



OECD Economics Department Working Papers No. 1696

Enhancing regional
convergence
in the European Union

**Álvaro Pina,
Patrizio Sicari**

<https://dx.doi.org/10.1787/253dd6ee-en>

ECONOMICS DEPARTMENT

ENHANCING REGIONAL CONVERGENCE IN THE EUROPEAN UNION

ECONOMICS DEPARTMENT WORKING PAPERS No. 1696

By Álvaro Pina and Patrizio Sicari

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Abstract/Résumé**Enhancing regional convergence in the European Union**

Progress in regional convergence in the EU has been uneven over the last two decades. While Central and Eastern Europe has been catching up, Southern Europe has often lost ground, especially after the global financial crisis. Furthermore, within most countries, gaps between large cities and rural areas have widened. Some challenges to convergence have stemmed from worldwide factors – such as globalisation, digitalisation, global warming, and, more recently, COVID19 – but others are European-specific, like incomplete financial integration, less effective fiscal governance and subpar innovation performance.

This paper proposes policy action to reduce regional divergence by helping regions upgrade their productive specialisation. Building on new approaches to regional and industrial policies, Europe needs to exploit the full potential of cross-country cooperation in innovation and of urban agglomeration economies. Competition and trade policies need to ensure a level playing field to enhance the benefits of open and competitive markets while responding to new challenges, such as digitalisation or foreign subsidies. Finally, Cohesion Policy and the Common Agricultural Policy, the two largest EU budget instruments, need to become more effective at promoting productive upgrading.

This Working Paper relates to the 2021 OECD Economic Survey of the European Union, which was finalised in June 2021.

<http://www.oecd.org/economy/euro-area-and-european-union-economic-snapshot/>

JEL codes: L40, O38, R11, R58

Keywords: territorial inequalities, regional specialisation, innovation policy, competition policy, EU cohesion policy, Common Agricultural Policy

Renforcer la convergence régionale dans l'Union européenne

La convergence régionale a progressé de manière inégale dans l'UE ces deux dernières décennies. Si l'Europe centrale et orientale a rattrapé son retard, l'Europe du Sud a souvent perdu du terrain, surtout après la crise financière mondiale. En outre, dans la plupart des pays, les écarts entre les grandes villes et les zones rurales se sont creusés. Parmi les obstacles à la convergence figurent des facteurs mondiaux - tels que la mondialisation, la numérisation, le réchauffement climatique et, plus récemment, la pandémie de COVID-19 - mais d'autres sont propres à l'Europe, comme le progrès insuffisant de l'intégration financière, la moindre efficacité de la gouvernance budgétaire et des résultats en matière d'innovation laissant à désirer.

La présente étude passe en revue les actions à engager pour réduire la divergence entre les régions en aidant celles-ci à améliorer leur spécialisation productive. En faisant fond sur de nouvelles approches des politiques régionales et industrielles, l'Europe doit exploiter pleinement les possibilités de coopération entre les pays dans le domaine de l'innovation ainsi que les économies d'agglomération urbaine. Les politiques de la concurrence et les politiques commerciales doivent contribuer à l'harmonisation des règles du jeu pour permettre de mieux tirer parti de marchés ouverts et concurrentiels tout en répondant aux nouveaux enjeux, tels que la numérisation ou les subventions étrangères. Enfin, l'efficacité de la politique de cohésion et de la politique agricole commune, les deux principaux instruments budgétaires de l'UE, doit être améliorée pour favoriser l'amélioration de la spécialisation productive.

Ce Document de travail se rapporte à l'Etude économique de l'OCDE de l'Union Européenne 2021, qui a été finalisée en juin 2021.

<https://www.oecd.org/fr/economie/union-europeenne-zone-euro-en-un-coup-d-oeil/>

JEL codes: L40, O38, R11, R58

Mots clés : inégalités territoriales, spécialisation régionale, politique d'innovation, politique de concurrence, politique de cohésion de l'UE, politique agricole commune.

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Enhancing regional convergence in the European Union

By Álvaro Pina and Patrizio Sicari¹

Large and persistent regional disparities are challenging the cohesion of the European Union

Regional convergence is an objective enshrined in EU Treaties but the level of disparities between regions remains very high (Figure 1). Even with some adjustment for the fact that living costs tend to be lower in poorer areas, average GDP per capita in the most prosperous regions (defined as accounting for 20% of the EU population) was in 2018 almost 3 times larger than in the regions home to the poorest 20%.

Regional divergence can lead to a rise in dissatisfaction within specific geographical areas, threatening social cohesion (OECD, 2019a). Lagging or declining regions from several countries have in recent years voted in large numbers for parties or candidates perceived as extreme (Rodríguez-Pose, 2018). In these elections, inter-regional inequality has been a stronger determinant of discontent than the often much larger interpersonal inequality (*ibidem*). In a similar vein, loss of manufacturing employment in regions struggling with industrial transition or protracted meagre GDP growth, even from a high starting level, have tended to stir opposition to European integration (Becker et al., 2017, Dijkstra et al., 2019). Besides economic decay, the closure of local facilities, often housing public services or places of socialisation, also fuels social and political discontent (Algan et al., 2020).

The COVID-19 pandemic could well worsen diverging trends. As suggested by output developments in 2020, southern EU countries have been hit hardest, losing further ground to their northern peers. They tend to rely more on tourism and on very small firms, which are often more vulnerable (OECD, 2020a; Doerr and Gambacorta, 2020), and have generally had to impose a more stringent confinement in Spring 2020. In contrast, central and eastern European countries have as a whole suffered output losses smaller than the EU average, at least so far, despite their strong specialisation in car manufacturing, a sector highly exposed to disruption in international supply chains.

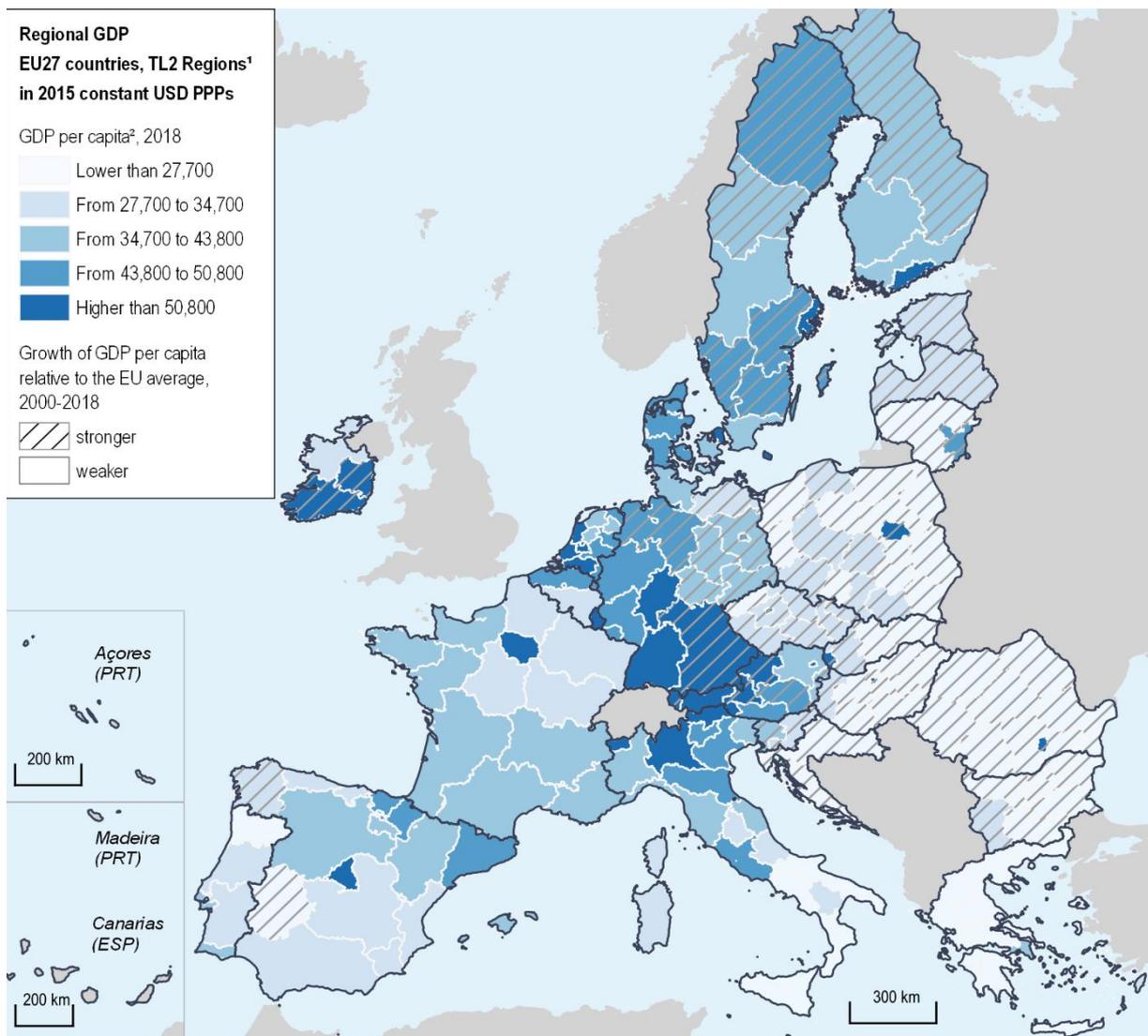
The pandemic could also aggravate regional inequalities within countries, though data on regional impacts is still scarce. For instance, despite a worse sanitary situation in the north of the country, Southern Italian

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regions did not record lower employment losses during the first wave of COVID19 infections (Arbolino and Di Caro, 2020). Poorer regions generally have relatively fewer workers who can telework (IMF, 2020). More fundamentally, due to factors like less diversified economies or weaker institutional capabilities, poorer regions may face greater hurdles to resource reallocation after the pandemic, leaving them more exposed to hysteresis effects.

This first section of the paper starts with an overview of regional convergence trends over the last two decades. It will then identify the global drivers of increased divergence before pointing at specific European features that have further hampered convergence. The subsequent sections propose policy recommendations to restart the convergence process.

Figure 1. GDP per capita varies widely across EU regions



Note: 1. Territorial Level 2 (TL2) refers to large regions, as defined by the OECD classification of geographic units. These categories correspond with Eurostat's NUTS 2 classification, with the exception of Belgium and Germany where the NUTS 1 level corresponds to the OECD TL2. 2. Each of the five GDP per capita groups represents about one fifth of the EU27 population.

Source: OECD (2020), OECD calculations based on data from the OECD Regional Statistics (database).

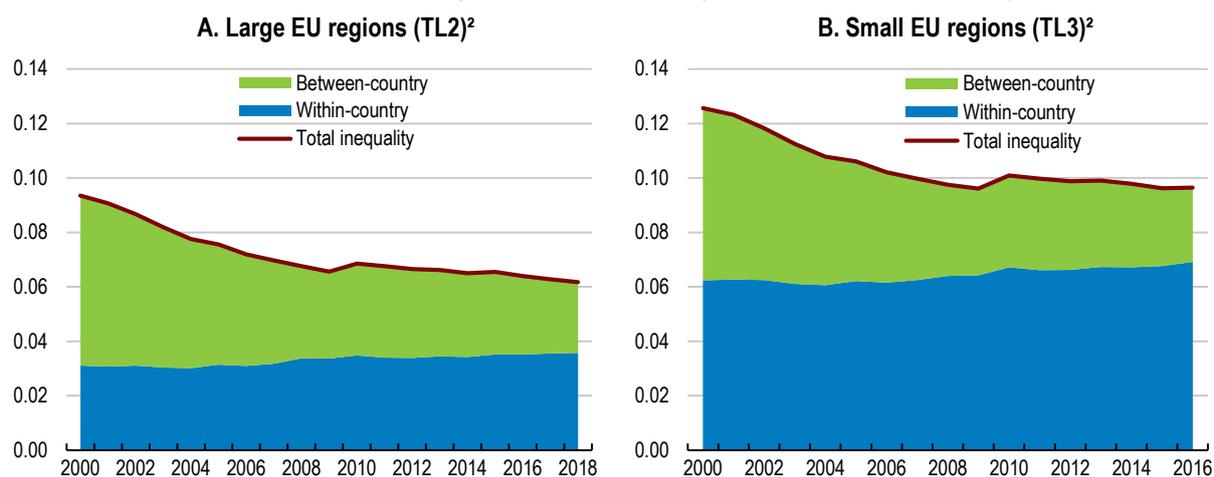
Progress in convergence has been uneven and slowed down

Since the turn of the century achievements on regional convergence have been mixed. Overall regional disparities in GDP per capita declined significantly until the global financial crisis, but much more slowly afterwards (Figure 2).

The decrease in GDP per capita disparities during the first decade of this century was driven by a reduction in inequalities between countries (Figure 2, green area), rather than across regions of the same country. The reduction of inequality between countries has mainly reflected strong growth and convergence in recent EU members of central and eastern Europe (Figure 3). In contrast, among older members, i.e. countries that were members before the enlargement to central and eastern Europe in 2004, hardly any progress took place until the global financial crisis, and renewed divergence has been observed on average in its aftermath (Figures 3 and 4). Contrasting convergence dynamics between central and eastern Europe, on the one hand, and southern Europe, on the other, have also been observed in total factor productivity (European Commission, 2019a).

Figure 2. Convergence between countries has slowed down, and divergence within countries has increased

Theil indices¹ based on the distribution of regional GDP per capita (in 2015 constant USD PPPs)

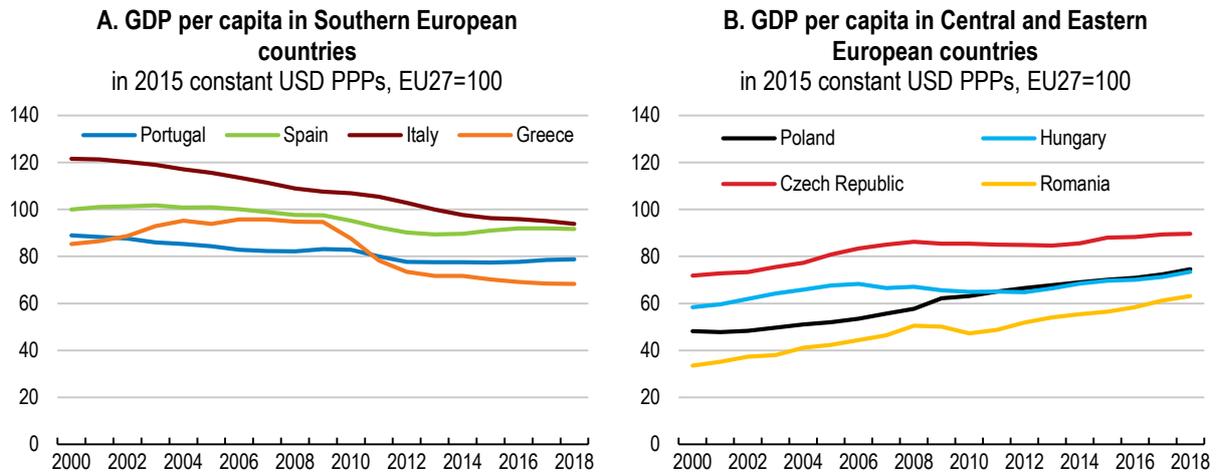


Note: 1. The (population-weighted) Theil index is computed based on samples of 194 TL2 (Panel A) and 1158 TL3 (Panel B) regions across 25 EU countries for which data on regional GDP per capita are available over the entire reference period, between 2000 and 2018 (2016 for Panel B). Countries include: Austria, Belgium, Bulgaria, Croatia, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, the Netherlands, Poland, Portugal, Romania, the Slovak Republic, Slovenia, Spain and Sweden. Countries with only one TL2 region are excluded in Panel A (Estonia, Latvia and Luxembourg) and those with only one TL3 region are excluded in Panel B (Luxembourg). 2. Territorial Levels 2 and 3 (TL2 and TL3, respectively) refer to large and small regions, as defined by the OECD classification of geographic units. These categories correspond with Eurostat's NUTS 2 and NUTS 3 classifications, with the exception of Belgium and Germany where the NUTS 1 level corresponds to the OECD TL2.

Source: OECD (2020), OECD calculations based on data from the OECD Regional Statistics (database).

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Figure 3. Southern and Eastern European countries have had a contrasting growth performance

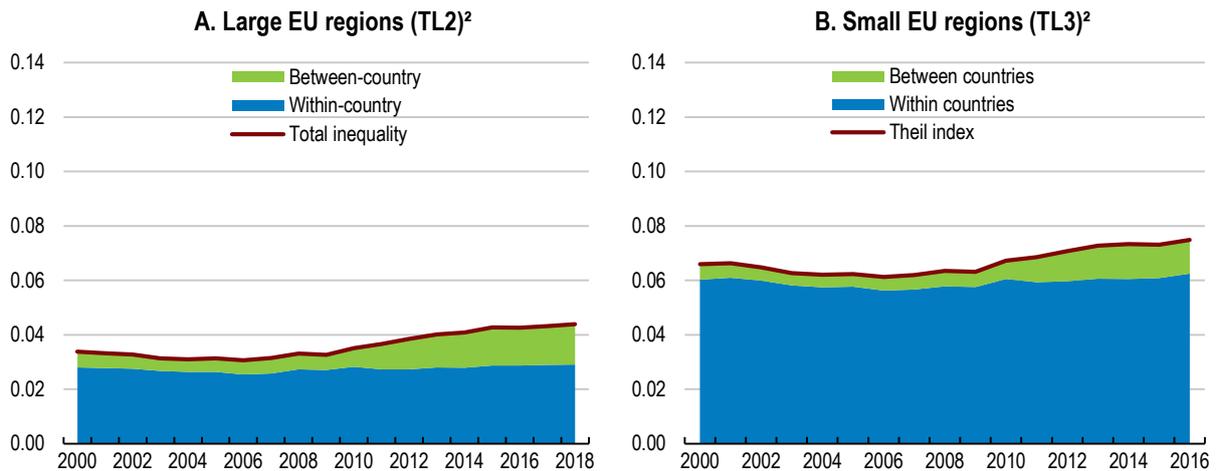


Source: OECD (2020), OECD calculations based on data from the OECD Regional Statistics (database).

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Figure 4. Divergence has increased among older EU member states

Theil indices¹ based on the distribution of regional GDP per capita (in 2015 constant USD PPPs)



Note: 1. The (population-weighted) Theil index is computed based on samples of 134 TL2 (Panel A) and 910 TL3 (Panel B) regions across 13 countries that were members of the EU before the 2004 enlargement and for which data on regional GDP per capita are available over the entire reference period, between 2000 and 2018 (2016 for panel B). Countries include: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Spain and Sweden. 2. Territorial Levels 2 and 3 (TL2 and TL3, respectively) refer to large and small regions, as defined by the OECD classification of geographic units. These categories correspond with Eurostat's NUTS 2 and NUTS 3 classifications, with the exception of Belgium and Germany where the NUTS 1 level corresponds to the OECD TL2.

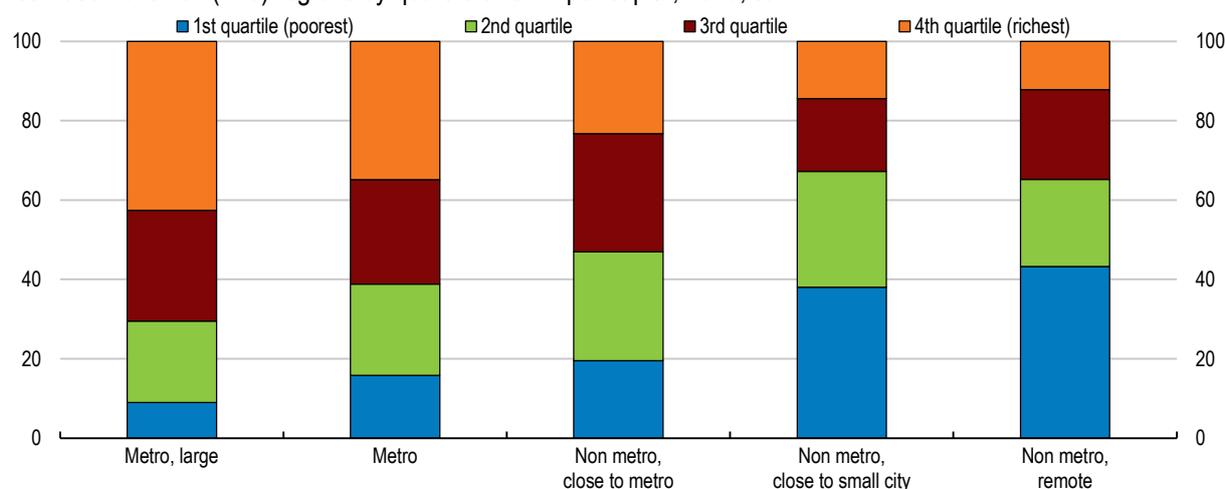
Source: OECD (2020), OECD calculations based on data from the OECD Regional Statistics (database).

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Conversely, regional inequalities within countries have remained broadly flat, even increasing somewhat (Figure 4, blue area). The different performance of rural areas, small cities or metropolises helps explain the persistence of disparities. Indeed, across the EU, the proportion of regions that are among the 25% richest is much higher among metropolitan regions than non-metropolitan or remote ones (Figure 5, in orange). Among metropolises, capital regions have tended to be particularly successful (Bisciari et al. 2020). Non-metropolitan regions with good accessibility (a 60-minute drive or less) to large cities (at least 250 000 inhabitants) are more often than not in the top half of the cross-regional distribution of GDP per capita and have managed to maintain their relative standing. In contrast, non-metropolitan regions that are remote or close to only a small city are disproportionately poor, and have lost further ground over the past two decades. In some of these regions agriculture still carries significant economic weight.

Figure 5. The gap between metropolitan and remote regions is very wide

Distribution of small (TL3) regions by quartile of GDP per capita, 2016, %



Note: Calculations are based on a balanced panel of 1 059 TL3 regions across EU countries that are also members of the OECD (EU22). Regional GDP per capita is measured in 2015 constant USD PPPs. Small (TL3) regions are classified based on the level of access to metropolitan areas. The proposed classification relies on a consistent concept of metropolitan area, which consists of Functional Urban Areas (FUAs) of at least 250 000 inhabitants and groups of contiguous local jurisdictions - mainly municipalities - that are aggregated based on functional criteria. A TL3 region can be classified as follows: Large Metropolitan, if more than 50% of its population lives in a FUA of at least 1.5 million inhabitants; Metropolitan, if more than 50% of its population lives in a FUA of at least 250 000 inhabitants (but fewer than 1.5 million); Non-Metropolitan with access to a Metropolitan TL3 region, if more than 50% of its population lives within a 60 minute drive from a Metropolitan region, or if the TL3 region contains more than 80% of the area of the FUA of at least 250 000 inhabitants; Non-Metropolitan, with access to a small/medium city, if the TL3 region does not have access to a Metropolitan region and 50% of its population has access to a small or medium city (between 50 000 and 250 000 inhabitants) within a 60 minute drive, or if the TL3 region contains more than 80% of the area of a small or medium city; Non-Metropolitan, remote, if 50% of its population does not have access to any FUA within a 60 minute drive. More details on the methodology underpinning TL3 regions' classification according to their metropolitan/non-metropolitan nature are provided in the following paper: 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>. Source: OECD (2020), OECD calculations based on data from the OECD Regional Statistics (database).

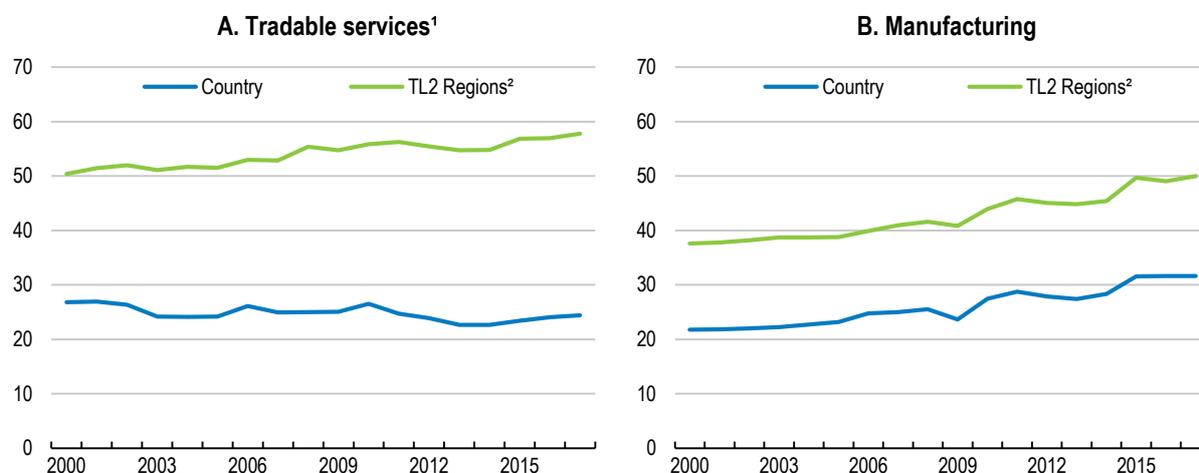
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Global trends have hampered regional convergence

Technological progress and globalisation have yielded important aggregate benefits, but have also made regional convergence more challenging (OECD, 2019a). In Europe and elsewhere, high-value added services have become more concentrated at the regional level (Figure 6, Panel A). This has mainly benefitted large cities, since productivity in knowledge-intensive sectors has proved particularly sensitive to agglomeration economies. This concentration yields macroeconomic benefits, but also raises equity concerns (Moretti, 2020).

Figure 6. Larger regions have diverged in their sectoral specialisation¹

Coefficients of variation of sectoral shares in total gross value added, EU27



Note: 1. Tradable services are defined as information and communication services (J) plus finance and insurance (K). 2. The charts are based on a sample of 192 TL2 regions from 25 EU countries. Territorial Level 2 (TL2) refer to large regions, as defined by the OECD classification of geographic units. This category corresponds to Eurostat's NUTS 2 classification, with the exception of Belgium and Germany where the NUTS 1 level corresponds to the OECD TL2. For TL2 regions in France GVA data from 2016 have been used for 2017.

Source: OECD (2020), OECD calculations based on data from the OECD Regional Statistics (database).

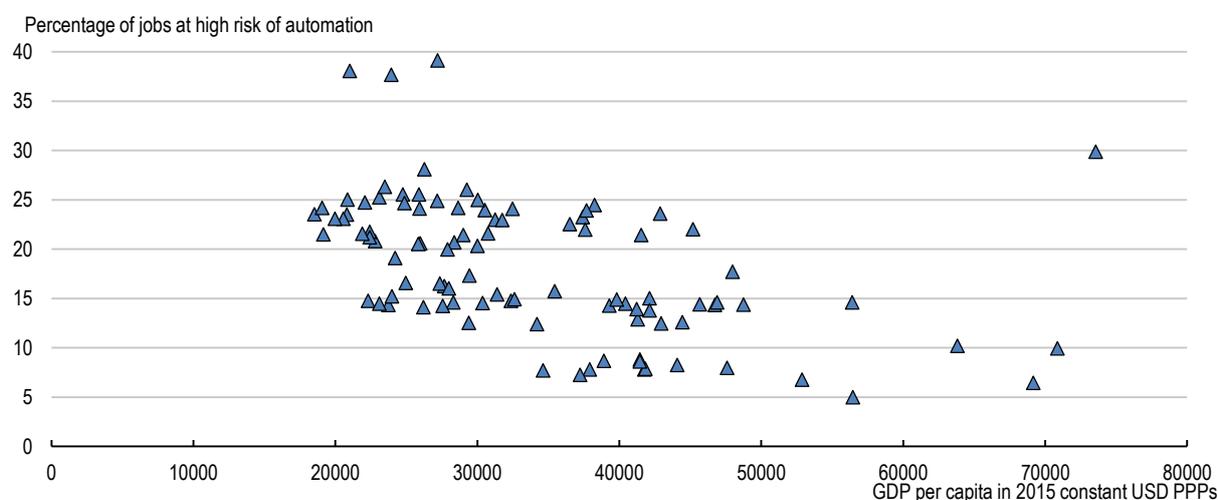
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Unable to attract sophisticated, tradable services, non-metropolitan regions have also often seen their manufacturing base wither and unemployment rise, notably due to stronger import competition from emerging economies (Autor et al., 2013). The ensuing higher reliance on non-tradable sectors tends to be detrimental in the long run for growth and jobs (OECD, 2018a), notably as there is often less innovation and productivity growth in sectors that do no export. Spatial divergence has ensued. For instance, since the 1980s, previous income convergence among US regions has been replaced by widening inequalities (Austin et al. 2018; Krugman 2019).

Without corrective action by public policies, the ongoing digitalisation and automation trends, set to accelerate in this decade, will likely aggravate regional divergence. Across European regions, the share of jobs at high risk of automation varies from 4 to 39% (OECD, 2019a), and tends to be correlated with income levels (Figure 7). Regions specialised in basic manufacturing will be worst hit, while prosperous regions with a highly-skilled labour force face the lowest risks, and are set to reap substantial gains from automation. The spatial concentration of job creation in Europe could thus intensify over the next decade (McKinsey Global Institute, 2020).

Figure 7. Poorer regions have more jobs at high risk of automation

2015



Note: Data reported is from 2015 and corresponds to regions (TL2) in the Czech Republic, Denmark, Estonia, Greece, Spain, Finland, Ireland, Italy, Poland, Sweden, Slovenia and the Slovak Republic. Territorial Level 2 (TL2) refers to large regions, as defined by the OECD classification of geographic units.

Source: OECD (2018), Job Creation and Local Economic Development 2018: Preparing for the Future of Work, <https://dx.doi.org/10.1787/9789264305342-en>; OECD (2020), OECD calculations based on data from the OECD Regional Statistics (database).

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The evolution towards a greener economy, if not accompanied by appropriate complementary policies, could also worsen regional divergence. Coal extraction and some coal-using industries (e.g. steel) tend to be geographically concentrated (Botta, 2019), often in less prosperous regions with limited productive diversification. In the EU, examples come from some German, Polish and Czech regions (Alves Dias et al., 2018). Closure or restructuring of coal-related activities to meet climate mitigation targets could therefore further impoverish those regions. Furthermore, a sharp reduction in CO₂ emissions from transport, also key for climate neutrality by 2050, could disproportionately weigh on incomes in rural areas, given their stronger dependence on private cars for mobility.

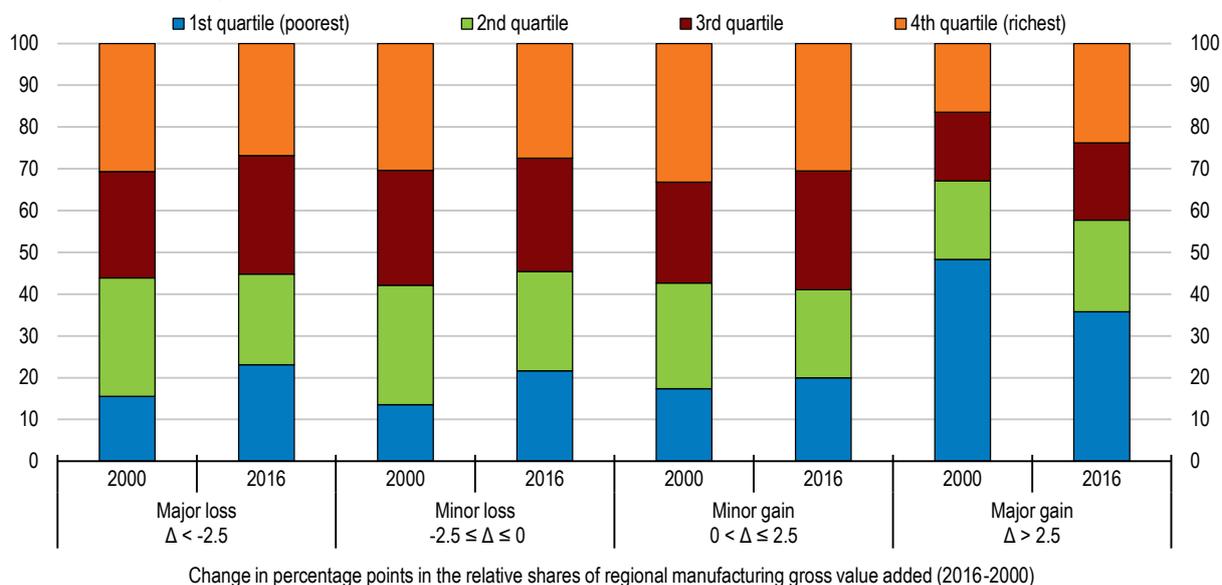
European-specific features have exacerbated those trends

Incomplete integration has compounded convergence challenges

Incomplete financial integration and procyclical fiscal policies have proved major obstacles to convergence in some parts of Europe, while in others cross-border trade and investment have fostered successful catching-up. In both cases, developments in productive specialisation have been major determinants of convergence or divergence (Mongelli *et al.*, 2016). Specialisation in manufacturing, which has become more asymmetric across countries and regions, is a case in point (Figure 6, Panel B). The integration of central and eastern European countries into German-centered supply chains, made possible by large-scale FDI from Germany, has been key to preserve or even increase the share of manufacturing in GDP in the countries and regions involved, and a major driver for convergence by the EU new member states (Dauth et al., 2017; Franks et al., 2018). In contrast, much of the rest of the EU has undergone marked deindustrialisation. Regions where manufacturing lost weight have become relatively poorer, sliding to lower quartiles of the cross-regional distribution of GDP per capita (Figure 8). Furthermore, countries facing deindustrialisation have tended to witness an increase in income inequality across their regions (OECD, 2017a).

Figure 8. Loss of manufacturing has been associated to declining prosperity

Distribution of TL3 regions by quartile of GDP per capita, EU27



Note: Regional GDP per capita is measured in 2015 constant USD PPPs. Territorial Levels 3 (TL3) refer to small regions as defined by the OECD classification of geographic units; they are consistent with NUTS 3 regions, as defined by Eurostat's classification. Calculations are based on a balanced panel of 1 060 TL3 regions from 25 EU countries. For Croatia and some TL3 regions in Italy GDP per capita data from 2001 have been used for 2000.

Source: OECD (2020), OECD calculations based on data from the OECD Regional Statistics (database).

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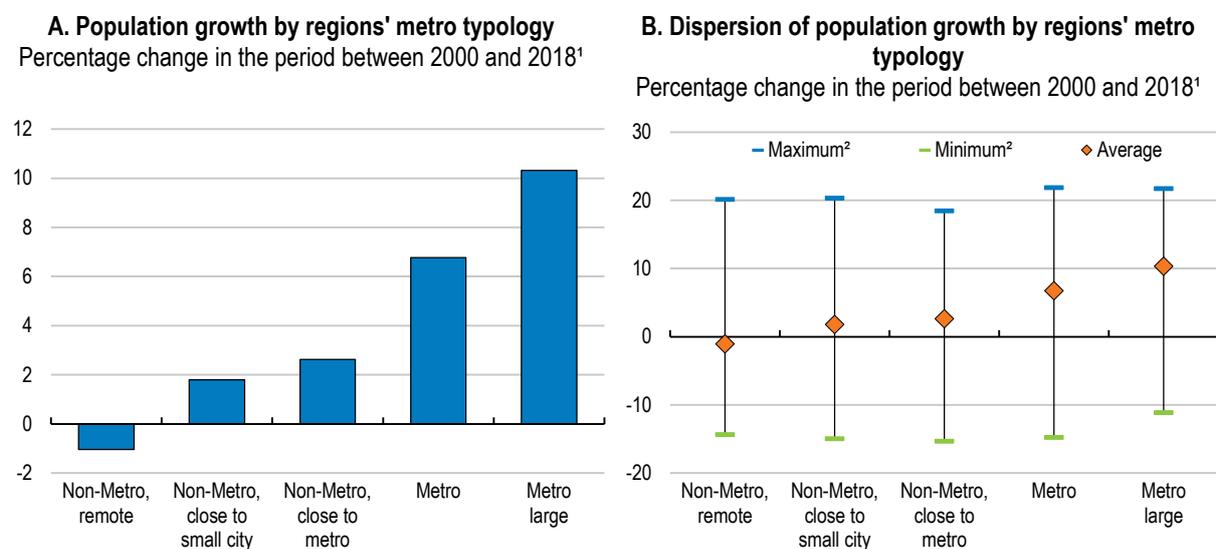
In Southern countries, destabilising capital flows and less effective fiscal governance, including excessive austerity during the sovereign debt crisis, have contributed to adverse developments in productive specialisation. In the run-up to the global financial crisis, large intra-euro area capital flows mainly financed investment in low-productivity, non-tradable sectors, such as construction (Franks et al., 2018). Pro-cyclical fiscal policies have also fuelled the expansion of non-tradables. The ensuing labour cost pressures further undermined the competitiveness of manufacturing, compounding the impact of competition from emerging economies in sectors such as textiles (Mongelli et al., 2016). When the sovereign debt crisis hit, the reversal of capital flows and the absence of European fiscal tools led to an abrupt adjustment and economic divergence.

Labour mobility in the EU has played a modest role in the adjustment to economic shocks. Some mobility has been at play, mainly towards metropolitan regions (Figure 9). However, as further discussed in the 2021 OECD Economic Survey of the Euro Area, overall mobility between EU countries, despite having increased over the last decade, still remains limited. Furthermore, within EU countries, inter-regional mobility in response to different labour market conditions has also been insufficient, especially in Southern countries like Italy and Spain (OECD, 2017a).

While stronger mobility is desirable, there are nonetheless limits to what it can achieve in terms of reducing regional disparities. For instance, workers with only medium or low qualifications typically have less opportunities and less incentives for moving, notably because shrinking wage premia in cities (Autor, 2019) could be wiped out by the higher urban living cost. In addition, a sizeable share of highly skilled workers among migrants may also entail as a downside significant brain drain for poorer regions, hampering their potential for productive upgrading, as further discussed in the 2021 OECD Economic Survey of the Euro Area.

Figure 9. People have moved to metropolitan areas

Population growth in different types of regions, 2000-2018



Note: 1. Calculations based on a sample of 1 068 TL3 regions in EU countries that are also members of the OECD (EU22) and for which data are available in both years. See footnote 1 of Figure 5 for more details on TL3 regions. 2. Minimum and maximum regional population growth rates, for the period between 2000 and 2018, are computed for each metropolitan typology by excluding percentage changes below and above the 5th and the 95th percentiles, respectively.

Source: OECD (2020), OECD calculations based on data from the OECD Regional Statistics (database).

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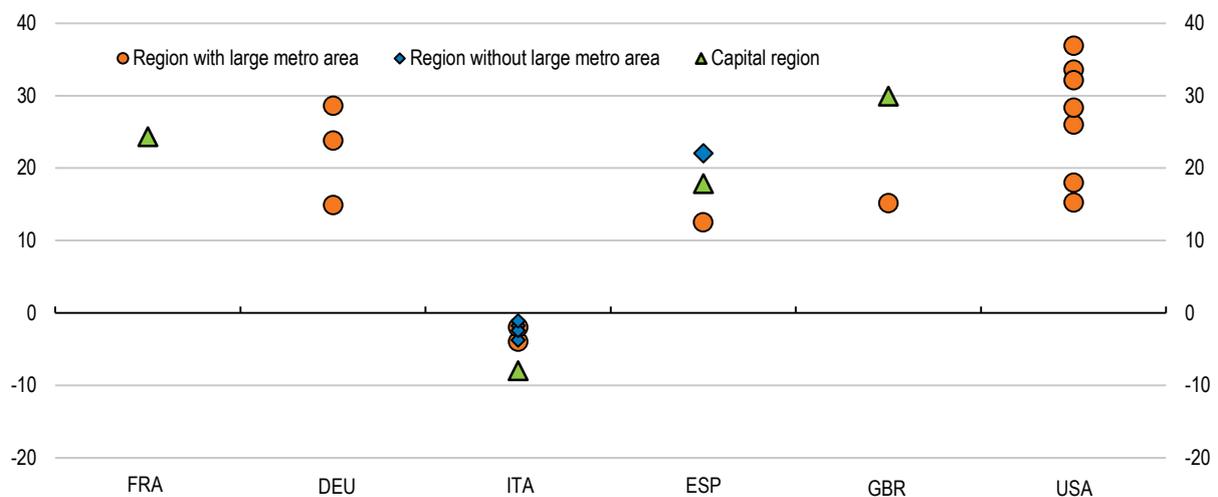
Low growth and low spillovers have posed additional difficulties

Generally modest growth in wealthy European regions has weighed on their ability to generate spillovers to other territories, as well as on aggregate economic performance. GDP per capita growth in the most prosperous European regions has often lagged that of their US counterparts (Figure 10). Weaknesses in innovation help explain limited growth, with only slow increases in spending on R&D and much scope to upscale cross-border joint research and innovation projects. Progress on these fronts, and in particular cooperation in developing technologically innovative value chains, would have to rely to a large extent on the most advanced regions, given their stronger resources and capabilities. However, those initiatives would also provide a framework for involving less advanced countries and regions, helping them to upgrade their productive specialisation (Strategic Forum for IPCEI, 2019).

There is also scope to increase spillovers from large European cities to other regions. Productivity spillovers from metropolises can benefit smaller cities and surrounding regions as far as 200 to 300 kilometres away (OECD, 2015a), a likely driver of robust growth in the extended suburbs of US large cities (McKinsey Global Institute, 2019). In Europe, however, it is not uncommon to find underperforming regions within a smaller radius of thriving urban hubs (Bisciari et al., 2020; McKinsey Global Institute, 2020). Furthermore, in several European countries, second-tier cities have often failed to generate substantial agglomeration economies, and thus to achieve rapid productivity growth (OECD, 2020b; OECD, 2011).

Figure 10. Growth in the wealthiest European regions has often been outpaced by their US counterparts

Cumulative percentage growth in regional GDP per capita, 2000-2018 (in 2015 constant USD PPPs)



Note: The figure shows growth in Territorial Level 2 (TL2) regions with a level of GDP per capita in 2018 above the respective national average. TL2 regions are considered (not) to have a large metro area if they (do not) contain a Territorial Level 3 (TL3) region classified as a large metropolitan region. Economically small regions (defined as those accounting for less than 1/N of national GDP in 2018, where N is the number of TL2 regions in the respective country) are not displayed.

Source: OECD (2019), OECD calculations based on data from the OECD Regional Statistics (database).

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Resuming convergence calls for a wide set of policy actions

Public policies need to do more to harness the potential of technological, globalisation and environmental trends for growth and well-being, and avoid that those trends, if unmanaged by policy action, further aggravate regional divergence. This paper proposes two broad strands of action to foster growth and well-being in all regions, and avoid that some lag behind or decline.

Firstly, building on modern approaches to regional development and to industrial policy, place-based policies are needed to help all regions upgrade their productive specialisation, which is key to address the challenges discussed above. To support productive upgrading and thus accelerate growth, the next section first discusses policies to foster the development of innovative value chains in the EU, using tools from R&D support to public procurement, while ensuring that the benefits spread to less prosperous regions. Those policies will be closely linked to those that promote agglomeration economies and spillovers from cities, such as housing and transportation policies. The section will then assess how competition and trade policies can enhance the benefits of open and competitive markets for improvements in productive specialisation. Policies need to address new challenges to competition, stemming notably from digitalisation and foreign subsidies. Finally, the section will discuss productive upgrading as a response to climate change challenges.

Secondly, while the EU budget remains limited in size, it should be used more effectively to support regional convergence, especially using its two largest spending items, cohesion policy and the common agricultural policy. These policies need to be better geared towards improving regional productive specialisation while avoiding any counterproductive impacts, such as support to inefficient firms or activities. In the case of cohesion policy, a long-standing EU tool to address regional disparities, greater effectiveness calls for improvements in institutional quality, project selection and public procurement. These reforms are also key to maximise the impact of Next Generation EU, the recovery plan in response to the pandemic. To help poor rural regions converge, the common agricultural policy should be made

more targeted and more conducive to productivity gains in rural areas, namely by reforming distortive payments to producers, investing more in innovation and through better coordination with cohesion policy.

Policies to help regions upgrade their specialisation in a rapidly changing world

Restructuring or phasing out decaying sectors and moving into new activities of high value-added is a challenge for all regions. This challenge is probably the highest for poorer regions that still rely on carbon-intensive activities, which are meant to be scaled down. But productive upgrading is also a challenge even for the most prosperous European regions, which face increased global competition and must innovate to remain at the technological frontier. There is scope to better exploit complementarities and spillovers between regional strategies, through collaborative efforts and the development of innovative value chains.

Building on new approaches to regional and industrial policies: fostering innovation and agglomeration economies

Place-based strategies for productive upgrading

Since the late 1980s, regional policy has abandoned its former emphasis on the provision of infrastructure and on subsidy-based interventions to influence firm location decisions in favour of poorer or high-unemployment regions. Instead, recognising that sound nation-wide structural settings are often not enough to ensure regional convergence, a place-based approach to regional development has emerged, aimed at fostering regional competitiveness (OECD, 2019a). Place-based policies emphasise the coordination of the different sectoral interventions that may be necessary, in interaction with private actors, to support the development of certain sectors, building on regional strengths. Rather than “picking the winners”, place-based policies aim at favouring the emergence of competitive companies and activities. Sectoral interventions can be as diverse as training, transport, R&D or land use, among others. Diverse policy levers are often in the hands of different levels of government, thus calling for coordination among them. Furthermore, diffusing innovation is acknowledged as key for upgrading the regional productive specialisation (OECD, 2019b). In turn, innovation and its diffusion is favoured by the agglomeration economies in large cities (Puga, 2009).

Modern approaches to industrial policy tend to be supportive of place-based strategies. They emphasize the importance of public support, in partnership with the private sector, for finding what a country or region is good at producing. Promoting entry into new activities and experimentation generates valuable information about the ensuing success or failure and, in the former case, paves the way for imitation and diffusion (Hausmann and Rodrik, 2003). Both place-based regional development and modern industrial policy underline the importance of local conditions for innovation and innovation diffusion, of policy experimentation and of competition-friendly partnerships with the private sector (see below). Both also emphasise that tradable sectors are essential for economic development. Korean technoparks exemplify this policy approach (Box 1). Another example are the Industrial Alliances created by the European Commission (e.g. on batteries, circular plastics or hydrogen), in which Member States and the private sector together identify the needs and determine long term strategies. These alliances are an important component of the EU Industrial Strategy (European Commission, 2021a). In cohesion policy, the concept of smart specialisation also largely takes on board these insights. It involves prioritising support to certain sectors, selected through interaction with the private sector, which have the potential to generate agglomeration economies (Correa and Guceri, 2016).

Box 1. Supporting regional innovation and development: Korean technoparks

Technoparks were created in 1998 as a response to the growing concentration of economic activity around Seoul. Besides providing basic infrastructure and acting as a business incubator, technoparks aim to support innovation and the development of new industries by fostering cooperation between SMEs, universities and research institutes, the central government and local authorities.

From the initial six technoparks, the network has expanded to the current 19, covering all the provinces and metropolitan areas of Korea (Rhee, 2021). Technoparks have supported a variety of different industries according to regional strengths. Their countrywide presence also illustrates that regional policy concerns all regions, and not only the least prosperous ones.

Together with other regional development programmes, technoparks have contributed to strong economic growth outside Greater Seoul (Rhee, 2021), and thus to keeping regional disparities in GDP per capita at a relatively low level in international comparison.

It is important to ensure that industrial policy along these lines does not conflict with competition policy. Indeed, disciplining devices, such as making support to new activities time-limited, are key to avoid ending up supporting inefficient, rent-seeking incumbents (OECD, 2018b; Rodrik, 2004; Hausmann and Rodrik, 2003). There can be complementarity between competition and industrial policy: when state aid is targeted at competitive sectors or, within a sector, allocated in a competition-friendly way, it tends to be more effective in increasing productivity growth (Aghion et al., 2015). For regions in industrial transition, place-based strategies emphasise the importance of market entry by new players and openness to knowledge from outside the region to avoid lock-in, i.e., enduring specialisation in traditional industries dominated by local incumbents (OECD, 2019b).

While modern regional and industrial policies are relevant to all regions, they are admittedly harder to apply in poorer and more peripheral ones. For instance, less diversified and sophisticated productive structures can make knowledge spillovers among technologically-related sectors and the ensuing emergence of new industries less likely (Asheim et al., 2011). Furthermore, avoiding policy capture by vested interests will be harder in more peripheral regions, with few large players and weaker institutional capabilities (Boschma, 2013).

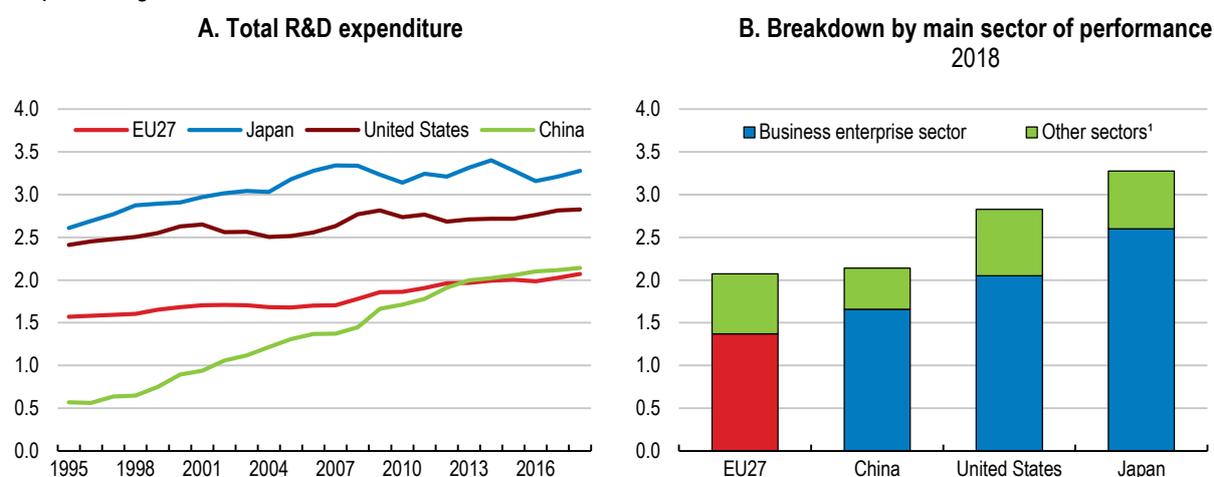
The following sections will assess how European cooperation on innovation policies could be enhanced and how spillovers from large cities could be improved.

Upscaling European cooperation in innovation policies

Europe has been falling behind in innovation, which is a major threat to long-term prosperity. Investment in R&D has been progressing slowly, and remains far below the 3% of GDP target set for 2020 (Figure .11). Europe's comparative weakness lies in R&D performed by firms, whose growth over the past two decades has not closed the gap to the USA or Japan and has been strongly outpaced by China. In turn, this weakness is both a cause and a consequence of a smaller weight of high-tech sectors (such as ICT) in the EU economy (European Commission, 2017a; OECD, 2017b). In particular, Europe has performed poorly at scaling up new firms: no European company created in the past 3 decades has made it to the top 100 global firms by market capitalisation (McKinsey & Company, 2019).

Figure 11. The EU lags behind in R&D performed by firms

As a percentage of GDP



Note: 1. Other sectors include R&D performed by government, higher education institutions and the private non-profit sector.

Source: OECD (2020), OECD Main Science and Technology Indicators - MSTI (database).

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Incomplete product market integration (which hinders the growth of start-ups) and fragmented capital markets (which contributes to the lack of financing for start-ups) are partly to blame for Europe's relative weakness in turning scientific prowess into innovation and growth. Services sectors are particularly affected by fragmentation, which helps explain their very weak productivity growth since the turn of the century, as analysed in the 2018 OECD Economic Survey of the EU.

Besides market fragmentation, a limited exploitation of synergies between different national and regional efforts has also weighed on Europe's innovation performance. Collaborative innovation efforts across Europe help create critical mass while benefitting from the continent's diversity (McKinsey & Company, 2019), which can be a source of spillovers. To promote synergies, Horizon 2020, the main EU research and innovation programme in 2014-2020, has fostered the creation of cross-border networks and lasting cooperation between national funding agencies. However, the ensuing impact on the orientation of national research strategies and policies has often been small (European Commission, 2017b). Within Horizon 2020, a large number of different funding instruments has reduced readability for potential beneficiaries. The provision of financial support to Covid-19 vaccine development illustrates these limitations: a proliferation of national and European funding schemes makes support more complex and less transparent and, in the end, does not avoid that the overall sums made available remain well below those of others, such as the US (Aghion et al., 2020).

Horizon Europe, the successor of Horizon 2020 for 2021-27, is preparing five large-scale inter-disciplinary mission areas to tackle global challenges (adaptation to climate change, cancer, oceans, cities and soil), which may serve as a catalyst for cross-country cooperation. Mission areas may also help define promising opportunities for private investment, *inter alia* because stronger innovation potential often lies at the intersection of different technologies (Mazzucato, 2018). To these ends, Horizon Europe is pursuing an enhanced and simplified approach to partnerships involving public or private participants, with the potential to pool efforts in promising domains like health innovations, artificial intelligence or hydrogen technologies. Forty nine European Partnerships have been identified: 11 have already been launched and all the others are taking the final steps towards their launch. The new European Innovation Council (EIC), which shares some features of the renowned DARPA agency in the US (Box 2), has the potential to further stimulate cross-border collaboration in R&D.

Box 2. Fostering breakthrough innovation and collaborative efforts: DARPA and EIC

The Defense Advanced Research Projects Agency (DARPA) is an agency of the US Department of Defense that manages and finances R&D programmes for national security. Created in 1958 as a response to the Soviet Sputnik launch in the previous year, DARPA emphasises high-risk, high-return projects aiming at turning results from fundamental research into practical technological advances. The ensuing innovation breakthroughs often find uses and applications far beyond the military sphere: the Internet, the Global Positioning System (GPS) and automated voice recognition and language translation are some examples.

DARPA benefits from light and flexible administrative and contracting arrangements, enabling it take swift advantage of opportunities. About 100 programme managers, recruited from universities, firms or other government agencies for limited periods (generally 3 to 5 years), oversee around 250 R&D programmes. These managers enjoy large autonomy in the recruitment of researchers and in setting up collaborations involving universities, start-ups or large firms. Regular monitoring and reporting mechanisms ensure that programmes which fail to deliver results (as some will do, due to their high-risk nature) can be discontinued.

At around USD 3 billion per year, DARPA's budget is relatively modest, accounting for only 2% of US federal R&D spending (Congressional Research Service, 2020). However, due to the research collaborations it coordinates, it ends up directly mobilising a higher amount of investment. DARPA's activities are also likely to crowd in private investment in R&D (Moretti et al., 2020).

Part of Horizon Europe, the European Innovation Council (EIC), formally launched in March 2021 but building on a 2018-20 pilot phase, is an ambitious innovation initiative endowed with a budget of EUR 10 billion for the period 2021-2027. Inspired to some extent by DARPA, the EIC aims to identify, develop and scale-up high-risk, high-impact breakthrough technologies and disruptive innovations.

The EIC has two main components, Pathfinder and Accelerator, with Transition activities to bridge any gap between them. The EIC Pathfinder is grant-based and supports research teams to transform scientific advances into new technologies. As in DARPA, programme managers (4 of which had already been appointed by end-2020) will help shape project portfolios and bring together stakeholders to foster collaboration and reach critical mass. The EIC Accelerator supports start-ups, SMEs and exceptionally mid-caps to develop and scale-up innovations, notably through a mix of grants and equity investments (blended finance). This acknowledges the need to substantially increase support to breakthrough, market-creating innovation, as few young and fast-growing innovative companies have taken part in Horizon 2020 (European Commission, 2017b).

The EIC Accelerator is a welcome and innovative feature without parallel in DARPA, which can arguably rely on a large public procurer (the US Department of Defense) to foster innovation development.

Horizon Europe funding remains insufficiently ambitious, but the Recovery and Resilience Facility (RRF, the largest component of the EU recovery plan) may be used to boost investment in research and innovation. At EUR 84.9 billion (at 2018 prices, including top-ups from Next Generation EU and competition fines), Horizon Europe's envelope is only 9% larger than Horizon 2020's initial budget, though the increase becomes more sizeable if the comparison takes account of subsequent reductions in Horizon 2020's resources (+14%) and, additionally, if one also subtracts Horizon 2020 expenditure allocated to the UK (+30%). By strongly embedding research and innovation into national recovery and resilience plans (discussed in the 2021 OECD Economic Survey of the EU), RRF funding may be used to help member states deliver on recent commitments, namely in the context of a revamped European Research Area (European Commission, 2020a), such as achieving a 1.25% of GDP public R&D effort by 2030.

Cooperation between EU countries and public support are also important for stages of innovation that are closer to the market (e.g. first industrial deployment) but entail significant risks. An important tool in this context is state aid under the IPCEI (Important Projects of Common European Interest) framework, which supports highly innovative projects involving several member states. Since 2014, three IPCEI projects in the field of research and innovation have been submitted to and approved by the Commission, on microelectronics (2018) and batteries (2019 and 2021). More such projects should be developed, which strong Commission involvement may facilitate, given the need for substantial coordination among countries and firms. Indeed, preparations for a possible IPCEI in the area of hydrogen infrastructure development are underway. Synergies with Horizon Europe partnerships should be exploited, and the state aid notification and scrutiny process streamlined (European Commission, 2019b).

At the same time, it is essential to continue to ensure that distortions to competition are minimised and spillovers to the rest of the economy enhanced. This requires inter alia that: (i) in each project many different companies are supported, including direct competitors; (ii) the project could not be carried out in the absence of aid; and (iii) research results are widely disseminated. Furthermore, to avoid negative impacts on regional convergence, it is of great importance that IPCEIs are accessible for participation to all member states: the three IPCEI projects approved so far have involved a limited, although increasing, number of countries (12 EU member states and the United Kingdom), mostly among the larger and richer ones. Wider participation also calls for greater involvement of firms from other countries, including SMEs, either as direct aid beneficiaries or through their integration in the relevant value chains. The recent proposal to revise the IPCEI framework includes provisions to widen participation across countries and by SMEs, which is welcome in order to make the process more inclusive and transparent.

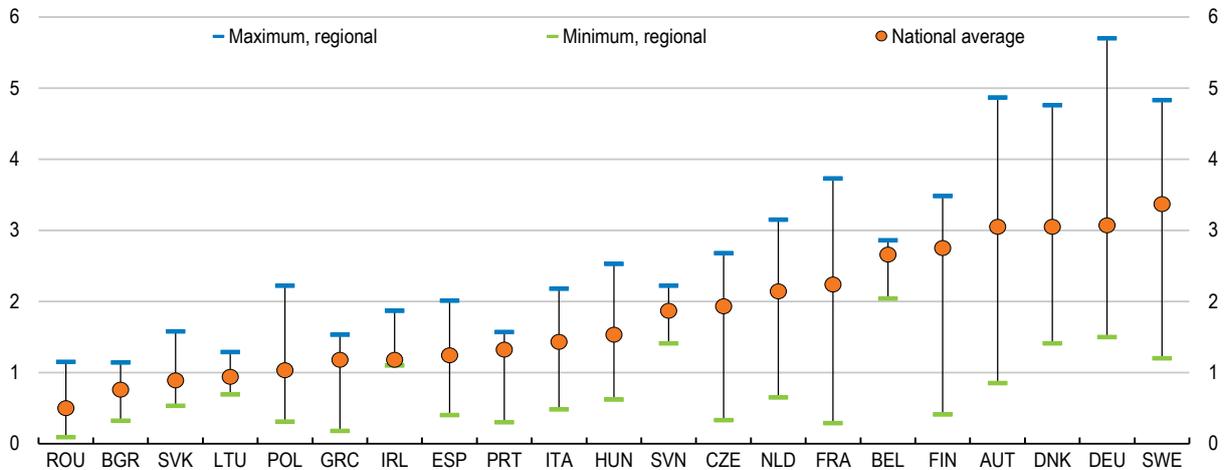
There is also scope for greater integration and cooperation in public procurement, which can help stimulate innovation by creating markets for new products and services. The current fragmentation of public procurement hampers stimulus to innovation, as the demand pull may not reach critical mass (European Commission, 2014). Despite legislation which is open to foreign bidders, in EU countries only about 3% of total public procurement value over 2009-2015 was accounted for by bidders located in a country different from the buyer's, though indirect cross-border procurement via local subsidiaries reached a higher (20%) share (European Commission, 2017c). Greater *de facto* openness by procurers to bidders from other countries would encourage their participation in tenders (which current legislation already amply allows) and increase the odds that an innovator will be able to sell abroad. In tandem, it is important to increase cross-country joint procurement, which remains very small despite dedicated support mechanisms in EU research and innovation programmes. Indeed, alongside R&D funding and state aid, public procurement is a domain where cross-country cooperation is essential to foster the development of strategic value chains in the EU.

Strengthening innovative capacity in less prosperous regions

European countries and regions vary widely in the intensity of their R&D efforts (Figure .12), and these are often too small. Some variation in R&D efforts may simply reflect an efficient choice of specialization. Indeed, the comparative advantage of some regions may lie in traditional manufacturing and services, where the scope for R&D investment is more limited than in knowledge-intensive industrial sectors. However, firms in low-tech sectors can also benefit from subsidies for collaborative industrial research, sometimes to a larger extent than firms in technologically advanced industries (Crescenzi *et al.*, 2018). Higher R&D investment in low-tech manufacturing or in lagging regions can yield sizeable productivity gains, notably by promoting technology adoption by firms operating below the national productivity frontier (Kierzenkowski *et al.*, 2017; OECD, 2018c, 2019a). The meagre R&D investment observed in many regions is thus an obstacle to innovation and innovation diffusion.

Figure 12. Many EU countries and regions have meagre R&D investment

As a percentage of GDP, 2018 or latest year available



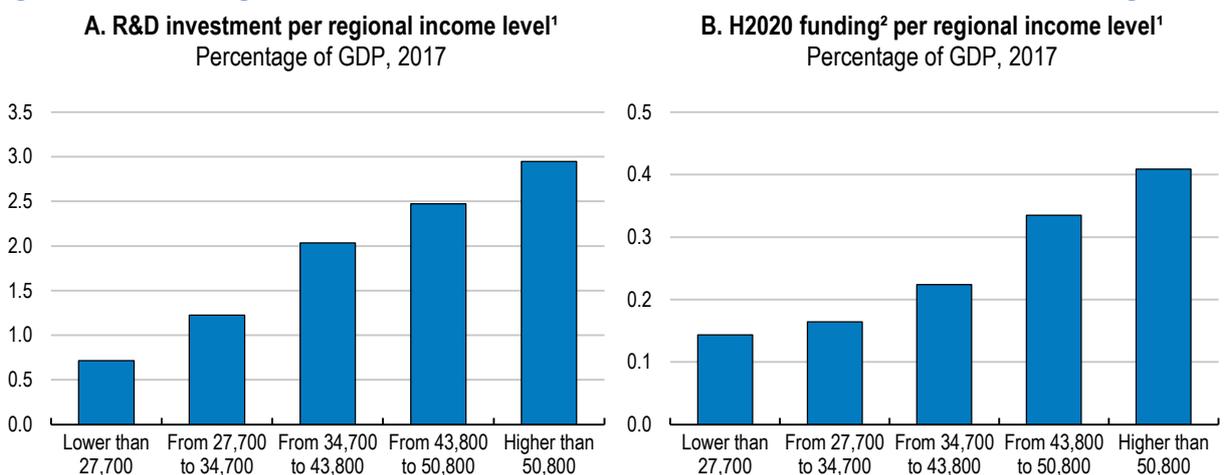
Note: 2013 for France; 2015 for Ireland; 2017 for Austria, Belgium, Denmark, Germany, Poland, Portugal, the Slovak Republic, Slovenia and Sweden.

Source: OECD (2020), OECD calculations based on data from the OECD Regional Statistics (database).

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Better integration of research and innovation policy with cohesion policy is key to increasing support to innovation in less prosperous regions, which have small R&D investment (Figure 1, Panel A). Their more prosperous counterparts have tended to absorb most of Horizon 2020 funding, in line with their more mature research and innovation systems and the programme’s emphasis on excellence as an evaluation criterion (Figure 13, Panel B). Besides Horizon 2020 initiatives to widen participation by lagging countries, a number of steps have been recently taken to combine financial resources from cohesion policy with the merit-based assessment mechanisms of R&D programmes.

Figure 13. Richer regions invest more in R&D and have received more Horizon 2020 funding



Note: 1. Income level groups of TL2 regions are based on 2018 GDP per capita in 2015 constant USD PPPs. Territorial Level 2 (TL2) refers to large regions, as defined by the OECD classification of geographic units. This category corresponds with Eurostat’s NUTS 2 classification, with the exception of Belgium and Germany where the NUTS 1 level corresponds to the OECD TL2. Panel A is based on data for 189 TL2 regions from 24 EU countries. Panel B is based on data for 191 TL2 regions from 25 EU countries. 2. Cumulated funding from 2014 up to 2019.

Source: OECD (2020), OECD calculations based on data from the OECD Regional Statistics (database) and Eurostat Regional Economic Accounts (database).

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The Seal of Excellence label attempts to enlarge the sources of funding for research and innovation projects. The label is awarded to non-funded high quality Horizon 2020 proposals worthy of financial support from other sources. However, available information suggests that alternative public funding for these proposals stays at less than 1% of the amount they had requested from Horizon 2020, *inter alia* due to difficulties posed by State aid rules (European Commission, 2017b).

The Commission has recently revised State aid rules to facilitate support granted by Member States to SMEs for Seal of Excellence projects, through simpler procedures and the possibility of higher ceilings. The same revision of rules also provides for easier combination of national and Horizon Europe funding for research and innovation activities. Seal of Excellence quality labels will continue to be awarded under Horizon Europe (2021-27).

In another step to more easily use cohesion funding in support of research and innovation, regulations for 2021-27 Cohesion Policy enable countries to transfer up to 5% of their cohesion allocation to Horizon Europe, ring-fenced for competitively selected national projects. These new possibilities should be taken advantage of in support of national and regional innovation policies.

Interregional cooperation supports innovation and, more generally, tends to enhance the benefits from cohesion policy. Recent evidence suggests that greater participation in joint cohesion policy projects with other regions is associated to stronger regional economic growth (Darvas *et al.*, 2019). Often these projects bring together neighbouring regions from different countries, *inter alia* to develop cross-border transport or public services infrastructure. Certain projects may be essential to improve accessibility to markets across the border, and yet they could receive very low priority in a purely national logic. Other fields for cooperation, however, do not require geographical contiguity. For instance, cooperation among regions is of value in the design and implementation of smart specialisation strategies, notably to improve positioning in European value chains, though much scope for larger joint investment remains (European Commission, 2019b; Cohen, 2019). One benefit from cooperation is the possibility of sourcing knowledge from outside the region, which reduces the reliance on incumbent local players and fosters innovation (OECD, 2019b). Cooperation with more advanced partners also contributes to capacity building in poorer regions (Darvas *et al.*, 2019).

To promote interregional cooperation, cohesion policy rules for 2021-27 generalise the possibility, hitherto restricted to specific programmes, for a region to use part of its cohesion allocation to fund joint projects anywhere in the EU. In addition, new provisions will simplify the implementation of cross-border projects, such as the possibility to sometimes apply a country's rules to a project taking place across the border. Countries should make an active use of these new possibilities to further engage in interregional projects.

Making the best of urban spillovers

Large cities play a key role in productive upgrading. Urban agglomeration economies lead to higher productivity, due to a larger pool of skilled workers, better matching in labour markets and supply chains, and the promotion of innovation and knowledge diffusion (Puga, 2009). For similar levels of skills, workers' productivity may increase by 0.2-0.5% in a city with 10% more population (Ahrend *et al.*, 2017). Furthermore, productivity spillovers from metropolises can benefit smaller cities and surrounding regions as far as 200 to 300 kilometres away (OECD, 2015a). However, poor governance arrangements can negate the agglomeration benefits of a larger city. In functional urban areas (defined taking account of commuting patterns), a fragmented administration (*i.e.*, a higher number of municipalities) is associated with lower productivity, especially if no metropolitan governance arrangements exist, reflecting poorer coordination in areas like spatial planning or transport (Ahrend *et al.*, 2017). For instance, inadequate public transport makes areas accessible for daily commuting smaller, and thus labour markets less deep, to the detriment especially of low-income workers (OECD, 2015a).

A flexible and responsive housing supply is essential to enhance agglomeration economies by enabling cities to grow, including those of medium or small size. Supply rigidity makes house prices soar when demand increases, which hampers the creation of high-productivity jobs by preventing suitable candidates from relocating, with large ensuing macroeconomic costs (Hsieh and Moretti, 2019). In several EU economies, including the largest ones, national-level estimates point to significant supply rigidity (Cavalleri et al., 2019), which is corroborated at the level of large cities and their surrounding commuting zones (Bétin and Ziemann, 2019). At this latter level, current residents will not likely be enough to fill projected job creation over the coming decade (McKinsey Global Institute, 2020).

Making land use regulation less restrictive is a key policy lever to increase the responsiveness of housing supply. Entrusting zoning to local authorities, or effectively giving them veto rights in the matter, is associated to a less elastic supply (Cavalleri et al., 2019), likely because not-in-my-backyard behaviour by local owners gains greater political clout. Delegating land use regulation to higher-level, metropolitan authorities is thus advisable, and could be made easier if those authorities are elected, and thus have reinforced democratic legitimacy. Tight rent controls and generous tax relief for home ownership are other policy drivers of housing supply rigidity, and thus should also be areas for reform. Long overdue investment to make housing more energy-efficient is projected to put upward pressure on prices (Cournède *et al.*, 2020), making reforms to enhance supply responsiveness even more urgent.

Making more territories benefit from agglomeration economies should also be a priority. Reducing travel time from smaller towns to large cities can help the former benefit from agglomeration economies, and thus achieve higher productivity (OECD, 2019b). High-quality internet connectivity at competitive prices will help increase the size of local labour markets through more widespread teleworking. Second-tier cities can gain critical mass to generate stronger agglomeration economies through closer integration with their surrounding regions and smaller towns, for instance by planning joint infrastructure or enhanced collaboration between universities and firms (OECD, 2020b). This often requires effective coordination between different levels of government (e.g. central, regional, metropolitan, local), as well as between similar-level authorities (e.g. municipalities). In Hungary, the city of Győr, with only about 130,000 inhabitants, illustrates the importance of engaging with the local business sector (where FDI plays a major role) and educational institutions to generate agglomeration effects (Lux, 2015), as analysed in the 2019 OECD Economic Survey of Hungary.

Trade and competition policies for a level playing field

Competitive product markets are essential for the success of place-based strategies, since they strengthen incentives to innovate and promote innovation diffusion (Andrews et al 2015). Active enforcement of competition rules in the European market and openness to international trade and investment should therefore remain policy priorities.

At the same time, preserving a level playing field and avoiding competitive distortions requires that competition, trade and investment policies adapt their tools to respond to new challenges brought about by globalisation and technological change. These concerns are acknowledged by recent Commission work on competition policy, as well as by its trade policy review. For instance, market characteristics favoured by digitalisation, such as strong economies of scale and network effects, may in certain cases hamper competition. Distortions induced by subsidies from non-EU governments or public bodies (henceforth, foreign subsidies), which fall outside EU State aid control, are another case in point.

Trade and investment policies to minimise competitive distortions

The implications of subsidies for international trade are regulated by the WTO's Agreement on Subsidies and Countervailing Measures, but this framework has increasingly come under strain. Under current rules, a few categories of subsidies are forbidden (e.g. subsidies contingent on export performance), while all the others are permissible provided international trade is not distorted. However, WTO rules work best for

financial contributions granted by public authorities and for simple supply chains contained within national borders. Today's reality of complex, international value chains and of multiple forms of public support, far beyond direct grants and sometimes through State-owned enterprises or the financial system, raises the burden of proof and makes rules harder to enforce (Jean *et al.*, 2019; OECD, 2019c). Furthermore, WTO members often do not comply with subsidy notification requirements.

A country harmed by an allegedly distortive foreign subsidy may investigate the matter and apply, under WTO conditions and limits, countervailing duties. Alternatively, the country may seize the WTO's dispute settlement mechanism. In this case, if the subsidy is deemed illegal and not discontinued, the injured party can adopt retaliatory countermeasures (e.g. higher customs duties) only at the end of the dispute settlement procedure, including a possible appeal.

To better address distortive subsidies, the EU strengthened its trade defence instruments in 2018. Notably, this reform has enabled the Commission to impose countervailing duties to offset the full extent of subsidisation, and it has streamlined the procedural framework to provide more effective protection against opaque foreign subsidisation. Furthermore, the Commission has continued to address new forms of subsidisation by third countries, notably those resulting from international value chains. These steps may help to curb distortive practices, but they have limitations. For instance, upgraded trade defence instruments cannot deal with all detrimental effects of industrial subsidies, such as the distortion of competition in third markets.

Importantly, the EU trade policy review (European Commission, 2021b) is not limited to autonomous measures (taken individually by the EU), such as trade defence and enforcement. In line with a model of open strategic autonomy, strong emphasis is placed on bilateral and multilateral cooperation to advance a level playing field agenda, aiming *inter alia* at strengthening international rules on industrial subsidies. In this context, the EU advocates reform of the WTO in its three main functions (negotiation, monitoring and dispute settlement). Trade policy is also regarded as a tool to support the digital and green transitions.

When the WTO's dispute settlement mechanism is seized and an appeal takes place, the procedure will currently be left unfinished due to insufficient quorum to hear appeals (since December 2019). To tackle these cases, recent legislative changes will enable the EU to impose countermeasures in the wake of a favourable WTO panel report (the procedural phase before a possible appeal) if the appeal cannot proceed through another form. Moreover, the EU has created, with more than 20 other WTO members, an interim appeal arrangement, which would allow an appeal to proceed in a concrete case if the other WTO member-party to the dispute agrees.

FDI can be a powerful catalyst for competition and innovation, but in some cases may also pose security concerns or be a vehicle for anti-competitive behaviour. Technological and geopolitical developments have heightened security concerns in the past few years, making many recipient countries adopt or reform investment policies to safeguard their essential security interests (OECD, 2020c). In 2019, the EU adopted a framework for the screening of FDI from third countries on grounds of security and public order, in force since October 2020. The EU country where the investment takes place retains the final word on authorisation and possible associated conditions but must address requests for information from other Member States and the Commission and take account of their comments. This framework is welcome, given freedom of establishment and free movement of capital among EU economies, which heightens interdependence. Until the recent past, exchange of information on FDI between EU countries has been limited (European Court of Auditors, 2020). At the same time, it is essential to preserve legal certainty and openness to FDI, which can play a key role in avoiding rising concentration in certain markets associated to pandemic-induced insolvencies.

The Commission has recently put forward a draft Regulation to address distortions caused by foreign subsidies in the Single Market (European Commission, 2021c), building on a previous White Paper (European Commission, 2020b). In the case of foreign subsidies facilitating the concentration of undertakings active in the EU, an issue not specifically tackled by the above FDI screening, the proposed

Regulation envisages a compulsory ex-ante notification when certain thresholds are met, which gives rise to a review by the Commission. A concentration (i.e. an acquisition, merger or a joint venture) facilitated by foreign subsidies found to distort the internal market (without sufficient compensating positive impacts) would be subject to redressive measures or, as a last resort, prohibited. Distortions could stem, for instance, from preventing non-subsidised acquirers from accessing certain technologies (European Commission, 2020b), to the detriment of innovation-driven productive upgrading. Redressive measures could also be imposed in the case of below-thresholds concentrations, which the Commission could investigate on its own initiative.

Enhancing tools to enforce competition

Competition policy is key to promote efficient resource allocation, foster innovation and investment, and preserve the purchasing power of consumers. In the EU, the European Commission, with the national competition authorities, directly enforces EU competition rules, which are essential to deepen and preserve the integrity of the internal market and have brought to Europe huge benefits. Since the turn of the century, profit margins and concentration in most sectors of activity have increased less in Europe than in the US (Philippon, 2019). Vigorous competition enforcement in the internal market should therefore be ensured.

An immediate concern is to provide State aid to support the economy in the context of the pandemic and its aftermath while minimising risks of market distortions. The Commission adopted in March 2020, and then successively extended, a Temporary Framework to enable Member States to use the full flexibility foreseen under State aid rules, currently due to remain in force until end-2021. Approved aid measures have varied widely across EU countries, with Germany accounting for more than half of the total (Hermet and de Franclieu, 2020), which initially fuelled concerns that member states with more fiscal space would provide more generous support to their domestic companies. This would distort competition (Motta and Peitz, 2020) and exacerbate risks of economic divergence in the EU, since poorer countries have more limited budget resources.

Available data on aid disbursements until end-2020 tends to assuage those concerns, as more highly indebted countries (Spain, France, Italy and Greece) are the ones having granted more aid as a share of pre-crisis GDP (Mathieu Collin et al., 2021). By reducing cross-country asymmetries in fiscal space, the EU recovery plan also goes some way to reduce those risks. Nonetheless, countries with less fiscal space have tended to rely more on repayable support, such as loan guarantees (Mathieu Collin et al., 2021), which is a source of future vulnerabilities. Safeguards to avoid that aid generates distortions, such as focussing on firms that were solvent before the crisis, should continue to be carefully enforced. Once the recovery gathers sustained pace, the Temporary Framework for State aid should be terminated.

However, many viable firms will exit the crisis with heavy debt burdens, and may need equity support to stave off bankruptcy. Recapitalisation aid, already a strand of the Temporary Framework, may need to outlive it in some form, for instance by making it possible to transform some loans into equity. When providing State aid, public authorities should take advantage of private sector expertise, and exploit opportunities to co-invest with private investors (OECD, 2020d). Across-the-board measures for balance sheet repair, such as removing incentives to withdraw equity by reducing or eliminating corporate taxes on retained earnings for SMEs, may have the additional advantage of not raising concerns of competitive distortions.

The emergence in high-technology sectors of European firms that are major global players would be a desirable outcome of the pro-competitive industrial policies discussed in the previous section on innovation. In contrast, promoting the emergence of “European champions” through a laxer application of competition rules, especially as regards mergers, is fraught with pitfalls, as are traditional industrial policies aiming to create or support national champions. Identifying a “champion” on the basis of objective economic criteria is very hard, if not impossible, potentially opening the door for special interests to guide the choice of which companies to support (Heim and Midões, 2019). Protection of incumbents brings risks

of regulatory forbearance and capture, and could worsen levels of corruption (OECD, 2018b). Furthermore, promoting European champions would likely worsen regional disparities across Europe. Those firms would tend to come from large and prosperous member states, and, within them, from affluent regions, deriving profits at the expense of consumers in the rest of the Union (Jenny and Neven, 2019).

In any case, European competition policy has seldom prevented firms from achieving scale and greater efficiency through mergers. Most proposed consolidations have been accepted, sometimes actually giving rise to European champions. Less than 3% of all mergers notified to the Commission in 2010-2018 have been prohibited or the respective notification withdrawn (Jean *et al.*, 2019). This overwhelming majority of approvals also holds for notifications by large EU companies, though in these cases remedies are more often imposed (Helm and Midões, 2019).

In some areas, there is a case for strengthening, not weakening, competition enforcement. A case in point concerns the loosely called “killer acquisitions”, where large firms buy smaller rivals to pre-empt future competition. This pre-emption may take place by discontinuing at an early stage of development a rival’s innovative project, which in the future could potentially outperform some of the incumbent’s products, such as pharmaceuticals (Cunningham *et al.*, 2018; OECD, 2020e). In the digital field, innovation by the target firm is often not thwarted, but anti-competitive effects could stem from the target’s integration into the purchaser’s platform or ecosystem, which may increase barriers to entry, for instance by making it easier to retain users (Crémer *et al.*, 2019). These acquisitions often escape merger control by the Commission because of the modest turnover of the purchased start-ups, far below the turnover-based notification thresholds.

There are different possibilities to increase the likelihood that killer acquisitions are scrutinised by competition authorities, but they are not free from drawbacks. Given that incumbents sometimes pay large amounts to purchase promising start-ups, one route would be to supplement turnover thresholds with transaction value thresholds, as recently done in Austria and Germany, thus triggering merger control procedures more often. However, setting these thresholds is not easy: a high value risks missing numerous killer acquisitions (as argued by Cunningham *et al.*, 2018, in the case of the pharmaceutical industry), while a low value would generate too many cases for scrutiny. In addition, transaction values can be manipulated (Jean *et al.*, 2019). An alternative avenue would be to allow for ex-post examination of mergers, as in several OECD countries, including the United States (OECD, 2016). This would nonetheless create legal uncertainty, and there would be considerable practical problems in undoing a consummated merger or applying structural remedies, especially if some time has elapsed. Another possibility to capture transactions falling below national thresholds, already chosen by the Commission, could be the strengthened use of upward referrals to the Commission.

Digitalisation also poses challenges to competition policy, as it often favours market characteristics conducive to a structural lack of competition, or to threats thereof. Features like strong network and scale effects, consumer lock-in or lack of access to data, which are particularly prominent in digital markets, can lead to structural competition problems, which existing competition tools find it hard to tackle, as no mergers, anti-competitive agreements or abuses of dominant position are necessarily involved. The Commission has thus been exploring the need for a possible new competition tool, which would allow the imposition of behavioural or structural remedies to address these structural competition problems, including but not limited to the digital sector (European Commission, 2020c). Enforcement powers not triggered by mergers or firm conduct already exist in some jurisdictions, as in the case of the UK’s market investigations (OECD, 2015b) and also in Greece and Romania.

Ex-ante regulation of digital platforms can complement competition enforcement. In December 2020, the Commission proposed legislation (the Digital Markets Act, DMA) along these lines. The DMA combines together the Commission’s consultation on ex ante rules for large digital platforms and the work on a new competition tool. In the Commission’s view, there was a need for additional regulation in digital, where problems of contestability and fairness were perceived as more urgent and pressing from an internal

market perspective. The DMA aims to prevent that online platforms acting as gatekeepers engage in conducts towards end users and businesses that are unfair or limit contestability, and to ease the scaling up of smaller platforms. For instance, under the DMA proposal, firms using large platforms must be allowed to promote and sell their products elsewhere. Non-compliant gatekeepers face hefty fines and, in case of systematic infringements, also the prospect of additional remedies. Regulation along these lines will make digital markets more competitive and, more broadly, increase firms' incentives to invest in digital tools and activities.

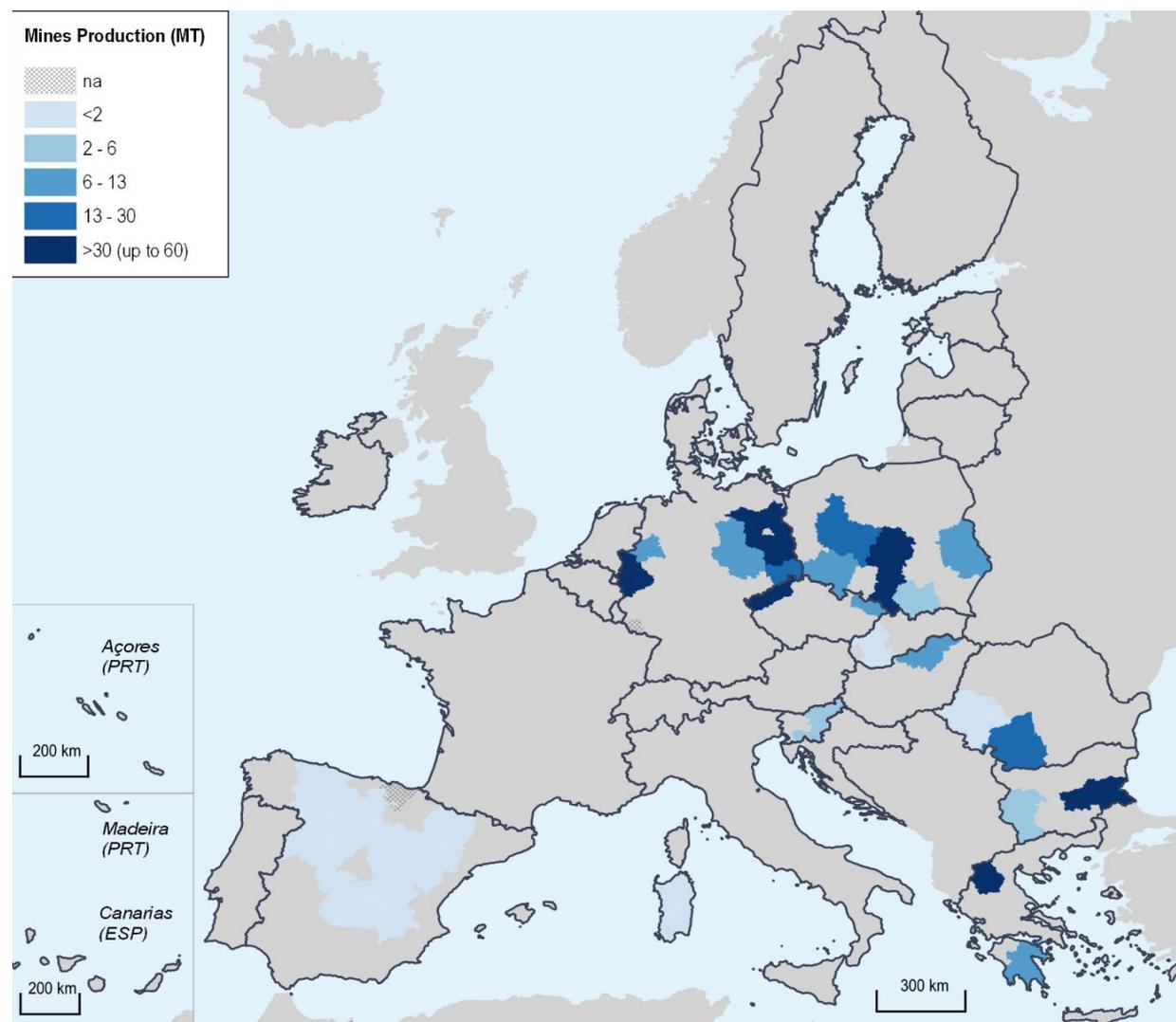
The Commission's recent draft Regulation on foreign subsidies is not limited to concentrations, discussed above, but rather aims to tackle distortions in the Single Market caused by those subsidies in any market situation. Accordingly, it is proposed that the Commission is entitled to open market investigations. A firm benefitting from a subsidy would be subject to redressive measures or could offer commitments if the subsidy is found to be distortive without sufficient compensating positive effects. These measures and commitments would include a range of structural or behavioural remedies (e.g. divestment of certain assets or prohibition of a specific market conduct, respectively). As for concentrations, an ex-ante notification obligation would also apply to bids in public procurements reaching certain thresholds. Avoiding that publicly supported firms gain undue advantages over competitors is important (OECD, 2012). At the same time, care should be taken to avoid using this framework as a protectionist tool that decreases competition in the internal market.

Climate change mitigation implies productive reconversion in some regions

Achieving carbon neutrality by 2050 will heighten industrial transition challenges, especially for regions relying heavily on high-carbon industries. At national or EU level, the net employment effects from higher carbon prices could be fairly limited (Chateau *et al.*, 2018), as jobs created in greener businesses, including in construction and services, are projected to offset job losses in mining and carbon-intensive industries (European Commission, 2019a). However, as the latter industries tend to be geographically concentrated (OECD, 2012), phasing them out will create a potential for mass lay-offs in some regions (Figure 14).

Figure 14. Coal mining in the EU is geographically concentrated

Annual production of coal mines, aggregated at NUTS-2 level (2015)



Source: Alves Dias, P., Kanellopoulos, K., Medarac, H., et al. (2018), EU coal regions: opportunities and challenges ahead, EUR 29292 EN, Publications Office of the European Union, Luxembourg, <http://dx.doi.org/10.2760/064809>.

Broader stakeholders' consensus on the need to phase out certain industries has proven to be associated with more resilient transition strategies (Campbell and Coenen, 2017). Moreover, long-term transition plans could smooth the management of stranded assets through early-stage policy intervention. Regional policies to move towards carbon neutrality should thus be grounded on detailed long-term transition plans, aligned with broader development strategies. Those plans require coordination across different levels of government and should involve social partners.

Regional policies promoting innovation and private sector involvement are key to a successful reallocation of capital towards carbon-neutral assets and infrastructure. Empirical evidence points to the positive impact of direct financial support for R&D, at both national and regional levels, on firm innovation outcomes (Howell, 2017; Busom et al., 2014; Westmore, 2013). Support to innovation can play a major role in upgrading the regional productive specialisation (Box 3).

Box 3. Productive upgrading in former coal mining regions: the case of Limburg

Limburg, a southern Dutch region bordering Belgium and Germany, was a major European coal mining centre. The closure of the coal mines in the early 1970s led to high unemployment and set in motion a long and eventually successful process of economic restructuring.

In the late 1970s Limburg had the highest unemployment rate in the Netherlands (OECD, 1980). Public support to the region made the government relocate some of its services there, and, more importantly, try to foster the development of new industries. Today's regional specialisation largely relies on the health care, trade and logistics, high-tech manufacturing and agriculture sectors. Limburg accounts for 6.5% of Dutch population and 5.7% of Dutch GDP (2018 data), and it ranks 6th in GDP per capita among the 12 Dutch TL2 regions, with the second highest growth since 2000.

Fostering innovation has long been a mainstay of Limburg's regional development policy. Since the 1990s, Limburg has supported knowledge transfer and collaboration between SMEs and research institutions, having pioneered in 1997 the use of innovation vouchers (OECD, 2019b). Building on its mining past, the region has also become a hub for new energy research. It is now home to one of the largest geothermal district heating systems using mine water in the world (Alves Dias et al., 2018).

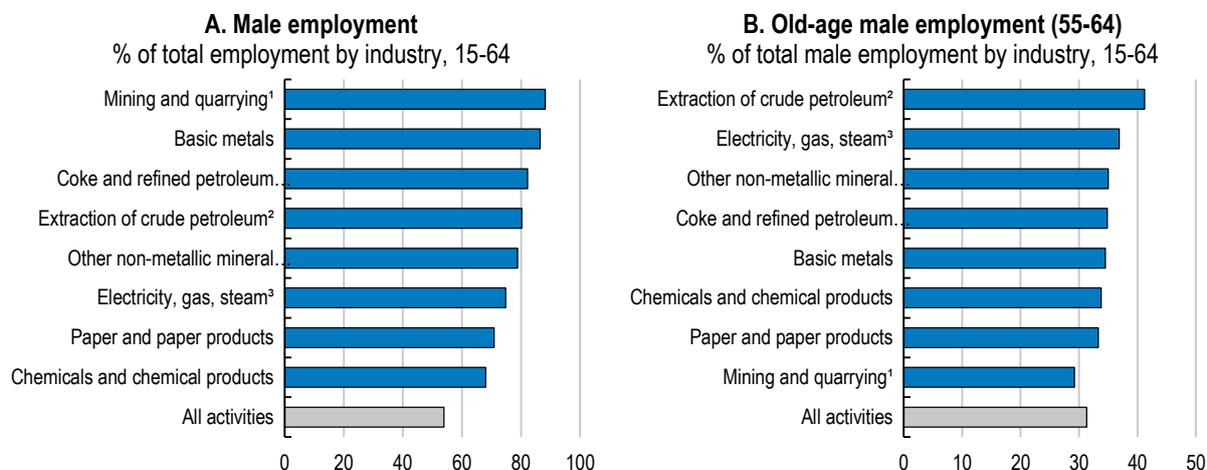
Besides long-standing cross-border cooperation with neighbouring Belgian and German regions, Limburg has also been an active participant in interregional projects with counterparts across Europe aiming at knowledge sharing and innovation. Some of these projects have focused on prominent economic sectors in Limburg, such as the food and medical technology industries.

Moving towards carbon neutrality will require significant labour reallocation across sectors (European Commission, 2019a) and affects the skill sets required in local labour markets. For the large majority of green jobs, empirical evidence points to the need for relatively limited top-ups of existing skills (Eurofound, 2014): workers in declining carbon-intensive industries already likely possess skills of some relevance for more modern industries, which should be properly identified and validated. However, these workers are often ill-prepared to identify alternative career opportunities, and hence will benefit from job search assistance and training well-aligned with the skill needs of regional employers (OECD, 2015c; OECD, 2015d; OECD, 2017c). At the same time, completely new job profiles related to new goods and services and new production methods or business models will emerge in some areas, often creating a need for significant upskilling or reskilling (European Commission, 2019a; Bowen and Hancké, 2019).

Some categories of displaced workers will require targeted policy support, especially in less diversified regions, where green job creation will be more difficult. In particular, old male workers are over-represented in carbon-intensive and extractive industries (Figure 15). These workers face serious re-employment challenges because of seniority-based wage systems, higher health insurance costs and, often, modest formal education and weak digital skills.

Different policy tools can be used to support elderly displaced workers. Age-specific wage subsidies or labour tax reductions, in place in several countries, help reduce labour costs. Additionally, training schemes should entail strong on-the-job components, as success rates of stand-alone retraining programmes have been found to be lower (Sartor, 2018). Targeted awareness-raising campaigns could complement these measures by helping remove negative perceptions around ageing workers (Cedefop, 2015). Some close-to-retirement and less-educated displaced workers may, in addition, require specific social safety nets, including bridges to early retirement or other social assistance payments (World Bank, 2018).

Figure 15. Men are over-represented in brown industries, especially at older ages
2019, EU27



Note: 1. Excluding the extraction of crude petroleum and natural gas. 2. Extraction of crude petroleum and natural gas. 3. Electricity, gas, steam and air conditioning supply.

Source: Eurostat (2021), "Employment by sex, age and detailed economic activity", Eurostat Database.

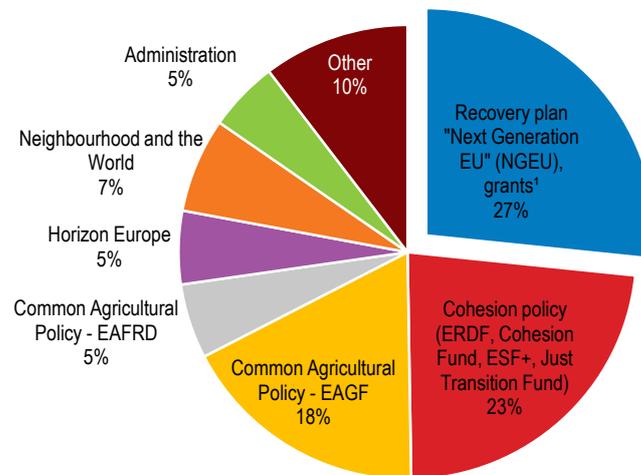
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Cohesion policy is a helpful instrument to address these policy challenges. In particular, the new Just Transition Fund (endowed with EUR 17.5 billion, 10 of which from the EU recovery plan) is a specific tool to mitigate the socio-economic consequences of pursuing carbon neutrality in those regions most affected. Countries are required to prepare plans for eligible regions setting out a long-term transition strategy, its governance and the envisaged priorities for funding, which may comprise reskilling, environmental rehabilitation and investments to support new activities. The emphasis on dedicated long-term regional plans is welcome.

Using the EU budget more efficiently to support regional convergence

The EU budget is a key policy tool to support regional growth and convergence. Its two largest spending items, cohesion policy and the Common Agricultural Policy (CAP), share explicit concerns of balanced territorial development. In the current and coming years, the 2021-27 EU budget will be complemented by grants from Next Generation EU, whose objectives and overall amounts are broadly similar to those of cohesion policy (Figure 16).

Figure 16. Policies with a territorial dimension account for most of the EU budget
EU 2021-27 budget, 2018 prices, EU27, per cent



Note: The acronyms used in the chart stand for: EAFRD = European Agricultural Fund for Rural Development, EAGF = European Agricultural Guarantee Fund, ERDF = European Regional Development Fund, ESF+ = European Social Fund+. 1. The "Next Generation EU" (NGEU) grants cover fund allocations to Horizon Europe, InvestEU fund, REACT EU, Recovery and Resilience Facility, rescEU, EAFRD and the Just Transition Fund and exclude loan allocations under NGEU.

Source: European Commission: MULTIANNUAL FINANCIAL FRAMEWORK 2021-2027.

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Policies for balanced territorial development generally have a redistributive dimension, concentrating spending on the least favoured countries and regions. This is the case with cohesion policy, where three quarters of resources are allocated to regions with a GDP per capita below 75% of the EU average (Box 4), though an even stronger concentration would be welcome, as argued in the 2018 OECD Economic Survey of the EU. Strong redistribution is also present in the allocation of NGEU grants, where unemployment rates and the impact of the pandemic play an important role alongside GDP per capita. In contrast, the allocation of CAP spending still relies to a large extent on historical entitlements, displaying high inertia and being much less redistributive across countries. Most spending still accrues as payments to producers in relatively prosperous areas, where, as discussed below, those payments are often no longer needed. Gradually reducing these outlays while preserving CAP support to increase productivity in the poorest rural regions would free budget resources to other areas, such as innovation.

While concentrating spending on the least prosperous areas is welcome and necessary, policies to reduce territorial imbalances should further increase efforts to go beyond redistribution and actively promote structural transformation. This implies avoiding to support inefficient firms or activities, which would risk entrenching structural divergence. For instance, if favouring local incumbent firms through the award of grants or procurement contracts, cohesion policy might end up hampering productivity-enhancing innovation and resource reallocation. Likewise, CAP subsidies to certain crops could hamper switching to others with higher productivity. This section discusses how to make cohesion policy and the CAP more efficient in supporting regional strategies for productive upgrading. The discussion on cohesion policy also largely applies to the EU recovery plan, which in some cases directly tops up cohesion policy funding.

Box 4. EU budget tools for a balanced territorial development and their allocation

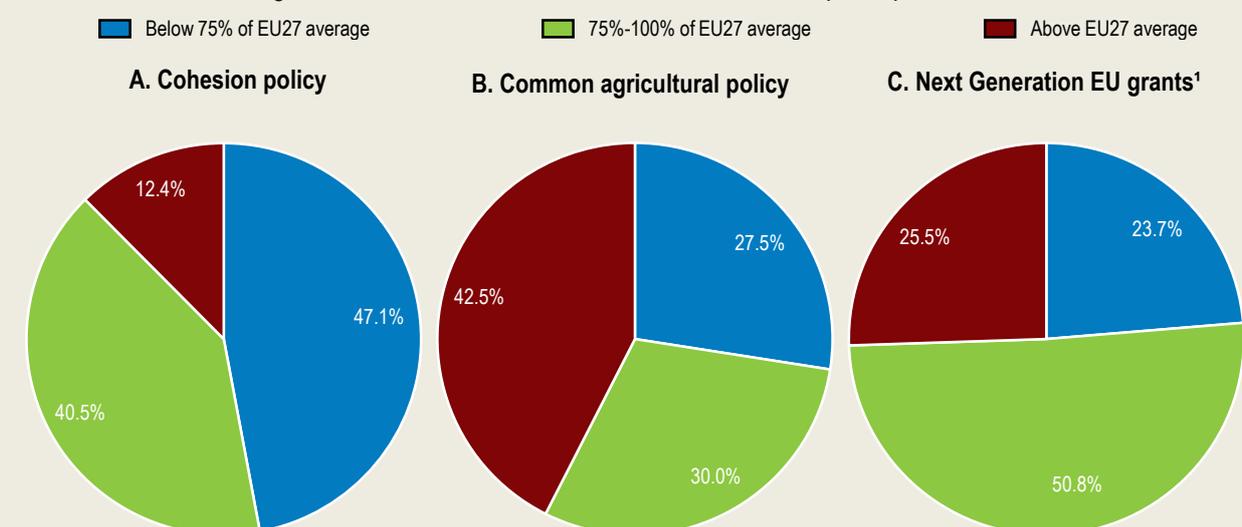
Cohesion policy is the EU's main investment policy, aiming at reducing regional disparities through support to structural transformation and sustainable development in the least favoured regions. Accounting for about 30% of the EU budget, cohesion policy finances a wide range of investments, including transport, energy and digital infrastructure, innovation, carbon abatement, SME competitiveness, education and social inclusion. The relative prosperity of countries and regions, mostly measured by GDP per capita, is the main criterion for fund allocation, giving this policy a strong redistributive dimension (Figure 17).

The objectives of the Common Agricultural Policy (CAP) include ensuring food security and a fair standard of living for farmers, bolstering environmental care and climate action and strengthening the socio-economic fabric of rural areas (European Commission, 2018). The CAP has two pillars. Pillar 1 (about three quarters of total funding) finances direct payments to farmers and, to a much smaller extent, market intervention measures (e.g. private storage aid) under the common market organisation. Pillar 2 funds rural development plans, which can support multiple policy areas, such as innovation, competitiveness of agriculture, environmental protection, poverty reduction and economic development of rural areas. Criteria for funds allocation are complex and still reflect legacy effects, such as the fact that some of the current payments originated as compensation for reductions in price support for certain productions (support which tended to benefit prosperous countries the most). As a result, countries with above-average GDP per capita receive a very substantial share of funding (Figure 17), even though the poorest member states generally have higher allocations as a share of GDP.

Next Generation EU (NGEU) is a stimulus package to support the post-pandemic recovery through investment and reforms. Compared to cohesion policy, the allocation criteria for NGEU grants give a larger weight to relative unemployment rates and to the short-run impact of the pandemic on GDP, which tends to benefit Southern EU countries like Italy and Spain (Figure 17).

Figure 17. EU budget tools differ in their degree of redistribution

Share of 2021-27 funding allocated to countries with different levels of GDP per capita



Note: National levels of prosperity are based on 2018 GDP per capita (in 2015 constant USD PPPs) relative to the EU average. 1. The Next Generation EU grants includes Recovery and Resilience Facility, REACT-EU for 2021 and Just Transition Fund allocations.

Source: OECD (2020), OECD calculations based on data from the OECD Regional Statistics (database).

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Towards a more efficient cohesion policy

The empirical evidence on the impact of cohesion policy on GDP growth is only mildly encouraging, suggesting that there is ample room to increase policy effectiveness. Most econometric studies have found a positive, albeit small, impact, but some analyses have pointed to insignificant or even negative impacts (Pienkowski and Berkowitz, 2015). Besides issues like different samples, data sources or estimation methodologies, contradictory empirical findings also stem from the high heterogeneity of cohesion policy, both in terms of types of interventions (e.g. support for infrastructure, training or business investment) and in the context of implementation (Bachtrogler *et al.*, 2020). This context refers to the territorial characteristics of recipient regions, which differ in their level of prosperity, sectoral structure, human capital or institutional quality.

In recent years, institutional quality has been increasingly acknowledged as a potent determinant of the effectiveness of cohesion policy. In Europe, institutional dimensions such as the rule of law, the degree of corruption and government quality display important variation not only between countries but also across regions of the same country (Charron *et al.*, 2019). Several studies have highlighted that government quality and administrative capacity greatly matter for the efficient use of EU cohesion funding, either in specific areas of intervention, such as transport infrastructure (Crescenzi *et al.*, 2016) or across the board (OECD, 2019d; Darvas *et al.*, 2019). Indeed, above a certain threshold of cohesion funds received per capita, improving the quality of government is a far more powerful lever for development than additional public investment (Rodriguez-Pose and Garcilazo, 2015). This section proposes reforms in several dimensions of cohesion policy implementation for which administrative capacity is particularly important.

Improving funds allocation through better project selection and public procurement

Though comprehensive data on project selection procedures is not available, some evidence suggests that selection could be made more competitive. Projects are often selected on a first-come first-served basis and more consideration could be given to indicators of their ultimate contribution to regional development objectives (European Court of Auditors, 2018a) – for instance, indicators of employability of trainees, rather than hours of training. Member States, which have full responsibility for project selection, should move towards selection procedures that involve a results-oriented comparison between applications (European Court of Auditors, 2018a). Evidence about programmes supporting innovation suggests that only subsidies awarded through a competitive procedure generate positive effects (Crescenzi *et al.*, 2018).

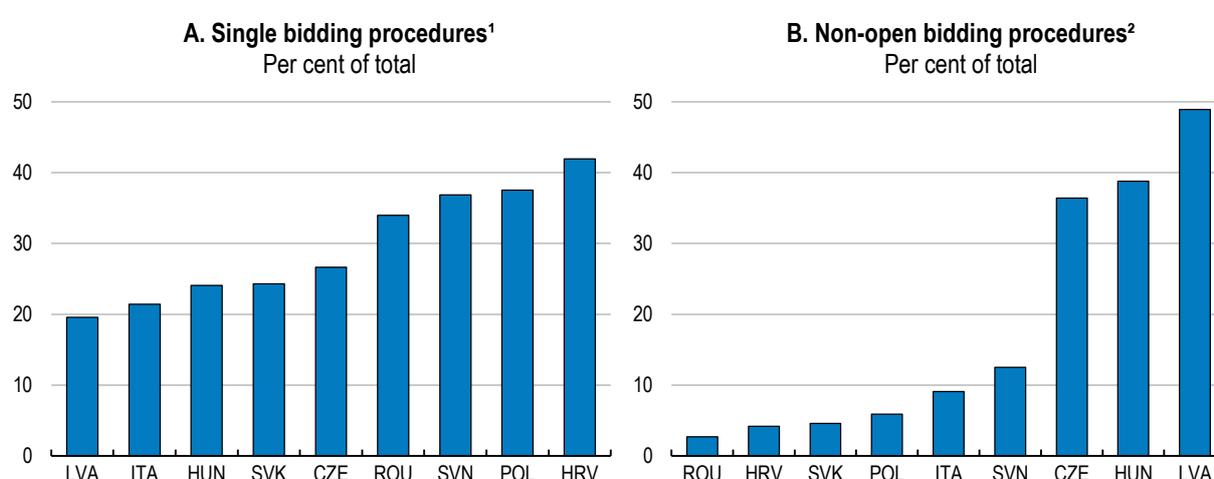
Better project selection requires stronger capacity of the agencies in charge of managing cohesion policy programmes. Risk-aversion, inducing these agencies to manage funds in a way that mirrors past experience, or a greater emphasis on the timely absorption of funds than on the quality of their allocation, may be an obstacle to the selection of innovative projects (OECD, 2020f). Instead, in line with cohesion policy regulations, agencies need to develop a more strategic approach to programme implementation, setting investment priorities well attuned to regional developments needs (OECD, 2014; OECD, 2020f) and selecting projects accordingly. Additionally, engaging with potential beneficiaries, helping them address capacity gaps and ensuring that project calls match their ability to respond could enlarge the pool of applicants. Project proposals often come from larger and more productive firms (Benkovskis *et al.*, 2018), which tend to be few in poorer regions and thus may face limited competition in accessing cohesion policy funds.

Across the EU, public procurement is, in practice, often marred by low competition and transparency (Fazekas, 2017). This can weigh heavily on the efficiency of cohesion policy, since close to half of its funding is spent through public procurement (Fazekas, 2019). Available evidence suggests a significant prevalence of single bidding in projects co-funded by cohesion policy: in a sample of 10 countries including most of the largest recipients of cohesion funding (Fazekas, 2019), the share of contracts with only one bidder was often high (Figure 18, Panel A). In addition, non-open tendering procedures (e.g. negotiated

procedures without a call for bids) are often resorted to (Figure 18, Panel B), which may be justified in specific cases (typically few) but used to restrict competition in others. A broadly similar picture, with no consistent signs of improvement over time, stems from indicators referring to public procurement as a whole, regardless of whether cohesion funds are involved (European Commission, 2019c).

Unsurprisingly, low competition is often associated to contracts being awarded to suppliers of the same country, and even region, of the buyer. Though segmentation is strongest along national borders, regional border effects within countries are also sizeable (Herz and Varela-Irimia, 2017). This may stem from the local specificities of some projects, but could also reflect routine-based, risk-averse behaviour by contracting authorities or, worse, a wish to favour local suppliers, which is often regarded as a detrimental form of industrial policy (OECD, 2018b). In some cases, uncompetitive public procurement is also associated to fraud and corruption (European Court of Auditors, 2015).

Figure 18. Public procurement in cohesion policy could be made more competitive and transparent



Note: 1. Contracts awarded following public tender procedures with only one submitted bid. 2. Non-open bidding includes restricted, negotiated and competitive procedures, where the Contracting Authority does not have the obligation to issue the public tender documentation to all who express an interest.

Source: Fazekas, M. (2019), "Single bidding and non-competitive tendering procedures in EU co-funded projects", Report for the European Commission, Brussels.

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Increased centralisation of public procurement, at national, regional or sectoral levels, is a promising avenue to tackle the above problems. Through more extensive use of central purchasing bodies, as well as of tools like framework agreements for homogenous goods, countries and regions can make procurement more competitive and achieve significant cost savings (OECD, 2015e; Fazekas, 2017). In Italy, before the centralisation reform implemented in the wake of the euro area crisis, there was significant variation in the price of identical goods and services; the reform has reduced this variation while lowering average prices. Joint procurement across smaller purchasers, such as municipalities, should also be pursued further. Furthermore, moving beyond an over-reliance on price as the key award criterion in tenders, and giving greater weight to quality and innovation, is another strand of reform to make public procurement more competitive and enhance its contribution to regional development. Procurement's demand-side stimulus to innovation and quality upgrading by suppliers, discussed above, is also relevant for the effectiveness of cohesion policy.

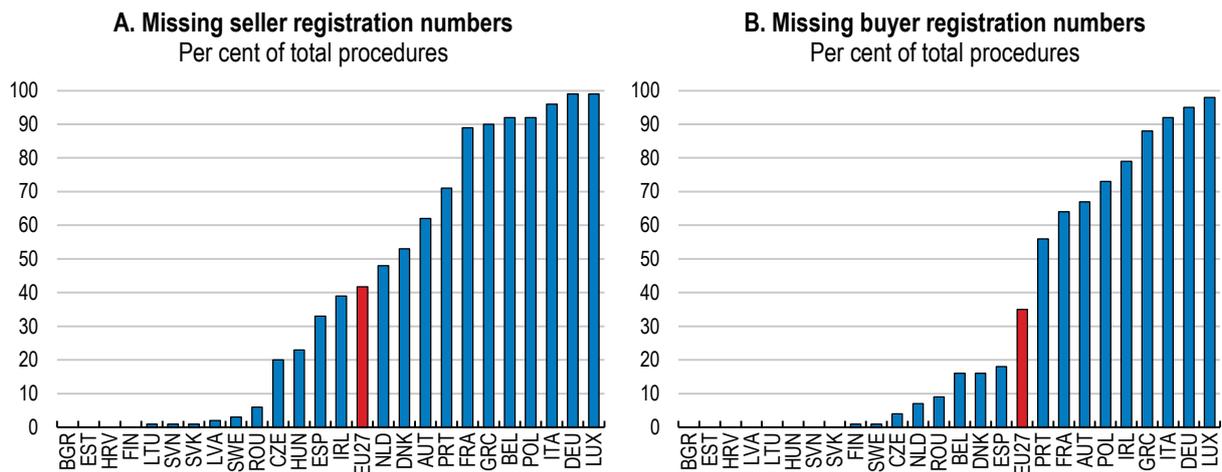
More competitive and transparent procurement also requires greater professionalisation of procurement officials. There continues to be a lack of administrative capacity in public procurement (OECD, 2019e), likely to be more acute at sub-national level, which hampers efficiency and can be a source of inadvertent non-compliance with procurement rules. This calls for regular training, rigorous integrity standards, and

attractive career prospects for procurement officials (OECD, 2015e). In this vein, the Commission adopted a recommendation on the professionalisation of public procurement (2017) and designed ProcurCompEU, a competency framework for public procurement professionals (2020). Achieving a common understanding of often complex public procurement rules also calls for stronger capacity in the area of non-procurement officials, such as those working in cohesion policy management, control and auditing.

Better definition and enforcement of public procurement data requirements would also enhance competition, transparency and compliance with procurement rules, *inter alia* by maximising the gains from e-procurement. Despite advances in the latter, such as mandatory electronic tender submission from October 2018, there remain important gaps in data entry and publication standards. For instance, in the Tenders Electronic Daily (TED) database, where all procurement notices above certain thresholds need to be published, seemingly straightforward information such as the registration numbers of buyers and sellers is often missing (Figure 19). National procurement databases also present important gaps and, moreover, tend not to be comparable (Fazekas, 2017, 2019). Comprehensive and high-quality data is also essential for the effectiveness of fraud alert data mining tools like Arachne (European Court of Auditors, 2015). In 2021-27, cohesion policy regulations require a robust infrastructure of data collection on public procurement, which will help enhance competition and transparency.

Figure 19. Data in procurement procedures is often incomplete

2019



Note: Proportion of procedures where the registration number of a seller (Panel A), or a buyer (Panel B), was not included.
 Source: European Commission (2020), Single Market Scoreboard: Performance in Public Procurement, https://ec.europa.eu/internal_market/scoreboard/performance_per_policy_area/public_procurement/index_en.htm.

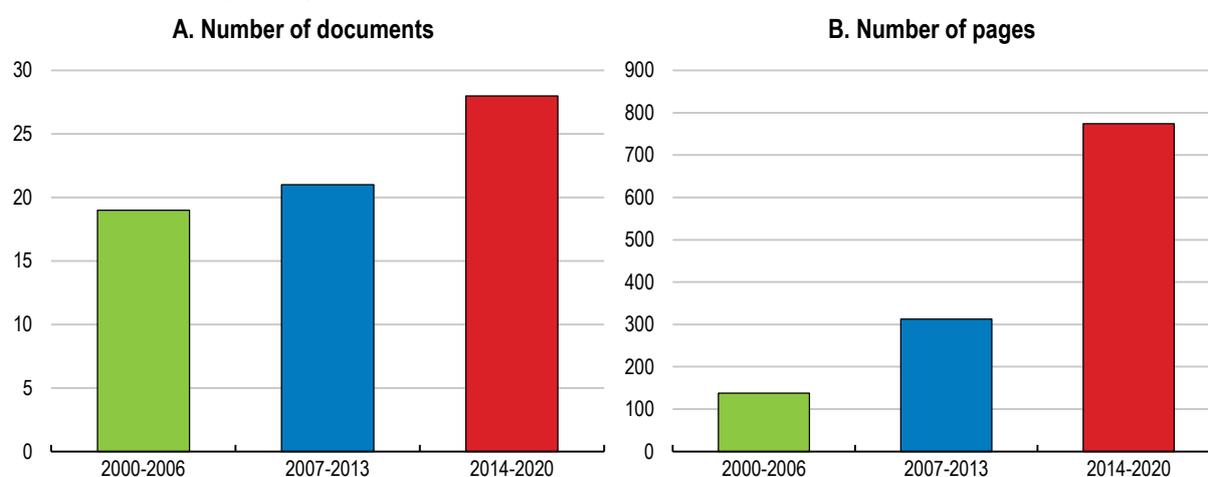
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Reducing administrative burdens

Simplification of cohesion policy is essential to reduce administrative burdens, which SMEs and local governments may find it hardest to cope with. Those burdens often deter project proponents from applying to funding. For 2021-27, the legislative framework attempts to reverse a trend of growing complexity (Figure 20). There is some progress towards a single rulebook for different funds, though fund-specific regulations still exist. Less secondary legislation, streamlined reporting, less reporting obligations, fewer cases where the same project can be audited by different authorities and lighter audit and verification requirements for projects considered to be low risk have also been set up.

Figure 20. Cohesion policy has become more complex over time

Documents concerning EU regulations and Commission's decisions



Note: As of April 2018.

Source: European Court of Auditors (2018), Simplification in post-2020 delivery of Cohesion Policy, Briefing Paper, May 2018, Brussels.

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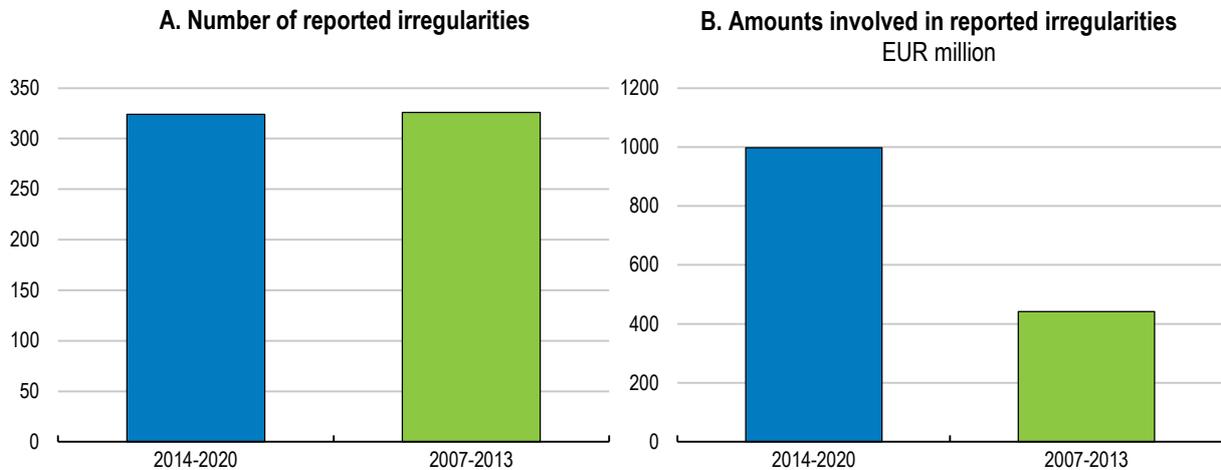
Simplified cost options, whereby grants to beneficiaries take the form of unit costs, lump sums or flat rates, rather than reimbursement of invoices, are highly effective in reducing administrative burdens (European Court of Auditors, 2018b). They may also alleviate problems of fraud and corruption as it would not be possible anymore to exaggerate invoiced costs. In 2014-2020, use of simplified cost options has been still modest, covering about one-third of programme budgets of the European Social Fund, but only a residual fraction in the case of other funds. Furthermore, take-up has been higher in more developed regions (Brignani and Santin, 2018). Cohesion policy legislation for 2021-27 encourage further the use of simplified cost options and make them compulsory for a larger range of small projects, which is welcome. Countries should increase take-up of this form of support, which requires making the necessary administrative preparations (e.g. defining calculation methods). At the same time, it is important to further increase legal certainty in terms of the compatibility of simplified cost options with public procurement or State aid rules.

Curbing fraud and corruption

Within the EU budget, cohesion policy has a high incidence of fraud. Between 2013 and 2017, this policy accounted for 72% of the amounts involved in irregularities reported as fraudulent in all EU policy areas, which is much higher than its one-third share in the EU budget (European Court of Auditors, 2019). Taking a similar period of time since the start of each programming period, the amounts involved in irregularities reported as fraudulent have increased in 2014-2020 relative to 2007-2013 (Figure 21), which does not necessarily imply greater incidence of fraud (detection may have improved), but shows that the problem remains persistent.

Figure 21. Amounts involved in irregularities reported as fraudulent have increased

By programming period, Cohesion Policy programmes



Note: For comparability, data for each programming period considers a similar period of time since the respective start.

Source: European Commission (2019). "Statistical evaluation of irregularities reported for 2019: own resources, agriculture, cohesion and fisheries policies, pre-accession and direct expenditure", Part 2/3, Accompanying the document Reports from the Commission to the European Parliament and the Council, 31th Annual Report on the Protection of the European Union's financial interests – Fight against fraud – 2019.

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Despite monitoring and controls at EU and national levels, EU cohesion policy funds may end up being more vulnerable to corruption and fraud than national monies, *inter alia* because of a weaker link between domestic civil society, taxation and policy performance (Fazekas and Tóth, 2016). Besides other economic and social costs, corruption and fraud involving cohesion funding may hamper resource reallocation by entrenching the market power of politically-connected incumbents. Indeed, corruption and fraud could be one of the reasons why the same firms tend to successively benefit from cohesion funding (Mungiu-Pippidi, 2020).

Fighting fraud should be done at multiple levels. Respect for the rule of law is an essential precondition, which calls for enforcing the new possibility of suspending payments from the EU budget or adopting other appropriate financial measures in case of relevant rule of law breaches (as discussed in Chapter 1 of the 2021 OECD Economic Survey of the EU). In more operational terms, preventive and detective actions, such as risk-based control activities, should be enhanced to deter fraud before it occurs and avoid a "pay and chase" model (OECD, 2019f). Systematic data collection and analysis is essential for those actions. In 2013, the Commission made available to countries a data-driven risk-scoring tool, Arachne, to identify cohesion policy projects at risk of fraud. This potentially powerful tool requires that national authorities input data on fraudulent economic operators. However, Arachne still has limited or no use in several Member States (European Court of Auditors, 2019; Bonnemains et al., 2018). Reasons invoked by countries for lack of use include data incompleteness and inaccuracy, a high number of false positives and legislative barriers, in particular compliance with national data protection laws (Bonnemains et al., 2018). Greater use should be made of this tool, which requires a coordinated effort by countries towards prompt and complete data input. To encourage its use, the Commission also plans to improve it further.

Reforming the Common Agricultural Policy to enhance rural development

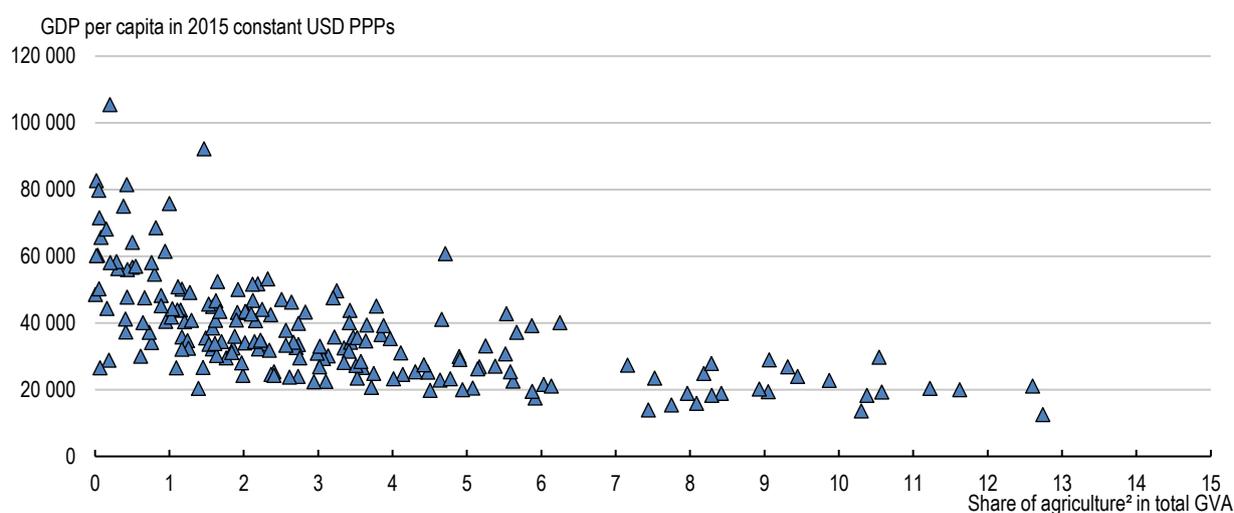
While the future CAP will be strongly framed within the objectives of the European Green Deal and the ensuing Farm to Fork Strategy for a sustainable food system, support to farmers through the CAP is currently delivered through different programmes under two pillars. Pillar 1 is comprised of direct payments to farmers and a variety of market intervention measures. Most direct payments are decoupled from the level of production, i.e., support is provided on a per hectare basis and not by volume of production. In

2014-20, Member States have also been able to allocate up to 13% of their direct payments envelope to commodity-specific payments (OECD, 2020g). Pillar 1 also contains the framework for market intervention measures such as private storage aid or public purchases. Pillar 2 finances rural development policy, including investments in agriculture and forestry, improvements in living conditions in rural areas, and measures for knowledge transfer and innovation. It also funds payments per hectare or cattle unit to pursue environmental goals such as soil conservation (agri-environmental payments) or to support farming in areas with natural constraints (e.g. mountains), as well as a variety of other measures with a smaller budgetary impact (e.g. aid to young farmers and LEADER/CLLD interventions, discussed below).

Given that lagging regions tend to rely more on agriculture (Figure 22), CAP support directed towards effective investment and productivity gains can make an important contribution to regional convergence and structural transformation. This is envisaged by the objectives for the future CAP, which include support to generational renewal and to jobs and growth in rural areas. Some CAP parameters have been defined at the outset of the 2021-27 EU long-term budget and are hard or impossible to change afterwards, but others will be able to be adjusted during the seven-year period, creating opportunities for reform. For instance, within certain limits, member states can transfer resources between both pillars, decide the extent of production-based payments or modulate uncoupled payments according to the size of the farms. National degrees of freedom under pillar 1 will increase considerably from 2023 on, especially as regards the use of direct payments to provide stronger incentives for better environmental outcomes, an issue further discussed in the 2021 OECD Economic Survey of the EU. While awaiting the finalisation of new CAP regulations and national strategic plans, transitional rules will apply in 2021-22, essentially prolonging the 2014-20 CAP.

Figure 22. Agricultural regions are often lagging

TL-2 regions¹, 2017



Note: 1. The chart is based on a sample of 192 TL2 regions from 25 EU countries. Territorial Level 2 (TL2) refer to large regions, as defined by the OECD classification of geographic units. This category corresponds to Eurostat's NUTS 2 classification, with the exception of Belgium and Germany where the NUTS 1 level corresponds to the OECD TL2. For TL2 regions in France GVA data from 2016 have been used for 2017. 2. Agriculture refers to section A of the ISIC rev. 4.

Source: OECD (2020), OECD calculations based on data from the OECD Regional Statistics (database).

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Making support to producers less distortive and more productivity-enhancing

Production-based payments are a highly inefficient form of support, as they distort production choices and only partially contribute to increase farm income (OECD, 2003). By reducing farmers' incentives to switch to higher value added crops, these payments do not promote, and may even hamper, productivity gains (World Bank, 2017; European Commission, 2018). Furthermore, this form of support can affect a level playing field in the EU and, as discussed in the 2021 OECD Economic Survey of the EU, also tends to be more harmful from an environmental viewpoint. While the possibility for Member States to provide support coupled to the production of specific commodities has been retained in the 2021-27 CAP, though within a strict budgetary and regulatory framework, it is recommended that countries phase out these payments.

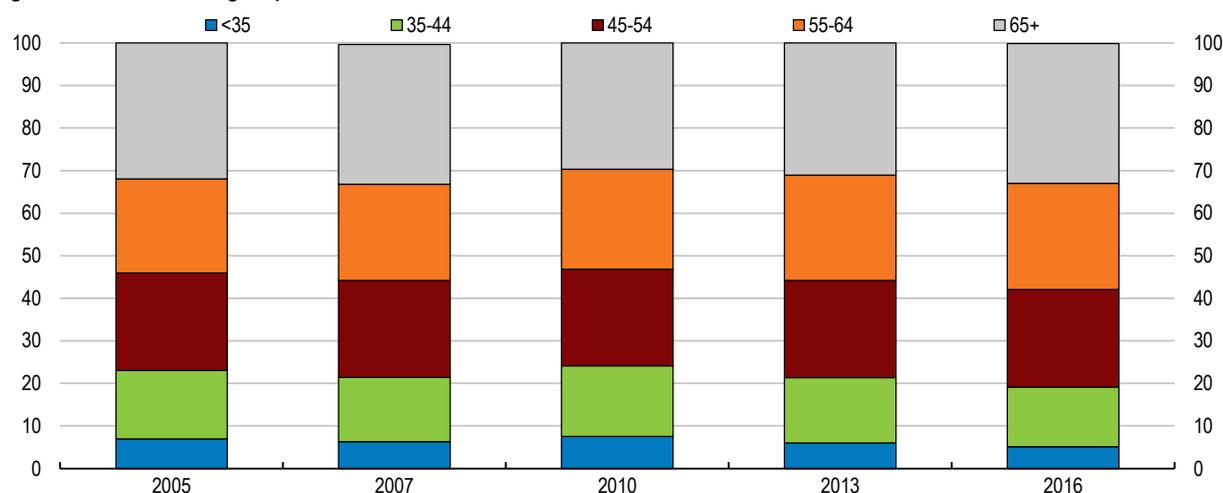
In some circumstances, decoupled payments can play a role in supporting agricultural productivity growth, reducing rural poverty and contributing to public goods such as landscape preservation. Even though they are not targeted to productivity and innovation, these payments increase and help stabilise farmers' income in poor rural areas, enabling farmers to carry out productivity-enhancing investments (World Bank, 2017). By making farming viable in those areas, this income support may prevent land abandonment. In general, however, decoupled payments tend to have a neutral impact on the productivity of crop farms, although a positive impact has often been found for livestock farms (DeBoe, 2020). In addition, the overall contribution of decoupled payments to environmental objectives has generally been very modest (see Chapter 1 of the 2021 OECD Economic Survey of the EU). The 2021-27 CAP aims at a stronger link between direct payments to farmers and improved environmental outcomes.

Furthermore, decoupled payments are often poorly targeted from a policy perspective, and can have adverse distributional impacts. In prosperous regions they are often no longer needed. Furthermore, because support is mostly defined on a per hectare basis, the bulk of these payments accrue to large farms – approximately 80% of CAP direct payments go to only 20% of EU farmers (World Bank, 2017). Modalities envisaged so far to address this problem, such as higher payments to the first hectares or degressivity above certain thresholds, have witnessed limited take-up by member states (OECD, 2020g). The recent political agreement on the 2021-27 CAP requires member states to redirect at least 10% of direct payments in favour of smaller farms. Countries should take more vigorous steps to cap support to large farms, and could consider means-testing support to better achieve income support objectives.

In addition, decoupled payments are not targeted to innovation, and may actually undermine it, as they hamper generational renewal in agriculture. These payments lead to higher land prices, with capitalisation rates sometimes estimated at more than 70% (World Bank, 2017). High land prices are a major barrier to entry by young farmers (European Court of Auditors, 2017), impeding generational renewal (Figure 23). Though the 2014-20 CAP includes measures to support young farmers, such as setting up support (Pillar 2) or a top-up direct payment (Pillar 1), they are unlikely to outweigh the impact of decoupled payments on land prices. The political agreement on the 2021-27 CAP envisages an increased level of support to young farmers (a new mandatory minimum level of 3% of Member States' budgets for CAP income support).

Figure 23. Generational renewal in agriculture remains insufficient

Age of the farm manager, per cent, EU27



Note: Data for 2005 exclude Croatia.

Source: Eurostat Database (2020) - Farm Structure Survey.

StatLink  <https://doi.org/10.1787/888934278769>*Exploring synergies between available tools for rural development*

There is a clear case for coordination between rural development and cohesion policies. Many lagging regions still have a large agricultural sector, making them eligible for sizeable support from both the rural development pillar of the CAP and from Cohesion Policy. Exploiting complementarities can lead to efficiency gains: for instance, investments in agricultural equipment or farm management can yield higher returns if accompanied by adequate transport or telecommunications infrastructure, which can be co-financed by Cohesion Policy. The possibility of increased synergies with Cohesion Policy also extends to administrative simplification and efforts to curb fraud. For instance, there is scope for greater use of simplified cost options (European Court of Auditors, 2018c) and risk-scoring tools for fraud prevention (OECD, 2019f) in rural development projects.

However, there remains much scope for better exploiting synergies between Pillar 2 of the CAP and Cohesion Policy (World Bank, 2017; European Commission, 2018; Calegari et al., 2020). Different sets of rules at EU level and different managing agencies and responsible political authorities at national or regional levels have often led to little coordination between rural development programmes and cohesion policy programmes (Kah et al., 2020). In 2014-20, building on the existing LEADER approach to rural development, a new instrument – Community-led Local Development (CLLD) – made it possible to combine cohesion and rural development funding in support of local development strategies, but this possibility has had relatively modest take-up and administrative procedures for each funding source remained different.

In 2021-27, there is increased potential for better policy coordination. Cohesion policy objectives give further prominence to the involvement of local stakeholders in development strategies for rural, urban and coastal areas, and in a CLLD combining multiple funds it will be possible to nominate a “lead” fund and apply only its rules. Taking advantage of these new possibilities is essential for greater policy effectiveness in rural areas. Areas for integrated investment strategies include support for innovation by agricultural SMEs, better digital connectivity of rural areas and the development of tourism.

Table 1. Recommendations to enhance regional convergence in the EU

FINDINGS (main in bold)	RECOMMENDATIONS (key in bold)
Upgrading the productive specialisation of regions	
Spending on research and development (R&D) in the EU remains far below the 3% of GDP target, and national innovation strategies are insufficiently coordinated.	Promote cross-country collaboration in R&D and in innovative industrial projects.
Poorer regions tend to have very low R&D investment, which hampers innovation and its diffusion.	Devote more cohesion funds in poorer regions to R&D projects.
There is scope to expand productivity spillovers from large cities to surrounding territories. In addition, second-tier cities have often failed to generate substantial agglomeration economies.	Make more regions benefit from agglomeration economies, through reduced travel time to large cities, better ability to telework and closer integration of second-tier cities with surrounding territories.
Competition policy has kept concentration and market power in check. However, it faces new challenges from digitalisation, subsidies from non-EU governments and “killer acquisitions” (firms buying smaller rivals to pre-empt future competition).	Adjust competition rules and enforcement to new challenges: <ul style="list-style-type: none"> • closely review and prevent “killer acquisitions” • develop new instruments to address distortive foreign subsidies • increase competition in digital markets <p>Avoid a laxer application of merger control rules as a way to allow European firms to gain scale.</p>
In many EU countries, the rigidity in housing supply hampers the growth of cities and the creation of high-productivity jobs.	To boost housing construction in cities, make land use regulation less restrictive, using national and sub-national policy levers.
Some regions still rely heavily on carbon-intensive sectors, which need to undergo closure or restructuring for the EU to achieve carbon neutrality by 2050.	Prepare and implement long-term transition plans for those regions, with job search assistance, training and adequate social safety nets for displaced workers.
Public procurement can stimulate innovation by creating markets for new products and services. Procurement fragmentation along national borders hampers that stimulus.	Public procurers should be <i>de facto</i> more open to bidders from other countries. Make greater use of cross-country joint procurement for new products and services.
Making EU budget support to regional productive upgrading more efficient	
<i>Cohesion Policy</i>	
Half of cohesion funding is spent through public procurement, but tendering procedures are often not competitive enough, which could hinder the selection of the most efficient or innovative providers.	Make public procurement more competitive by increasing the centralization of procurement and the professionalization of officials. Ensure compliance with transparency requirements in procurement procedures.
Projects are often selected on a first-come first-served basis and more consideration could be given to how they contribute to achieving regional growth objectives.	Further adopt competitive project selection procedures, with an emphasis on projects’ contribution to regional growth objectives. To enlarge the pool of applicants, adjust project calls to the ability to respond of potential beneficiaries, and help them address capacity gaps.
Within the EU budget, cohesion policy has a high incidence of fraud. Europe-wide risk-scoring tools, which help identify high-risk projects, have still limited use.	Step up prevention and detection of fraud and corruption involving cohesion funds, notably through the greater use and updating of common risk-scoring tools.
Administrative burdens have tended to increase, wasting resources and sometimes deterring project proponents from applying to funding.	To reduce administrative burdens, increasingly provide funding through simpler alternatives to the reimbursement of invoices (e.g. flat rates).
Interregional cooperation tends to enhance the benefits from cohesion policy and favours the implementation of regional development strategies.	Further engage in interregional cooperation and joint projects in cohesion and innovation policies, especially across national borders and involving regions of different levels of development.
<i>Common Agricultural Policy (CAP)</i>	
Rural regions are often eligible for sizeable support from both rural development policy and cohesion policy, but their interventions are poorly coordinated.	Improve coordination between rural development policy and cohesion policy by implementing integrated strategies funded by both.
Direct payments to farmers often fail to support productivity growth and are inefficient in supporting income. Payments coupled to certain products distort production choices. Payments independent from production mostly accrue to large farmers and raise land prices. In 2021-27, countries will have minimum requirements for redirecting payments towards smaller farms.	Phase out support to farmers that is coupled to production of specific commodities. Make direct payments per hectare decrease with farm area and consider means-testing to better achieve income-support objectives.

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