhance decision-making and policy competencies of local state services (prefects); and iv) de-complexification or simplifying local public action. Furthermore, the various forms of contractual arrangements are being revised, with different contracts being combined to streamline and achieve better coherence between the various actions of the government. In this context, the new generation of State-Region Planning Contracts (2021-27) (*contrats de plan État-région*, CPER) began preparation in 2020 and the new CPER arrangement reflects a renewed framework for dialogue between the state and regions.

- Within the wider objective of increasing local democracy, an ongoing process of decentralisation in **Portugal** underpins the transfer of new additional state administration competencies to local authorities and inter-municipal entities in a wide range of domains. This reform is expected to enhance the efficiency and effectiveness of public service delivery and increase local government participation in public revenue. Resources under the Decentralisation Financing Fund, created by the revised Local Finance Law, have been included in state budgets to help finance, on a transitional basis, the new competencies. By July 2021, 18 sectoral decrees stipulating the transfer of competencies in different areas have been adopted. It is foreseen that all local authorities and inter-municipal entities will eventually assume the new competencies (the process not being optional), although at a varying speed, depending on the complexity of the competencies to be transferred and the existing municipal capacity, among others.

Designing and delivering policies and services at the "right" scale

Scale matters and it is functional areas rather than administrative boundaries that are important to the implementation of many policies for addressing regional inequalities. The OECD has empirically documented the productivity penalty that results from administrative fragmentation in metropolitan areas and has shown that strengthening urban-rural linkages can generate economic, social and environmental dividends for both urban and rural residents alike and contribute to bridging urban-rural divides (OECD, 2015[69]).

Across the OECD, inter-municipal, inter-regional and cross-border co-operation, metropolitan governance arrangements and "regionalisation", i.e. the strengthening of regions (OECD, 2022[70]; 2019[68]) have been leveraged for physical infrastructure provision where the efficient scale often exceeds the boundaries of individual regions or localities, and for investments in human capital development and innovation where administrative and functional boundaries may not coincide. Co-operation among subnational governments is important also for subnational public service delivery, especially in the case of small or lagging regions with limited resources. However, co-operation rarely occurs spontaneously, hence the need for national governments to provide the right incentives for this co-operation to happen.

Country examples

- In **Austria**, a project implemented by the Department for Coordination, Regional Policy and Spatial Planning in 2019-20 aimed to identify ways in which regions, understood as the territorial level between municipality and *Land*, can be empowered to contribute to sustainable spatial development. The project recognised that the challenges facing society are complex and interrelated and that defined areas of administrative competency no longer always match the spatial and functional areas in which these interactions take place and need to be managed. It recognised that the "region" has become an important spatial level in Austria's multi-level system. The main reason for this is the effectiveness with which topics such as mobility, services of general interest and digitisation, but also integration, employment and equal opportunities can be dealt with at that spatial level. This is because the "region" has the appropriate framework conditions in terms of functionality, context, resources, spatial proximity and living environment. The results were published in October 2020 and fed into the programming process of the 2021-27 programme period of EU Cohesion Policy and Rural Development Policy.
- To address the fragmentation of inter-municipal and supra-local forms of collaboration, in March 2021, the Flemish government (**Belgium**) approved the development of an intermediate sub-regional level. Seventeen sub-regions, officially referred to as "reference regions", have

been created, with each Flemish province divided into 2-5 sub-regions. These will co-ordinate different sectoral policies and new and existing collaborations will have to adhere to their boundaries by 2024. The aim of the reference regions is to present an innovative consensus model rather than create a new administrative layer. Within their boundaries, the formation of new inter-municipal links is stimulated through a small subsidy provided by the Flemish regional government.

- A new tier of organisation was introduced in **Denmark** in March 2021, when the government announced the creation of seven Regional Growth Teams (*Regionale Vækstteams*), covering part of or the entirety of the five Danish regions. The teams combine private sector partners, local authorities, trade unions and higher education institutions, and are tasked with developing strategies to address specific challenges, individually set by the government after consultation with the local business development centres.
- A 2020 amended law in **Lithuania** reinforces the territorial concept of the functional area for the implementation of regional policy. This was preceded by a 2017 white paper that includes the concept of the functional area, or functional region, as a system of economic development, worker migration and urban-rural partnerships using common infrastructure, transport and service networks that go beyond administrative boundaries. Regional policy makers are now required to consider functional areas, as opposed simply to municipal administrative boundaries, when formulating regional development or multi-regional development plans.

Strengthening capacity at the national and subnational government levels

Why it matters

Poor government effectiveness at the subnational level severely limits the prospects of regions (OECD, 2019[68]). The capacity of subnational governments to design and implement policies and public investments effectively and to fund and deliver the public goods and services for which they are responsible, is crucial for them to be meaningful partners. Unfortunately, there is wide heterogeneity in the level of capabilities of subnational governments in OECD countries and, often, subnational capacities suffer from significant limitations, be they in investment financing, policy design and implementation, or governance more broadly (OECD, 2019[71]).

Although measuring government quality is notoriously difficult, it has become increasingly clear that many regions that are either lagging or declining have much weaker institutional systems than more developed ones (Charron and Lapuente, 2013[72]). Some research has demonstrated that weak institutions, in general, and poor-quality government in particular constitute a crucial obstacle to development (Rodríguez-Pose, 2013[73]). Poor institutions affect essential growth-promoting factors, such as the returns on European Cohesion Policy (Rodríguez-Pose and Garcilazo, 2015[74]) and competitiveness (Annoni, 2017[75]). Poor-quality institutions can also curtail the prospects of economic development progress because regions cannot seize economic opportunities as they arise.

Policy measures

Investing in subnational fiscal capacity

Sustained investment in fiscal capacity at the subnational level is essential to strengthen incentives for local policy makers to support a proactive approach to development while being accountable for the results achieved. Fiscal autonomy and reliance on own source revenues appear to help the catching-up regions more than those above the national average (Blöchliger, Bartolini and Stossberg, 2016[76]). This requires limiting unfunded and/or under-funded mandates to ensure subnational governments have the requisite

resources to invest, provide services or manage policies, and ensure they are properly staffed (Rodríguez-Pose and Vidal-Bover, 2022[77]).

Most OECD countries have developed fiscal equalisation systems to mitigate regional differences in fiscal capacity and expenditure needs, each of them with different specificities. With the overarching goal of achieving fiscal equity among jurisdictions, fiscal equalisation aims to offset differences in revenue-raising capacity and/or public service costs with the purpose of allowing subnational governments to provide similar public services with a similar overall tax burden. However, evidence indicates that, while fiscal equalisation can effectively create a level-playing field in the fiscal arena across subnational jurisdictions, it is not typically designed to reduce regional income inequality, whether GDP per capita or adjusted household income per capita. However, there is considerable scope to leverage complementarities between fiscal equalisation policies and regional development policies to achieve better fiscal and economic outcomes (OECD, 2022[78]).

Country examples

- Established in 2021, **Colombia**'s Decentralisation Mission works to evaluate the current decentralisation model and propose constitutional and legislative initiatives to improve how responsibilities are shared across levels of government. Over 2022, the Decentralisation Mission met with stakeholders in 15 municipalities, from public administration, academia and Indigenous communities to trade unions and the private sector, to gather contributions and proposals across several priority topics, including: i) strengthening competencies across government levels; ii) improving sources and uses of revenues for local development; and iii) modernising the public administration (DNP, 2023[79]).
- In **Costa Rica**, the recently approved Regional Development Law No. 10.096 puts forward a new development management approach emphasising the role of subnational units and planning regions. The law reinforces the Regional Planning Subsystem and provides new tools to strengthen the capacity of regions to play an active role in regional development, including the creation of a Regional Development Fund, regional budgets and Regional Development Agencies. The law also includes provisions to improve development planning and budgeting at the regional level (Costa Rican System for Legal Information, 2023[80]).

Building strategic and administrative capacity

Building more qualitative strategic and administrative capacity is a fundamental dimension to improving subnational government quality. This refers to skills and competencies in strategic planning, policy and programme management, budgeting and finance, project appraisal, regulation, infrastructure investment, procurement, data management, stakeholder engagement, partnership building and monitoring and evaluation. Well-developed competencies in these areas allow regional and local authorities to design and deliver public services and carry out administrative procedures effectively. Several OECD countries have invested in dedicated strategic capacity-building initiatives to boost subnational capabilities.

Strengthening subnational capacities in the broad sense requires commitment from all levels of government as well as from public sector staff to continually develop skills. It also requires fostering a learning culture, including providing knowledge exchange opportunities and encouraging continuous training, experience-sharing, learning-by-doing and innovation. Such efforts should be targeted and incremental, including with pilots and experiments, so as to avoid burdening subnational authorities, especially those with limited human and financial resources (JRC, 2022[81]).

Country examples

- The Ministry of Regional Development of the **Czech Republic** created a web-based application to support municipalities in designing their municipal development strategies and/or programmes. The application users through the content and structure of an example strategy and offers practical tools (e.g. statistical data, templates and samples of supporting documents and studies, e-learning courses, handbooks for municipalities, etc.). The complete municipal development strategies are published on the webpage, so municipalities can learn from one of their peers. Using the digital platform and promoting peer learning can contribute to building strategic planning capacity among municipalities (OECD, 2023[82]).
- In **Germany**, the initiative Small Towns in Germany is a package of programmes and activities for small-town development, aiming to strengthen their functionality. It targets over 2 100 towns across Germany, mostly in peripheral areas. As part of this initiative, in 2019, the Federal Ministry for Housing, Urban Development and Building launched a pilot called Small Town Academy, which offers a purpose-built platform for networking, exchange of experiences and advanced training on urban development. The pilot phase between 2019 and 2022 was used to define suitable content and formats, which led to the final launch of the platform in 2023. The planned activities include advice from experts who come to the municipality and forge creative strategies (mobile coaching teams) or tandems among mayors who exchange views on a common topic in urban development over the long term. Both activities will generate model projects that test different urban planning and project management methods and will lead to a collection of learning and exchange modules (JRC, 2022[81]).
- To support the implementation of the National Strategy of Regional Development 2030 (NSRD 2030), the Ministry of Development Funds and Regional Policy of **Poland** launched a pilot project to create the Centre for Advisory Support (*Centrum Wsparcia Doradczego*, CWD). The centre focuses on strengthening the institutional capacity of local authorities to participate in strategic development activities, including designing, planning and managing infrastructure projects in 894 areas of strategic intervention (ASIs). By doing so, the CWD also helps build capacity and strengthen the territorial approach to investment, i.e. by helping build cross-jurisdiction partnerships with other ASI communes and with non-public socio-economic partners such as civil society organisations in order to tackle local development challenges and advance the competitive advantage of working in partnerships (Malik-Kapler, 2021[83]; JRC, 2022[81]).

Making the most of complementarities across the policy roadmap

Economic development policies, labour market policies, policies to support entrepreneurship and social entrepreneurship, and education and training policies all have a role to play to reduce regional inequalities. Integrated approaches can be built across these policy areas to help foster inclusive growth. Yet often this does not happen and policies are delivered “in silos”.

In some cases, this is because of institutional inertia and the organisational challenges of working together. However, there can also be trade-offs between meeting national policy objectives and fostering regional development and resilience. The search for efficiency in the delivery of national policies and programmes can sometimes lead to a lack of attention to the negative effects that a “one-size-fits-all” approach can have in certain regions.

Furthermore, interaction effects across regions need to be accounted for. An intervention that addresses a given challenge in one region – say expanding the affordable housing stock and improving transport infrastructure in a rapidly growing metropolitan area – may have unintended consequences elsewhere,

e.g. a further loss of skilled workers in less dynamic non-metropolitan regions nearby. And in some cases, the investments required to stabilise relative incomes in economically lagging regions may be so large that they may not represent a good use of the available resources (OECD, forthcoming[40]).

While there is no simple policy prescription to mitigate regional inequalities, the policy roadmap presented in this chapter proposes five priorities for public action to help boost both balanced development and inclusion. Importantly, advancing on all five priorities requires implementing complementary measures in parallel that can reinforce each other and for which sequencing matters. For example, regions will only manage to develop high-value-added industries if they can offer employers a skilled workforce. But good job opportunities alone will not be enough to attract and retain skilled workers and their families: access to good-quality and affordable public services, notably housing, childcare, schooling and healthcare, equally matter.

Capitalising on the positive linkages presented in Table 5.1 that exist across the five priorities of the policy roadmap can offer a double dividend in terms of socio-economic progress and individual well-being. Furthermore, if smartly combined, actions across the five priorities can counteract a race to the bottom among regions within a country. Rather than having regions trying to undercut each other, for example, at the expense of tax revenues or environmental and labour standards, a combination of these priorities offers regions a productive way to compete with each other and better function in a “system” of regions, while lifting the economic performance of the entire country (OECD, 2019[34]).

Going forward, the *OECD Recommendation on Regional Development Policy* adopted by the OECD Council at the Ministerial level on 8 June 2023 will serve as a compass to guide governments’ efforts at different levels to promote and implement effective place-based regional development policy that improves the contribution of all regions to national performance and reduces inequalities between places and between people (OECD, 2023[84]).

The Recommendation is articulated around ten pillars that are well-aligned with and can serve to reinforce the five priorities of the policy roadmap presented in this chapter, as illustrated in Figure 5.4. As such, the Recommendation can further support efforts by OECD governments to ward off persistent divides between regions.

Figure 5.4. Linkages between the policy roadmap and the Recommendation on Regional Development Policy

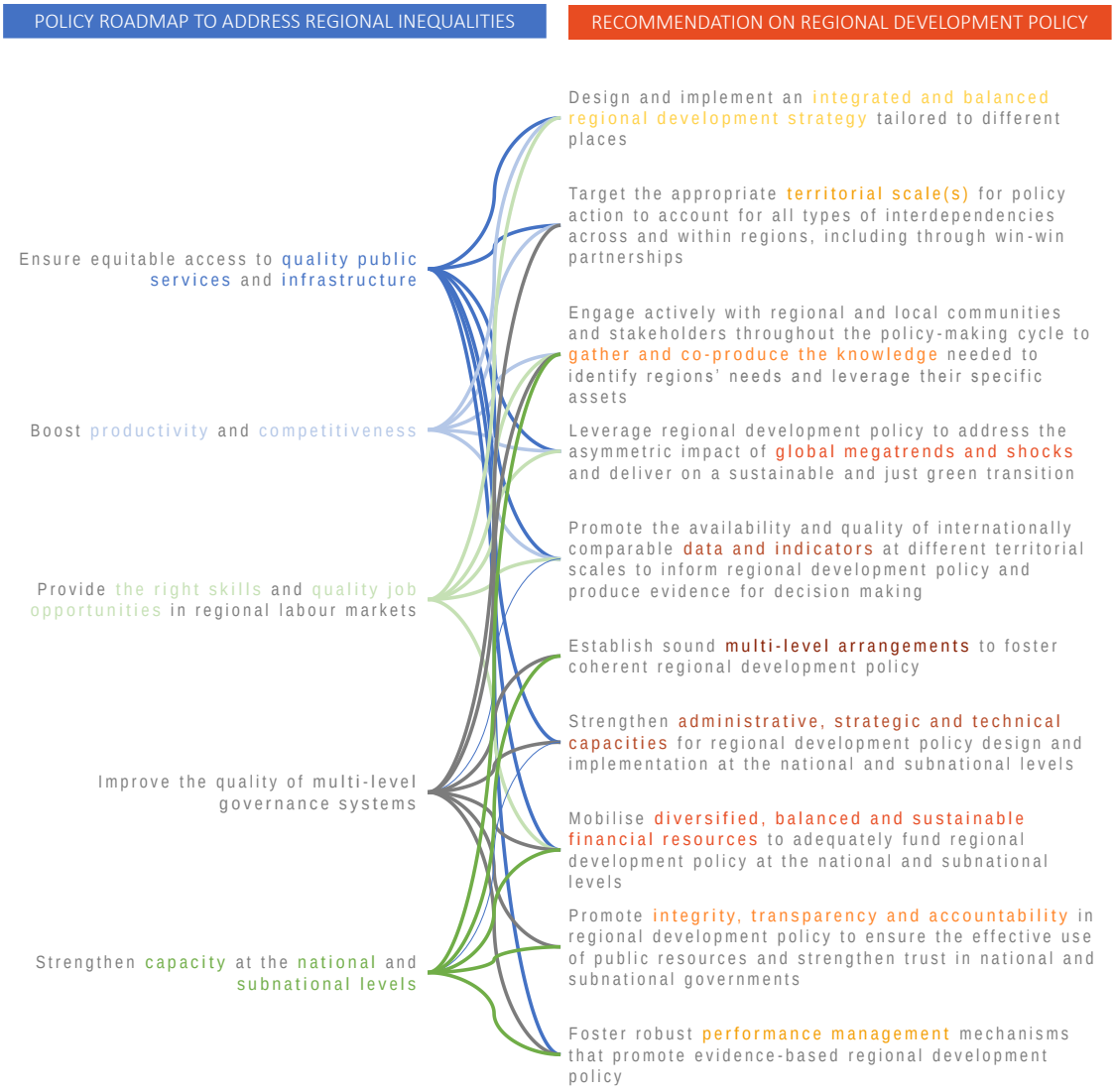


Table 5.1. Examples of complementarities across the policy roadmap

	Ensure equitable access to quality public services and infrastructure	Boost productivity and competitiveness	Provide the right skills and quality job opportunities in regional labour markets	Improve the quality of multi-level governance systems	Strengthen capacity at the national and subnational levels
Ensure equitable access to quality public services and infrastructure		• Increasing tax autonomy • Increasing the potential for economies of scale	• Providing skilled workers	• Reducing inefficiencies and co-ordination failures • Improving resource allocation across different programmes and investment	• Improving public service and infrastructure policy design and implementation • Improving administrative efficiency • Strengthening social services
Boost productivity and competitiveness	• Investing in human capital (education, training, skill development) • Facilitating the assimilation of knowledge and innovation • Connecting leading and lagging regions • Supporting economic integration • Stimulating private sector activity in less-connected places		• Providing a skilled labour force • Improving/creating a good business environment • Supporting firm development with training	• Reducing inefficiencies and co-ordination failures • Improving resource allocation across different programmes and investment	• Creating conducive policy and institutional environments to attract private investment and support firm development
Provide the right skills and quality job opportunities in regional labour markets	• Investing in human capital (education, training, skill development) • Facilitating the assimilation of knowledge and innovation	• Developing clusters and agglomeration economies		• Reducing inefficiencies and co-ordination failures • Improving resource allocation across different programmes and investment	• Protecting workers' rights
Improve the quality of multi-level governance systems	• Facilitating the assimilation of knowledge and innovation across levels of government				• Improving public service and infrastructure policy design and implementation • Improving administrative efficiency
Strengthen capacity at the national and subnational levels	• Facilitating the assimilation of knowledge and innovation across levels of government			• Reducing inefficiencies and co-ordination failures • Helping identify and build local knowledge	

References

Acemoglu, D. and M. Dell (2010), "Productivity differences between and within countries", *American Economic Journal: Macroeconomics*, Vol. 2/1, pp. 169-88, https://doi.org/10.1257/MAC.2.1.169. [3]

Agence de la Cohésion des Territoires (2023), *Petites villes de demain*, https://agence-cohesion-territoires.gouv.fr/petites-villes-de-demain-45. [52]

Alfaro, L., M. Chen and H. Fadinger (n.d.), "Spatial agglomeration and superstar firms: Firm-level patterns from Europe and US". [2]

Algan, Y. and P. Cahuc (2014), "Trust, growth, and well-being: New evidence and policy implications", in *Handbook of Economic Growth*, Elsevier Science, https://doi.org/10.1016/B978-0-444-53538-2.00002-2 (accessed on 2022 September 28). [25]

Algan, Y. et al. (2018), "The European trust crisis and the rise of populism", *Brookings Papers on Economic Activity*, pp. 309-382, https://www.jstor.org/stable/90019460. [21]

Annoni, P. (2017), "Measuring and monitoring regional competitiveness in the European Union", in Thompson, R. (ed.), *Handbook of Regions and Competitiveness*, Edward Elgar Publishing, https://ideas.repec.org/h/elg/eechap/15784_3.html. [75]

Aufleb Environmental Foundation (2023), *Homepage*, https://www.aufleb.at/ (accessed on March 2023). [61]

Barba Navaretti, G. (2021), "Place-based policies and the foundations of productivity in the private sector - What are we building on?", Paper presented at the OECD-EC workshop "Productivity in the Private Sector", 24-25 March 2021, OECD, Paris. [35]

Bargain, O. and U. Aminjonov (2020), "Trust and compliance with public health policies in the time of COVID-19", https://cepr.org/voxeu/columns/trust-and-compliance-public-health-policies-time-covid-19. [26]

Blöchliger, H., D. Bartolini and S. Stossberg (2016), "Does Fiscal Decentralisation Foster Regional Convergence?", *OECD Economic Policy Papers*, No. 17, OECD Publishing, Paris, https://doi.org/10.1787/5jlr3c1vcqmr-en. [76]

Charron, N. and V. Lapuente (2013), "Why do some regions in Europe have a higher quality of government?", *The Journal of Politics*, Vol. 75/3, pp. 567-582, https://doi.org/10.1017/S0022381613000510. [72]

Costa Rican System for Legal Information (2023), *Bienvenido al Sistema Costarricense de Información Jurídica - SCIJ*, http://www.pgrweb.go.cr/scij/. [80]

Diaz-Ramirez, M., P. Veneri and A. Lembcke (2022), "Where did it hit harder? Understanding the geography of excess mortality during the COVID-19 pandemic", *Journal of Regional Science*, Vol. 62/3, pp. 889-908, https://doi.org/10.1111/jors.12595. [28]

Diemer, A. et al. (2022), "The regional development trap in Europe", *Economic Geography*, Vol. 98/5, https://doi.org/10.1080/00130095.2022.2080655. [11]

Dijkstra, L., H. Poelman and A. Rodríguez-Pose (2020), "The geography of EU discontent", *Regional Studies*, Vol. 54/6, https://doi.org/10.1080/00343404.2019.1654603. [19]

Dijkstra, L., H. Poelman and P. Veneri (2019), "The EU-OECD definition of a functional urban area", *OECD Regional Development Working Papers*, No. 2019/11, OECD Publishing, Paris, https://doi.org/10.1787/d58cb34d-en. [46]

DNP (2023), *Homepage*, Department of National Planning of Colombia, https://www.dnp.gov.co/ (accessed on April 2023). [79]

Duranton, G. (2007), "Urban evolutions: The fast, the slow, and the still", *American Economic Review*, Vol. 97/1, p. 197, https://doi.org/10.1257/aer.97.1.197. [5]

EC (2022), *Cohesion in Europe Towards 2050: Eighth Report on Economic, Social and Territorial Cohesion*, European Commission, https://ec.europa.eu/regional_policy/information-sources/cohesion-report_en. [10]

Fadic, M. et al. (2019), "Classifying small (TL3) regions based on metropolitan population, low density and remoteness", *OECD Regional Development Working Papers*, No. 2019/06, OECD Publishing, Paris, https://doi.org/10.1787/b902cc00-en. [47]

Frick, S. and A. Rodríguez-Pose (2018), "Big or small cities? On city size and economic growth", *Growth and Change*, Vol. 49/1, pp. 4-32, https://doi.org/10.1111/grow.12232. [4]

Georgieva, N., R. Downes and J. Bachtler (2021), *COVID Recovery and the Long-Term Challenges for Regional Policies*, European Regional Policy Research Consortium (EoRPA) Report 21/1, EoRPA Regional Policy Research Consortium, European Policies Research Centre, University of Strathclyde, Glasgow and EPRC Delft, https://strathprints.strath.ac.uk/81222/. [41]

Guriev, S. and E. Papaioannou (2020), "The political economy of populism", https://www.hks.harvard.edu/sites/default/files/centers/mrcbg/programs/senior.fellows/20-21/populism_oct2020.pdf. [20]

Hanushek, E. and L. Woessmann (2020), *The Economic Impacts of Learning Losses*, OECD, Paris, https://www.oecd.org/education/The-economic-impacts-of-coronavirus-covid-19-learning-losses.pdf. [16]

Iammarino, S., A. Rodríguez-Pose and M. Storper (2018), "Regional inequality in Europe: Evidence, theory and policy implications", https://cepr.org/voxeu/columns/regional-inequality-europe-evidence-theory-and-policy-implications. [36]

JRC (2022), *Handbook of Territorial and Local Development Strategies*, Joint Research Centre, European Commission, https://doi.org/10.2760/57919. [81]

Land Branderburg State Chancellery (2021), "Branderburg approaches to regional development: "Connecting strengths"", Presentation at the International Insights into Rebalancing Regional Development - A contribution to the UK Government's Levelling-Up Roundtable Series, OECD, 20 September 2021. [48]

Malik-Kapler, E. (2021), "Support for problem areas in Poland", Unpublished. [83]

Ministry of Local Government and Regional Development (2020), *Vibrant Communities for the Future*, https://www.regjeringen.no/no/dokumenter/meld.-st.-5-20192020/id2674349/. [53]

Mitsch, F., N. Lee and E. Ralph-Morrow (2021), "Faith no more? The divergence of political trust between urban and rural Europe", *Political Geography*, Vol. 89, http://eprints.lse.ac.uk/110497/. [22]

OECD (2023), *Job Creation and Local Economic Development 2023: Bridging the Great Green Divide*, OECD Publishing, Paris, https://doi.org/10.1787/21db61c1-en. [30]

OECD (2023), *OECD Platform for the Entrepreneurship Education Collaboration and Engagement Network - EECOLE*, OECD, Paris, https://www.oecd.org/industry/smes/eecole.htm. [65]

OECD (2023), *OECD Public Governance Reviews: Czech Republic: Towards a More Modern and Effective Public Administration*, OECD Public Governance Reviews, OECD Publishing, Paris, https://doi.org/10.1787/41fd9e5c-en. [82]

OECD (2023), *OECD SME and Entrepreneurship Outlook 2023*, OECD Publishing, Paris, https://doi.org/10.1787/342b8564-en. [32]

OECD (2023), *Recommendation on Regional Development Policy*, https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0492. [84]

OECD (2023), *Regional Industrial Transitions to Climate Neutrality*, OECD Regional Development Studies, OECD Publishing, Paris, https://doi.org/10.1787/35247cc7-en. [29]

OECD (2023), *Rethinking Regional Attractiveness in the New Global Environment*, OECD Regional Development Studies, OECD Publishing, Paris, https://doi.org/10.1787/a9448db4-en. [44]

OECD (2022), *Addressing territorial disparities in future infrastructure needs in the wake of the COVID-19 crisis: A G20 perspective*, OECD Publishing, Paris, https://doi.org/10.1787/e246f50f-en. [15]

OECD (2022), *Building Trust to Reinforce Democracy: Main Findings from the 2021 OECD Survey on Drivers of Trust in Public Institutions*, Building Trust in Public Institutions, OECD Publishing, Paris, https://doi.org/10.1787/b407f99c-en. [18]

OECD (2022), *Drivers of Trust in Public Institutions in Norway*, Building Trust in Public Institutions, OECD Publishing, Paris, https://doi.org/10.1787/81b01318-en. [23]

OECD (2022), "Issues note for the Rural Development Conference, Cavan, Ireland 28-30 September 2022", OECD, Paris, https://www.oecd.org/regional/IssuesPaperRuralConference.pdf. [33]

OECD (2022), "Making the most of public investment to address regional inequalities, megatrends and future shocks", *OECD Regional Development Papers*, No. 29, OECD Publishing, Paris, https://doi.org/10.1787/8a1fb523-en. [13]

OECD (2022), "Multi-level governance and fiscal tools to fight territorial inequalities: Fiscal equalisation and regional development: is there a case for enhanced synergies?", Background document prepared for the 4th meeting of the Expert Group on Multi-level Governance and Public Investment for Regional Development, OECD, Paris. [78]

OECD (2022), *Regional Governance in OECD Countries: Trends, Typology and Tools*, OECD Multi-level Governance Studies, OECD Publishing, Paris, https://doi.org/10.1787/4d7c6483-en. [70]

OECD (2022), *Unlocking Rural Innovation*, OECD Rural Studies, OECD Publishing, Paris, https://doi.org/10.1787/9044a961-en. [49]

OECD (2022), "Unlocking the potential of youth-led social enterprises", *OECD Local Economic and Employment Development (LEED) Papers*, No. 2022/11, OECD Publishing, Paris, https://doi.org/10.1787/d5bddad8-en. [64]

OECD (2021), *Delivering Quality Education and Health Care to All: Preparing Regions for Demographic Change*, OECD Rural Studies, OECD Publishing, Paris, https://doi.org/10.1787/83025c02-en. [14]

OECD (2021), *Drivers of Trust in Public Institutions in Finland*, OECD Publishing, Paris, https://doi.org/10.1787/52600c9e-en. [24]

OECD (2021), *Implications of Remote Working Adoption on Place Based Policies: A Focus on G7 Countries*, OECD Regional Development Studies, OECD Publishing, Paris, https://doi.org/10.1787/b12f6b85-en. [31]

OECD (2021), *OECD Regional Outlook 2021: Addressing COVID-19 and Moving to Net Zero Greenhouse Gas Emissions*, OECD Publishing, Paris, https://doi.org/10.1787/17017efe-en. [27]

OECD (2021), *OECD Skills Outlook 2021: Learning for Life*, OECD Publishing, Paris, https://doi.org/10.1787/0ae365b4-en. [60]

OECD (2021), *Regional Innovation in Piedmont, Italy: From Innovation Environment to Innovation Ecosystem*, OECD Regional Development Studies, OECD Publishing, Paris, https://doi.org/10.1787/7df50d82-en. [51]

OECD (2020), *Continuous Learning in Working Life in Finland*, Getting Skills Right, OECD Publishing, Paris, https://doi.org/10.1787/2ffcffe6-en. [37]

OECD (2020), *Evaluation of the Academy for Smart Specialisation: Final Report June 2020*, The Geography of Higher Education, OECD Publishing, Paris, https://www.oecd.org/cfe/smes/Evaluation_Academy_Smart_Specialisation.pdf. [66]

OECD (2020), *Rural Well-being: Geography of Opportunities*, OECD Rural Studies, OECD Publishing, Paris, https://doi.org/10.1787/d25cef80-en. [54]

OECD (2020), "Social economy and the COVID-19 crisis: current and future roles", *OECD Policy Responses to Coronavirus (COVID-19)*, OECD Publishing, Paris, https://doi.org/10.1787/f904b89f-en. [63]

OECD (2020), *The Future of Regional Development and Public Investment in Wales, United Kingdom*, OECD Multi-level Governance Studies, OECD Publishing, Paris, https://doi.org/10.1787/e6f5201d-en. [42]

OECD (2020), *Transport Bridging Divides*, OECD Urban Studies, OECD Publishing, Paris, https://doi.org/10.1787/55ae1fd8-en. [45]

OECD (2019), *Effective Multi-level Public Investment - OECD Principles in Action*, OECD Multi-level Governance Studies, OECD Publishing, Paris, https://www.oecd.org/effective-public-investment-toolkit/Full_report_Effective_Public_Investment.pdf. [71]

OECD (2019), *Evaluating Latvia's Active Labour Market Policies*, Connecting People with Jobs, OECD Publishing, Paris, https://doi.org/10.1787/6037200a-en. [56]

OECD (2019), *Getting Skills Right: Creating Responsible Adult Learning Systems*, OECD, Paris, http://www.oecd.org/els/emp/adult-learning-systems-2019.pdf. [57]

OECD (2019), *Making Decentralisation Work: A Handbook for Policy-Makers*, OECD Multi-level Governance Studies, OECD Publishing, Paris, https://doi.org/10.1787/g2g9faa7-en. [68]

OECD (2019), *OECD Regional Outlook 2019: Leveraging Megatrends for Cities and Rural Areas*, OECD Publishing, Paris, https://doi.org/10.1787/9789264312838-en. [34]

OECD (2018), *Job Creation and Local Economic Development 2018: Preparing for the Future of Work*, OECD Publishing, Paris, https://doi.org/10.1787/9789264305342-en. [58]

OECD (2016), *Health Workforce Policies in OECD Countries: Right Jobs, Right Skills, Right Places*, OECD Health Policy Studies, OECD Publishing, Paris, https://doi.org/10.1787/9789264239517-en. [39]

OECD (2016), *OECD Regional Outlook 2016: Productive Regions for Inclusive Societies*, OECD Publishing, Paris, https://doi.org/10.1787/9789264260245-en. [12]

OECD (2016), *OECD Territorial Reviews: Japan 2016*, OECD Territorial Reviews, OECD Publishing, Paris, https://doi.org/10.1787/9789264250543-en. [38]

OECD (2015), *Governing the City*, OECD Publishing, Paris, https://doi.org/10.1787/9789264226500-en. [69]

OECD (2015), *The Metropolitan Century: Understanding Urbanisation and its Consequences*, OECD Publishing, Paris, https://doi.org/10.1787/9789264228733-en. [1]

OECD (2014), *Job Creation and Local Economic Development*, OECD Publishing, Paris, https://doi.org/10.1787/9789264215009-en. [55]

OECD (2014), *Recommendation of the Council on Effective Public Investment Across Levels of Government*, OECD/LEGAL/0402, OECD, Paris, https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0402. [67]

OECD (2013), "Back to work: Re-employment, earnings and skill use after job displacement", in *OECD Employment Outlook 2013*, OECD Publishing, Paris, https://doi.org/10.1787/empl_outlook-2013-8-en. [59]

OECD (2013), *Job Creation through the Social Economy and Social Entrepreneurship*, OECD, Paris, https://www.oecd.org/cfe/leed/130228_Job%20Creation%20throught%20the%20Social%20Economy%20and%20Social%20Entrepreneurship_RC_FINALBIS.pdf. [62]

OECD (2012), *Promoting Growth in All Regions*, OECD Regional Development Studies, OECD Publishing, Paris, https://doi.org/10.1787/9789264174634-en. [8]

OECD (forthcoming), *The Geography of Income Inequalities in OECD Countries: Evidence from National Register Data*, OECD Publishing, Paris. [40]

OECD (forthcoming), "Understanding and tackling the territorial divides of trust in government", *OECD Regional Development Paper*, OECD, Paris. [17]

Oliveira Martins, J. (2021), "Regional policy narratives and the 'geographies of discontent'", https://doi.org/10.1093/cjres/rsab024. [9]

Rodríguez-Pose, A. (2013), "Do institutions matter for regional development?", *Regional Studies*, Vol. 47, pp. 1034-1047, https://doi.org/10.1080/00343404.2012.748978. [73]

Rodríguez-Pose, A. and E. Garcilazo (2015), "Quality of government and the returns of investment: Examining the impact of cohesion expenditure in European regions", *Regional Studies*, Vol. 49/8, pp. 1274-1290, https://doi.org/10.1080/00343404.2015.1007933. [74]

Rodríguez-Pose, A. and M. Vidal-Bover (2022), "Unfunded mandates and the economic impact of decentralisation: When finance does not follow function", *Political Studies*, https://doi.org/10.1177/00323217221136666. [77]

Solow, R. (1956), "A contribution to the theory of economic growth", *Quarterly Journal of Economics*, Vol. 70/1, pp. 65-94, https://doi.org/10.2307/1884513. [6]

Storper, M. (2023), "Development: A conceptual framework for cohesion policy", Prepared for the 1st meeting of the Reflection Group on the future of Cohesion Policy, 30 January 2023, Brussels. [50]

Swan, T. (1956), "Economic growth and capital accumulation", *Economic Record*, Vol. 32/2, pp. 334-361, https://doi.org/10.1111/J.1475-4932.1956.TB00434.X. [7]

Tsvetkova, A. et al. (2020), "The spatial dimension of productivity: Connecting the dots across industries, firms and places", *OECD Regional Development Working Papers*, No. 2020/01, OECD Publishing, Paris, https://doi.org/10.1787/ba5edb47-en. [43]

OECD Regional Outlook 2023

THE LONGSTANDING GEOGRAPHY OF INEQUALITIES

Over the last two decades, regional inequalities have remained significant, and have grown within many OECD countries. Impacts of recent shocks, including the COVID-19 pandemic and Russia's war of aggression against Ukraine, and megatrends, threaten to widen these gaps between regions, deepening the longstanding geography of inequalities. This report, Regional Outlook 2023 – The Longstanding Geography of Inequalities, provides novel evidence on the evolution of inequalities between OECD regions across several dimensions (including income and access to services) over the past twenty years. It sheds light on the role of productivity to address regional inequalities. It also looks at the costs of regional inequalities, which can weaken the economic, social, and political fabric, and lead to a geography of discontent. Furthermore, the report explores forward-looking scenarios for regions as part of ongoing reflections to future-proof regional development policy and secure social cohesion. Finally, it provides a policy roadmap to guide governments' efforts to reduce persistent regional inequalities now and in the future.

PRINT ISBN 978-92-64-81264-2
PDF ISBN 978-92-64-34116-6

9 789264 812642