OECD Economic Surveys
SPAIN

MAY 2021

OECD

OECD Economic Surveys: Spain 2021

Please cite this publication as:
OECD (2021), *OECD Economic Surveys: Spain 2021*, OECD Publishing, Paris, *https://doi.org/10.1787/79e92d88-en*.

ISBN 978-92-64-88239-3 (print)
ISBN 978-92-64-55580-8 (pdf)

OECD Economic Surveys
ISSN 0376-6438 (print)
ISSN 1609-7513 (online)

OECD Economic Surveys: Spain
ISSN 1995-3364 (print)
ISSN 1999-0421 (online)

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

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This Survey is published on the responsibility of the Economic and Development Review Committee of the OECD, which is charged with the examination of the economic situation of member countries.
The economic situation and policies of Spain were reviewed by the Committee on 1 March 2021. The draft report was then revised in the light of the discussions and given final approval as the agreed report of the whole Committee on 24 March 2021.
The Secretariat's draft report was prepared for the Committee by Müge Adalet McGowan and Yosuke Jin under the supervision of Pierre Beynet. Statistical research assistance was provided by Paula Adamczyk, and editorial assistance by Alexandra Guerrero.
The previous Survey of Spain was issued in November 2018.
Information about the latest as well as previous Surveys and more information about how Surveys are prepared is available at http://www.oecd.org/eco/surveys.

Basic statistics of Spain, 2020

(Numbers in parentheses refer to the OECD average)[1]

LAND, PEOPLE AND ELECTORAL CYCLE					
Population (million, 2019)	47.1		Population density per km² (2018)	93.7	(38.0)
Under 15 (%, 2019)	14.6	(17.9)	Life expectancy at birth (years, 2018)	83.4	(80.1)
Over 65 (%, 2019)	19.6	(17.1)	Men (2018)	80.7	(77.5)
International migrant stock (% of population, 2019)	13.1	(13.3)	Women (2018)	86.3	(82.8)
Latest 5-year average growth (%)	0.3	(0.6)	Latest general election	November	2019
ECONOMY					
Gross domestic product (GDP)			Value added shares (%, 2019)		
In current prices (billion USD, 2019)	1 393.5		Agriculture, forestry and fishing	2.9	(2.6)
In current prices (billion EUR, 2019)	1 244.8		Industry including construction	22.3	(26.8)
Latest 5-year average real growth (%)	2.8	(2.2)	Services	74.8	(70.5)
Per capita (000 USD PPP, 2019)	43.5	(49.4)			
GENERAL GOVERNMENT					
Per cent of GDP					
Expenditure (2019)	42.1	(40.6)	Gross financial debt (2019, OECD: 2018)	117.3	(107.5)
Revenue (2019)	39.2	(37.5)	Net financial debt (2019, OECD: 2018)	82.8	(67.7)
EXTERNAL ACCOUNTS					
Exchange rate (EUR per USD, 2019)	0.89		Main exports (% of total merchandise exports, 2019)		
PPP exchange rate (USA = 1, 2019)	0.61		Machinery and transport equipment	31.2	
In per cent of GDP			Manufactured goods	14.3	
Exports of goods and services (2019)	34.9	(54.2)	Chemicals and related products, n.e.s.	13.5	
Imports of goods and services (2019)	31.9	(50.6)	Main imports (% of total merchandise imports, 2019)		
Current account balance (2019)	2.1	(0.4)	Machinery and transport equipment	30.5	
Net international investment position (2019)	-74.6		Chemicals and related products, n.e.s.	14.5	
			Miscellaneous manufactured articles	13.5	
LABOUR MARKET, SKILLS AND INNOVATION					
Employment rate (aged 15 and over, %, 2019)	49.8	(57.6)	Unemployment rate, Labour Force Survey (aged 15 and over, %, 2019)	14.1	(5.4)
Men (2019)	55.6	(65.6)	Youth (aged 15-24, %, 2019)	32.6	(11.7)
Women (2019)	44.3	(50.0)	Long-term unemployed (1 year and over, %, 2019)	5.3	(1.4)
Participation rate (aged 15 and over, %, 2019)	58.6	(61.1)	Tertiary educational attainment (aged 25-64, %, 2019)	38.6	(38.0)
Average hours worked per year (2019)	1,686	(1,726)	Gross domestic expenditure on R&D (% of GDP, 2018)	1.2	(2.6)
ENVIRONMENT					
Total primary energy supply per capita (toe, 2019)	2.6	(3.9)	CO_2 emissions from fuel combustion per capita (tonnes, 2019)	4.9	(8.3)
Renewables (%, 2019)	14.7	(10.8)	Water abstractions per capita (1 000 m³, 2016)	0.7	
Exposure to air pollution (more than 10 µg/m³ of PM 2.5, % of population, 2019)	47.1	(61.7)	Municipal waste per capita (tonnes, 2018)	0.5	(0.5)
SOCIETY					
Income inequality (Gini coefficient, 2018, OECD: 2016)	0.330	(0.310)	Education outcomes (PISA score, 2018)		
Relative poverty rate (%, 2018, OECD: 2016)	14.2	(11.5)	Reading (2015, OECD: 2018)	496	(487)
Median disposable household income (000 USD PPP, 2018, OECD: 2016)	23.9	(25.0)	Mathematics	481	(489)
Public and private spending (% of GDP)			Science	483	(489)
Health care (2019)	9.0	(8.8)	Share of women in parliament (%, 2019)	44.0	(30.7)
Pensions (2017)	11.4	(8.6)	Net official development assistance (% of GNI, 2017)	0.2	
Education (% of GNI, 2018)	4.0	(4.5)			

1. Where the OECD aggregate is not provided in the source database, a simple OECD average of latest available data is calculated where data exist for at least 29 member countries.

Source: Calculations based on data extracted from the databases of the following organisations: OECD, International Energy Agency, World Bank, International Monetary Fund and Inter-Parliamentary Union.

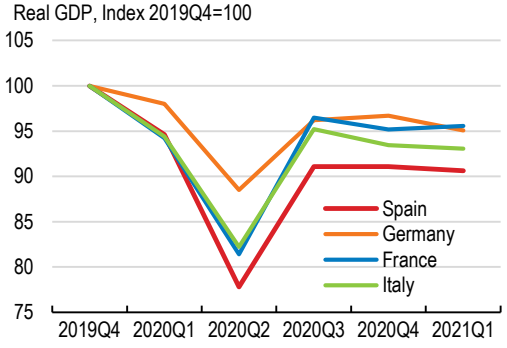
Executive Summary

The pandemic caused an unprecedented economic recession

Economic policies reacted in a timely manner to the crisis, but the recovery will pick up from the second half of 2021.

The pandemic has hit the society and economy hard (Figure 1). The large economic contraction of 10.8% in 2020 reflects strict containment measures, but also structural features that made the Spanish economy more vulnerable. These include the importance of tourism, high prevalence of small and medium sized enterprises and the widespread use of temporary contracts.

Figure 1. The pandemic hit the Spanish economy hard



Source: OECD Economic Outlook (database).

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The government support of around 20% of GDP (including guarantees and indirect measures) mitigated the negative impact of the crisis. The increase in unemployment was cushioned by the short-time work scheme, reaching 23% of salaried workers at the peak of the crisis. Around 90% of the available loan guarantees were utilised in March 2021.

Uncertainty regarding the outlook is very high. GDP is projected to rebound from the second half of 2021, as the gradual deployment of vaccines enables the release of pent-up demand, tourism gradually recovers and the national recovery plan supports activity (Table 1). While domestic demand can be stronger than expected, a potential increase in insolvencies once policy support is phased out poses a strong downward risk and may increase non-performing loans.

Table 1. The recovery is gathering pace

	2019	2020	2021	2022
Gross domestic product	2.0	-10.8	5.9	6.3
Unemployment rate (%)	14.1	15.5	15.4	14.7
Fiscal balance (% of GDP)	-2.9	-11.0	-8.6	-5.4
Public debt (Maastricht, % of GDP)	95.5	120.0	119.7	117.4

Source: OECD Economic Outlook (database).

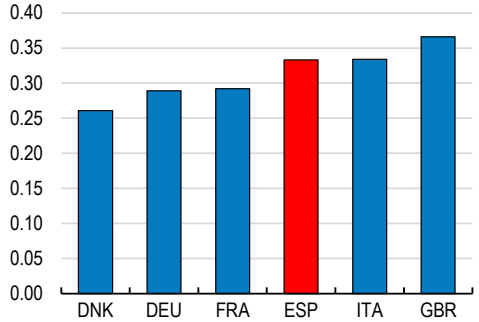
Policy support should be pursued until the recovery is firmly underway, but become more targeted. Accommodative ECB policy and the extensions of the terms of the loan guarantees continue to support firm liquidity. The recently announced direct aid to firms, which suffer from financial difficulties solely due to COVID-19, but are likely to return to profitability in the future, should be executed swiftly. Speedy restructuring of viable firms in temporary distress can prevent their unwarranted liquidation, and should be facilitated out of courts to avoid lengthy proceedings. Elements of the current labour market regulation, such as priority of firm-level agreements, which enable firms to rapidly adapt to changing conditions, will also be crucial to support the recovery.

A durable recovery requires boosting employment, while containing medium-term fiscal challenges

The crisis has exacerbated pre-existing challenges. Addressing structural issues in labour markets can help lower inequalities, which were already high before the pandemic (Figure 2), and contain medium-term fiscal challenges.

Figure 2. Inequality remains high

Gini disposable income[1], 2018 or latest available year



1. Post taxes and transfers.

Source: OECD Income Distribution database.

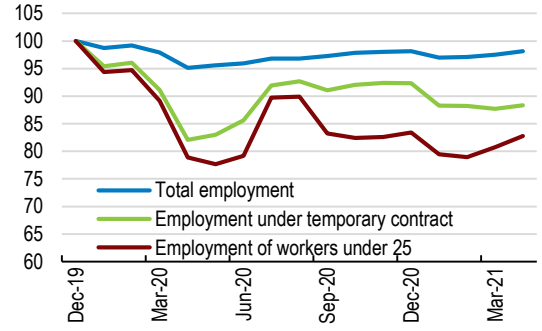
StatLink https://doi.org/10.1787/888934232143

The use of Next Generation EU funds should prioritise reforms that enhance long-term growth. Swift absorption of the funds can also support the near-term recovery. A governance system including different levels of government has been put in place. Continued efforts will be required to tackle potential implementation challenges.

The pandemic hit disproportionately hard young, low-skilled, and temporary workers (Figure 3). Improving the efficiency of active labour market policies will be an important tool to reskill and enhance the employability of displaced workers. The use of tools for the profiling of specific individual needs can allow interventions at an earlier stage, and tailor services more closely to individuals. Ensuring training opportunities for workers on short-time work schemes is also key to facilitate reallocation needs that might arise.

Figure 3. Job losses were concentrated on young and temporary workers

Social security affiliations, index, Dec 2019=100



Source: Ministry of Inclusion, Social Security, and Migration.

StatLink https://doi.org/10.1787/888934232162

The widespread use of temporary contracts increases inequality and in-work poverty. While temporary employment can help impacted sectors in the near term, labour market duality should be lowered in the medium-term. Hiring incentives should be targeted to most vulnerable groups for limited periods and their links to training programmes should be strengthened to provide a stepping stone to more permanent jobs. The menu of contracts firms can choose from should be simplified, while clarifying conditions under which temporary contracts can be used, such as for training or seasonal jobs.

The effects of rapid and large increases in the minimum wage on employment, especially of the youth and the low-skilled, should be evaluated. The process of setting minimum wages could be revised to include a permanent and independent Commission, mandated to evaluate its potential impact and provide recommendations to allow gradual changes in the minimum wage in line with changing labour market conditions and productivity.

In the context of a weakened economy, fiscal consolidation should only be gradual not to derail the recovery. Nevertheless, to bring credibility to fiscal sustainability, given the high level of public debt, a medium-term fiscal consolidation strategy, including all levels of government, should be announced, once the recovery is firmly underway.

The composition and efficiency of public spending can be improved to create space for higher public investment in the medium term. Despite the need to reprioritise expenditures, the use of spending reviews is limited. Lack of policy evaluation, including in sub-national levels of government, can be a barrier to a shift in expenditures to more productive uses.

Fiscal challenges will be exacerbated by the doubling of the old-age dependency ratio by 2050. Adequate and socially acceptable measures should be taken to ensure the long-term financial sustainability of the pension system. For example, the retirement age could be linked to life expectancy. Effective retirement age can be further increased by disincentivising early retirement and introducing new incentives to extend working lives, for example by increasing the number of required contribution periods to gain a full pension, and should be accompanied by measures to re-skill older workers.

There is room to improve environmental taxation to generate energy savings and increase tax revenues. The tax rate on fuels in non-ETS sectors is low in international perspective. Once the economy is on a clear recovery path, taxation of fuels should be increased to better reflect emissions of CO_2. This should be accompanied by redistribution towards poorer households.

Boosting digital diffusion will raise productivity growth and help firms' recovery from the crisis

Spain is improving on digitalisation, but there is room to improve the uptake and use of digital technologies, and information and communication (ICT) skills.

The adoption rate of digital technologies by firms is close to the OECD average, but is below the best performing countries (Figure 4). Furthermore, the use of such technologies to introduce new business processes or products, which would boost productivity, has been limited. Enhancing digital diffusion requires addressing remaining gaps in digital infrastructure and enhancing capabilities of firms and people to take full advantage of digitalisation *via* higher investment in intangible assets and skills.

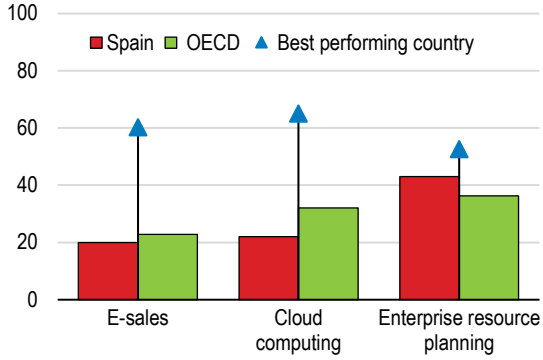
Digital services by public administration are fairly developed, but could be improved further. For example, the provision of e-procurement by regional contracting authorities could be reinforced by the full roll-out of the National Plan for Digitalisation of Public Administration.

Promoting digital diffusion across the country by developing digital infrastructures further is key. Overall, communication infrastructure is well-developed, notably high-quality broadband, such as fibre networks. However, there is a large difference in access between urban and rural areas. Barriers to "rights of way" – permission to install necessary equipment – are high in some regions and municipalities, and should be reduced to lower deployment costs.

Research and development (R&D) raises the ability of firms to introduce new business processes or products, but business R&D investment remains low. Partnerships between firms and research institutes can be an effective tool to spur innovation by sharing risks and rewards of digital innovation. The role of Technology Centres, among which there are regional institutions to support innovation, can be enhanced to increase cooperation between research institutes and SMEs, which need to innovate and use digital technologies more.

Figure 4. There is room to boost firms' adoption of digital technologies

% of firms, 2019 or latest available year



Note: Excludes firms from the financial sector.
Source: OECD ICT Access and Usage by Businesses database.
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Addressing key bottlenecks, such as people's ICT skills, through education policies at every level, would enable the use of digital technologies and boost productivity growth. This would help in particular low productivity firms and low-skilled people, making the benefits of digitalisation shared by all.

The relevance and targeting of on-the-job training can be improved to upskill workers. The provision of relevant training in line with current and future labour market needs of firms, especially SMEs, is a major challenge. Targeted training to those with lower digital skills, such as low-skilled and older workers, is key. Public job training programmes concentrating on these workers and skills should be developed. In addition, financial incentives for lifelong training should be at least partially shifted to training programmes chosen by individuals from employer-based ones, which could promote the training of low-skilled workers.

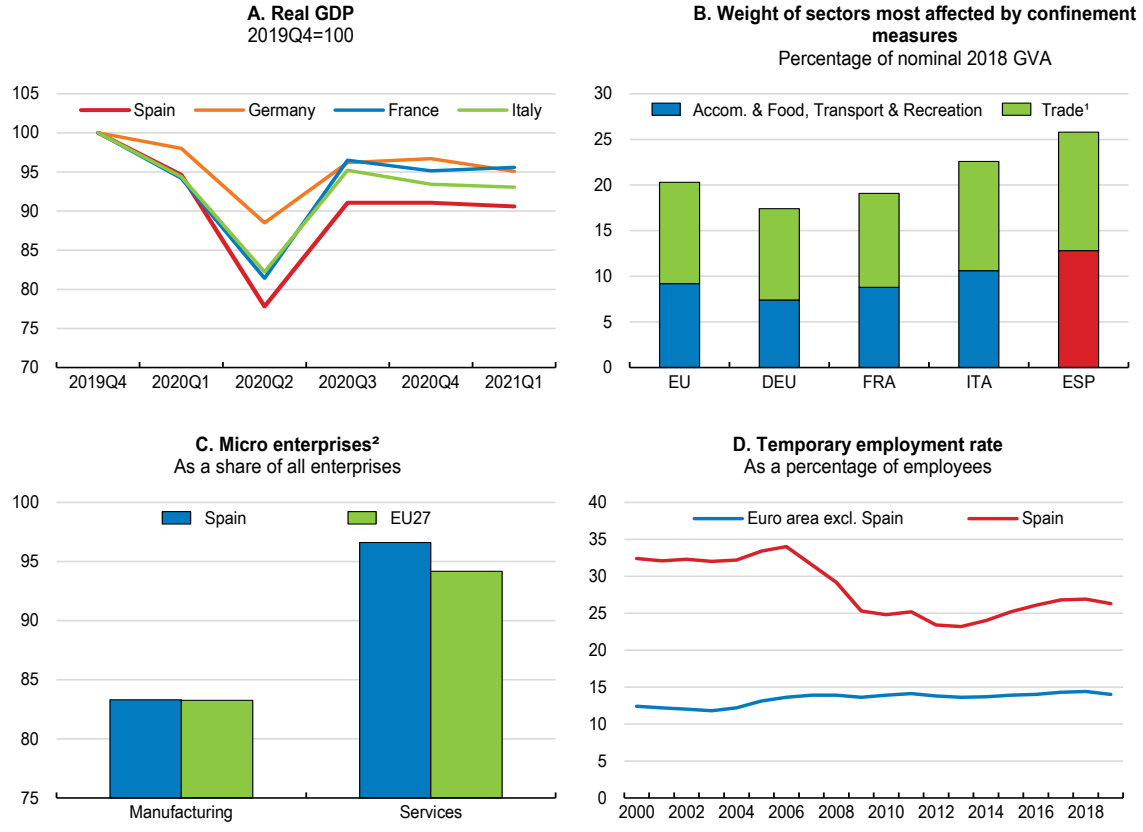
MAIN FINDINGS	KEY RECOMMENDATIONS
Mitigating the effect of the pandemic while addressing medium-term fiscal challenges	
Fiscal policy responded quickly and effectively to the crisis. Yet, uncertainty about the pace of the recovery remains high, and the impact varies across sectors, firms and workers.	Keep fiscal policy supportive until the recovery is firmly underway, by prolonging support measures while making them more targeted.
Without a credible medium-term fiscal consolidation strategy to put public debt on a sustainable downward path once the recovery is firmly underway, risks to fiscal sustainability could increase.	When the recovery is firmly underway, announce a multi-year path for fiscal consolidation strategy, which includes all levels of government.
Short-time work schemes limited the rise in unemployment, but there might be a need to reallocate some of these workers to other firms and sectors.	Ensure that workers on short-time work schemes, especially those in sectors facing the longest recovery periods, effectively use their priority for training.
Existing regulations for flexibility at the firm level can help firms adapt more easily in the post-pandemic recovery phase.	Maintain a flexible labour market that allows firms to adapt to changing economic conditions, including through the priority of firm level agreements over sectoral and regional ones.
The recent measures to provide direct aid to help viable firms facing distress solely due to COVID-19 are welcome. Speedy restructuring of viable firms in temporary distress could prevent their unwarranted liquidation, but congested courts can delay this process.	Ensure the swift disbursement of the new direct aid measures and increase the allocated funds, if needed . Promote out-of-court restructuring proceedings, especially for small and medium sized enterprises
The ambitious national recovery plan contains investments and reforms in many areas, and frontloads the use of European Union funds to aid the near-term recovery. A governance system, including different levels of government, has been put in place, but could face implementation challenges.	Prioritise reforms that enhance long-term growth, while ensuring swift implementation to also support the near-term recovery. Ensure efficient coordination and governance of the recovery plan, by ensuring transparent procedures and criteria for investments.
Population ageing will continue to put pressure on the financial sustainability of the pension system. The gap between the average labour market exit age and the statutory retirement age is large.	Take adequate and socially acceptable measures to ensure the long-term financial sustainability of the pension system. Link the statutory retirement age to life expectancy at retirement, disincentivise early retirement, for example by increasing the number of years of contribution periods to gain a full pension.
Promoting an inclusive and sustainable recovery	
The efficiency of active labour market programmes in terms of individualised support and training is low.	Introduce the use of profiling tools to identify job-seekers at risk of becoming long-term unemployed and their training needs.
The wide range of justifications for using a temporary contract and the related hiring incentives contribute to a high use of short-term hiring.	Target existing hiring incentives to specific vulnerable groups and link them to training programmes. Simplify the menu of contracts firms can choose from.
The recent rises in minimum wages have not been introduced gradually, which could potentially lower employment for vulnerable groups.	Establish a permanent Commission to regularly evaluate the changes to the minimum wage, in line with changing labour market conditions and productivity.
There is room to improve carbon pricing for both road and non-road emissions.	Over the medium term, increase taxation of fuels to better reflect emissions of CO_2, together with redistribution towards poorer households.
Boosting digital diffusion and higher productivity growth	
Digital services by public administration are fairly developed. However, there is scope to develop them further, such as the provision of e-procurement by regional contracting authorities.	Fully roll out the National Plan for Digitalisation of Public Administration.
Barriers to “rights of way” (permission to install necessary equipment) are excessive in some regions and municipalities, hampering further development of communication infrastructure.	Continue to reduce excessive regulatory burdens to develop communication infrastructure, while reducing regulatory differences across regions, through the consultation mechanism in place.
Many small businesses lack the capacity to conduct R&D and do not know how to access the newest technologies.	Strengthen Technology Centres’ capacity to effectively conduct R&D through partnerships between firms, especially SMEs, and research institutes.
Training needs are often not well identified and do not reach workers that need it the most, such as low-skilled and older workers.	Shift job training subsidies to individuals at least partially, or develop public job training programmes targeted to low-skilled and older workers for specific purposes, such as promoting ICT skills.

1 Key Policy Insights

The pandemic has accentuated some persistent structural challenges

Until the onset of the COVID-19 pandemic, Spain was experiencing a robust job-rich recovery and had improved its resilience in the aftermath of the global financial crisis, with a more balanced growth pattern, a healthier financial sector, and a lower share of construction in value-added. The impact of the crisis has been more severe than in other OECD countries due to the large scale of the pandemic and the sectoral composition of the economy, with a high share of services and tourism-related activities in employment and value-added. Some of the activities most directly affected by contact restrictions could not be done remotely, either due to their nature or to the lagging use of digital technologies prior to the crisis. The high share of small firms and temporary employment also made Spain more vulnerable to the shock (Figure 1.1).

Figure 1.1. The impact of the COVID-19 shock has been severe



1. Trade includes wholesale and retail trade and repair of motor vehicles.
2. Micro enterprise refers to those with less than 10 employees.

Source: OECD Economic Outlook: Statistics and Projections (database); Bank of Spain; and Eurostat, Structural Business Statistics.

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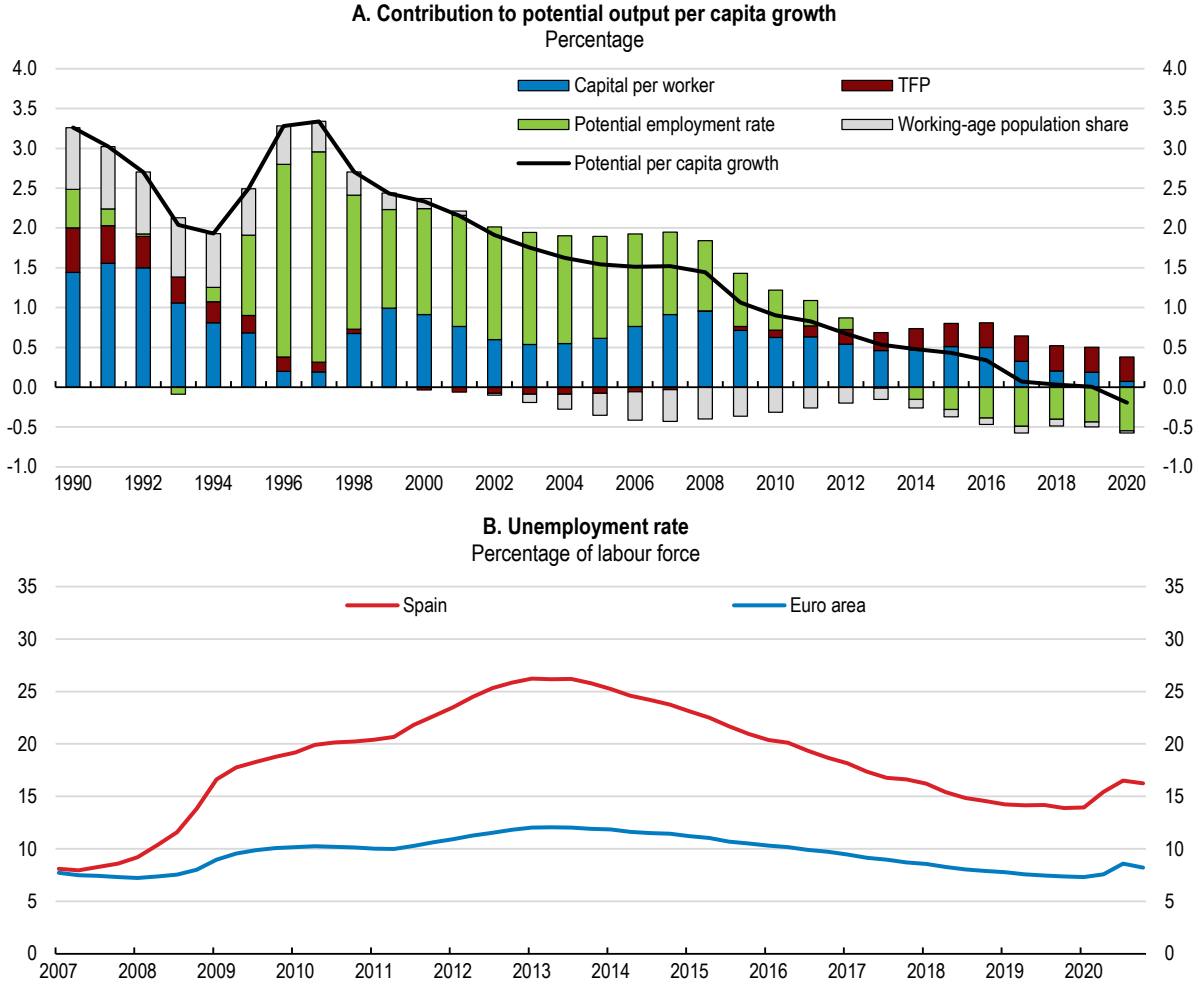
Swift and extensive income and liquidity support measures mitigated the economic and social impact of the pandemic (see below). The short-time work schemes and the support to the self-employed limited the impact on unemployment and household incomes, while public loan guarantees helped prevent a disruption to the supply of credit in contrast to the global financial crisis. However, the crisis will exacerbate Spain's key challenges of low potential growth and high unemployment (Figure 1.2). The pandemic has shown the benefits of a more digitalised economy (e-commerce, teleworking) and accelerated the pace of digital adoption, which can help boost growth through productivity gains (Chapter 2). Addressing structural issues in labour markets will be key to an inclusive recovery. Spain also entered the crisis with existing risks around long-term fiscal sustainability. Public debt to GDP was already high at 95.5% in 2019, only 5% below its peak in 2014, and Spain is projected to have one of the highest old-age to working-age ratios in the OECD in 2050.

Figure 1.2. Boosting potential output and lowering unemployment are key challenges



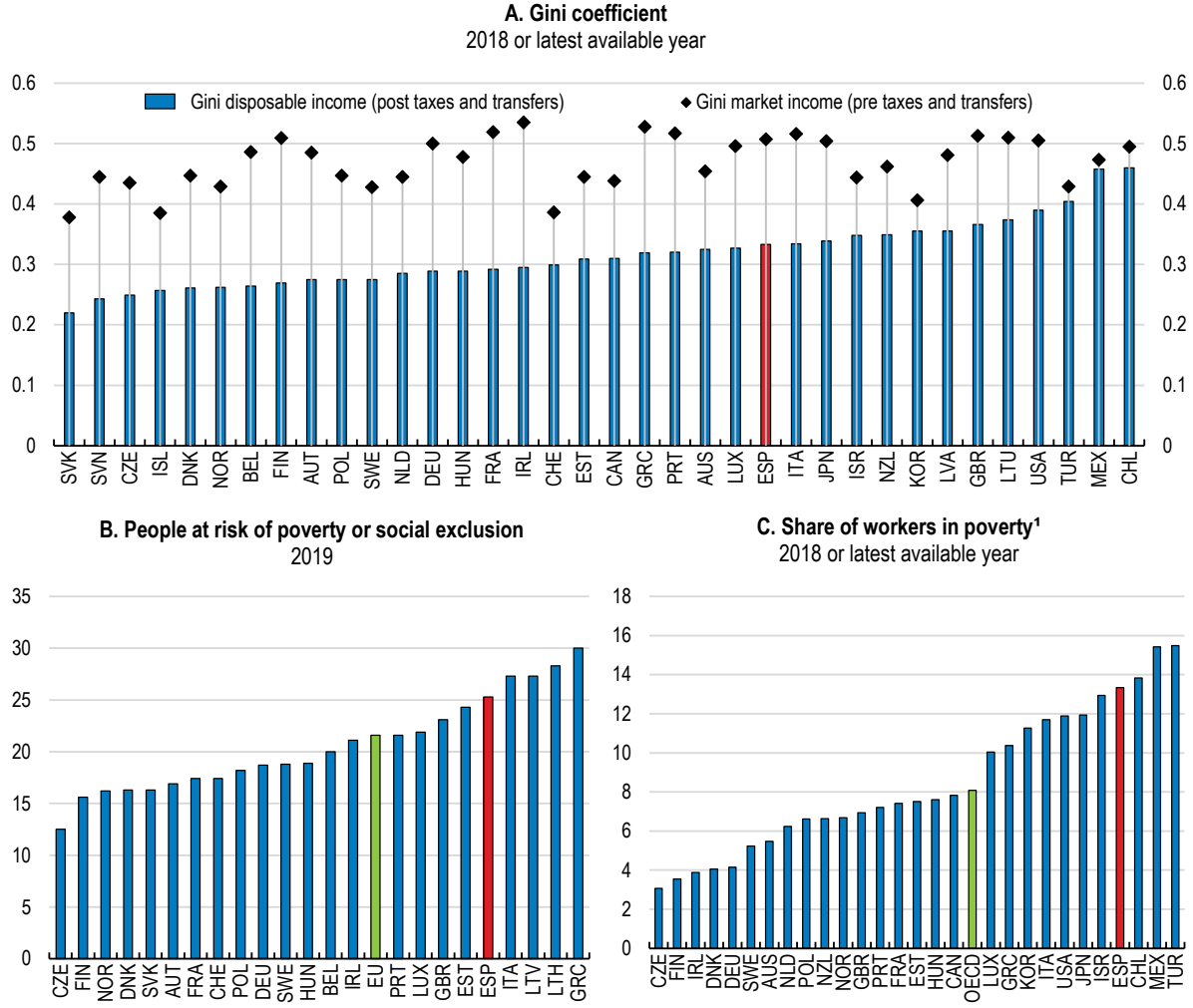
Source: OECD Economic Outlook: Statistics and Projections (database).

StatLink https://doi.org/10.1787/888934232219

The authorities took extensive economic and social measures to protect vulnerable groups, *via* guarantees for the supply of basic essential utilities, deferral of rent payments, mortgage and other personal loans and taxes, eviction bans, rent freezes, and a new rental aid program. A national minimum income guarantee scheme was also introduced in May 2020. These measures contributed to shielding most households from the immediate effect of the shock, but certain groups are more affected (CaixaBank, 2020[1]). The pandemic could raise inequalities, as most impacted sectors tend to employ a traditionally high proportion of women, youth and low-skilled workers on temporary contracts.

Despite improvements in recent years, income inequality, the share of people at risk of poverty and in-work poverty were relatively high before the crisis (Figure 1.3). These outcomes have been linked to labour market segmentation, lower average hours worked and household structure (e.g. one working adult with children) (EC, 2019[2]). Spain also displays large regional disparities in terms of education and labour market outcomes, compounded by low interregional mobility (OECD, 2018[3]). The crisis had an uneven effect on regions due to heterogeneity in the severity of the health crisis, the sectoral structure (e.g. share of tourism) and existing types of employment (Figure 1.4), which can exacerbate regional disparities.

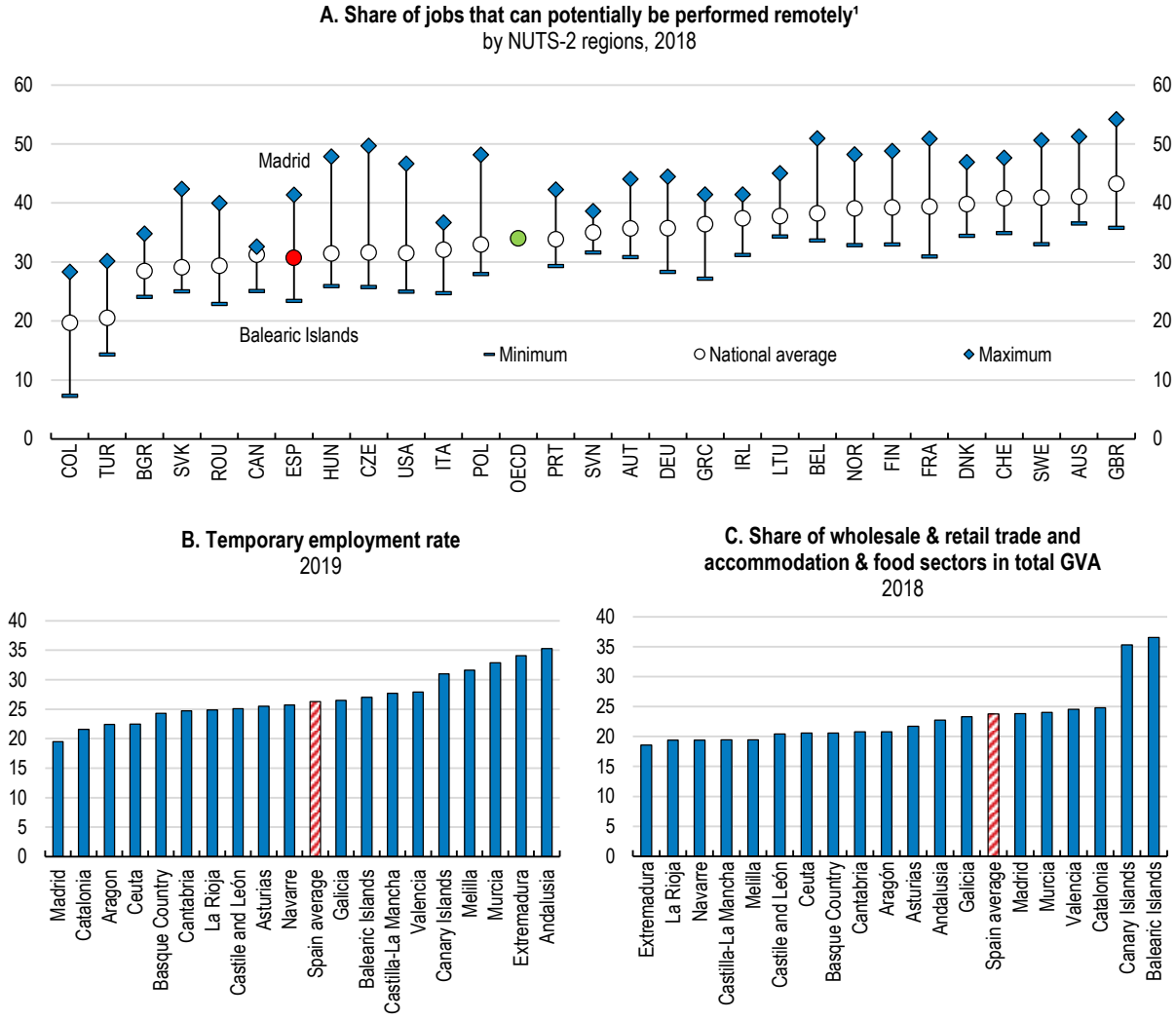
Figure 1.3. Income inequality and poverty rates were relatively high before the crisis



1. Percentage of individuals living in households with disposable income below 50% of the median income, among all individuals living in a given type of household with a head of working age and at least one worker.
Source: OECD Income Distribution database; and Eurostat, Income and Living Conditions database.

StatLink https://doi.org/10.1787/888934232238

Figure 1.4. The uneven effects of the crisis on regions can exacerbate regional inequalities



1. The number of jobs in each country or region that can be carried out remotely as the percentage of total jobs. Countries are ranked in order by the share of jobs in total employment that can be done remotely at the national level.
Source: OECD (2020), OECD Regions and Cities at a Glance 2020; INE, Labour Market Statistics; and Eurostat, Regional National Accounts database.

StatLink https://doi.org/10.1787/888934232257

Against this background, the main messages of the survey are:

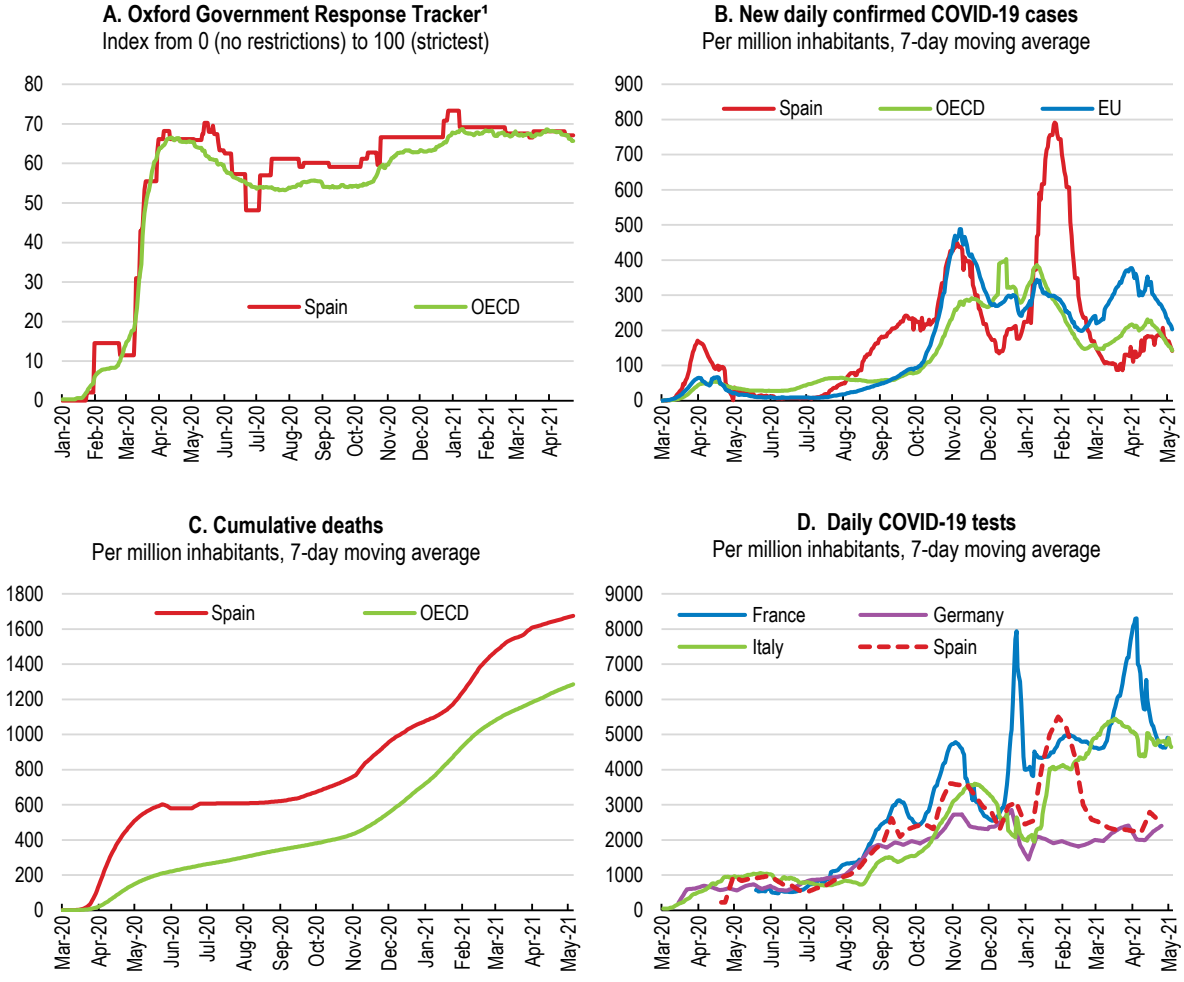
- Macroeconomic policy needs to remain supportive as long as the economy remains vulnerable, with an increasing use of targeted policies. Once the recovery is firmly underway, the government should announce a medium-term fiscal consolidation strategy to ensure fiscal sustainability.
- A durable and inclusive recovery will require improving the quality of jobs *via* lower labour market segmentation, better skills and enhanced support for job seekers.
- Accelerating the digital transformation – notably by reducing barriers to technology adoption and use, including through higher digital skills and innovation – should facilitate the changes of the economy to a post-pandemic world, while boosting productivity growth.

Mitigating the social and economic impact of the pandemic remains a priority

Spain has been hit hard by the pandemic

The three waves of the pandemic in the spring and the autumn of 2020 and early 2021 led to containment measures and severely strained the health system (Figure 1.5, Panels A-C). The first confinement and health measures were taken by the central government with a state of emergency (14 March-21 June). Since June, containment measures are taken at the regional level, which have the competency for health policies. The state of emergency introduced in October, which allowed the introduction of a national night curfew, ended on 9 May. As the vaccination campaign started, the reduction in cases led to the partial lifting of some containment measures since early March, although some localised mobility restrictions and limited operating hours and capacity constraints remain, with regional differences.

Figure 1.5. The COVID-19 pandemic in Spain



1. The Oxford COVID-19 Government Response Tracker index is a composite measure based on nine response indicators including school closures, workplace closures, and travel bans, and is scaled from 0 (no restrictions) to 100 (highest category of restrictions). The OECD average covers all OECD countries where data are available for all components.

Source: Oxford University; and OECD Calculations based on Our World in Data, OECD Population Statistics, Eurostat Population Statistics (as of May).

StatLink https://doi.org/10.1787/888934232276

Additional resources reinforced the capacity of the health system to fight the pandemic. EUR 4.4 billion (0.35% of GDP) was allocated to health spending at different levels of government in March 2020, and the COVID-19 Fund (a non-repayable transfer from the central government to the regions of EUR 16 billion) transferred EUR 9 billion based on health expenditure indicators. Until the successful and wide deployment of the vaccines, social distancing and hygiene measures should be maintained, and capacity in terms of health workers, critical medical supplies and infrastructure should continue to be strengthened. Cross-country evidence suggests that an effective testing, tracing and isolation strategy is key to controlling the virus, while minimising the impact on economic activity (OECD, 2020[4]). Testing capacity has increased over time in Spain (Figure 1.5, Panel D).

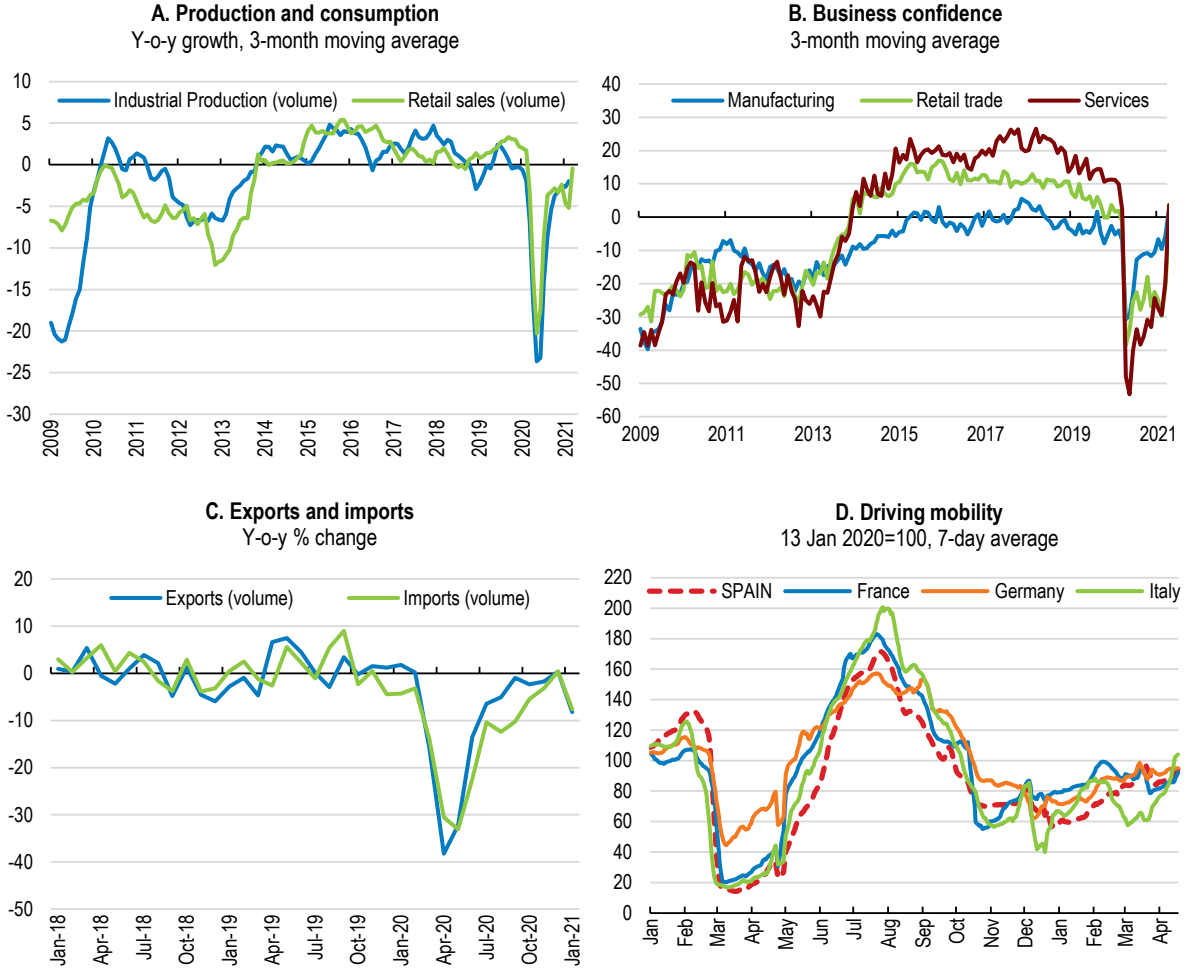
In November 2020, the government announced its plan for the distribution of vaccines (140 million doses expected), which would be free, voluntary and administered through the public healthcare system (Government of Spain, 2020[5]). The strategy is continuously updated to reflect changing conditions, most recently in April 2021 (Government of Spain, 2021[6]). According to a March survey, the intention to get vaccinated in Spain, at 82%, is high compared to the 15 countries for which data are available, similar to Italy, and higher than the 59% in France (WEF and IPSOS, 2021[7]). Although gathering pace in recent weeks, the initial roll-out of vaccination has been slow, like in most EU countries, mostly due to the slow delivery of the vaccines. 33% of the Spanish population had received at least one dose of vaccine in mid-May, compared to 46% in the United States or 53% in the United Kingdom. An acceleration of the vaccination process, linked to the availability of vaccines, is necessary as the spread of variants could endanger the control of the epidemic. Gradual lifting of containment measures and close monitoring of cases will also be important with the end of the state of emergency.

The economic recovery is fraught with high risks

The Spanish economy experienced an unprecedented downturn of -10.8%, in 2020, given the strength of infections and strict containment measures. After falling steeply, industrial production, retail trade and business confidence have not fully recovered, with a more severe impact on services (Figure 1.6). In response to the pandemic, household and firms' bank deposits have risen and increased by 7.1% and 10.9%, respectively in March 2021, compared to a year ago. Household savings reached a record high of 22.5% of disposable income in the second quarter of 2020 and remained elevated at 15% in the third quarter. Exports and imports also declined strongly in 2020, reflecting the collapse of tourism and the sharp reduction in domestic demand, respectively. After recovering in the summer, mobility has declined since then, but remains above that during the spring lockdown (Figure 1.6, Panel D).

Tourism contributes 12.3% of GDP and 12.7% of employment (Figure 1.7, Panel A), while international tourism expenditure accounts for 16% of export revenues and 50% of service export revenues. The crisis hit hard the services trade balance, which traditionally contributes positively to the current account surplus (Figure 1.7, Panel B). Foreign tourism, which makes up around half of tourism activity, came to a halt during the spring confinement and recovered only slightly since (Figure 1.7, Panels C-D). Estimates point to a 75.4% drop in tourism activity between April 2020 and March 2021 (Exceltur, 2021[8]), with a heterogeneous effect across regions (Bank of Spain, 2020[9]). Tourism could also be adversely affected by Brexit, given that the UK accounts for 21.6% of tourist inflows and expenditures, with uneven regional effects (Buesa et al., 2020[10]).

Figure 1.6. Activity is recovering slowly



Source: OECD Monthly Economic Indicators; Eurostat, Quarterly Sector Accounts database; Refinitiv; and Apple (2021), Mobility trends reports.
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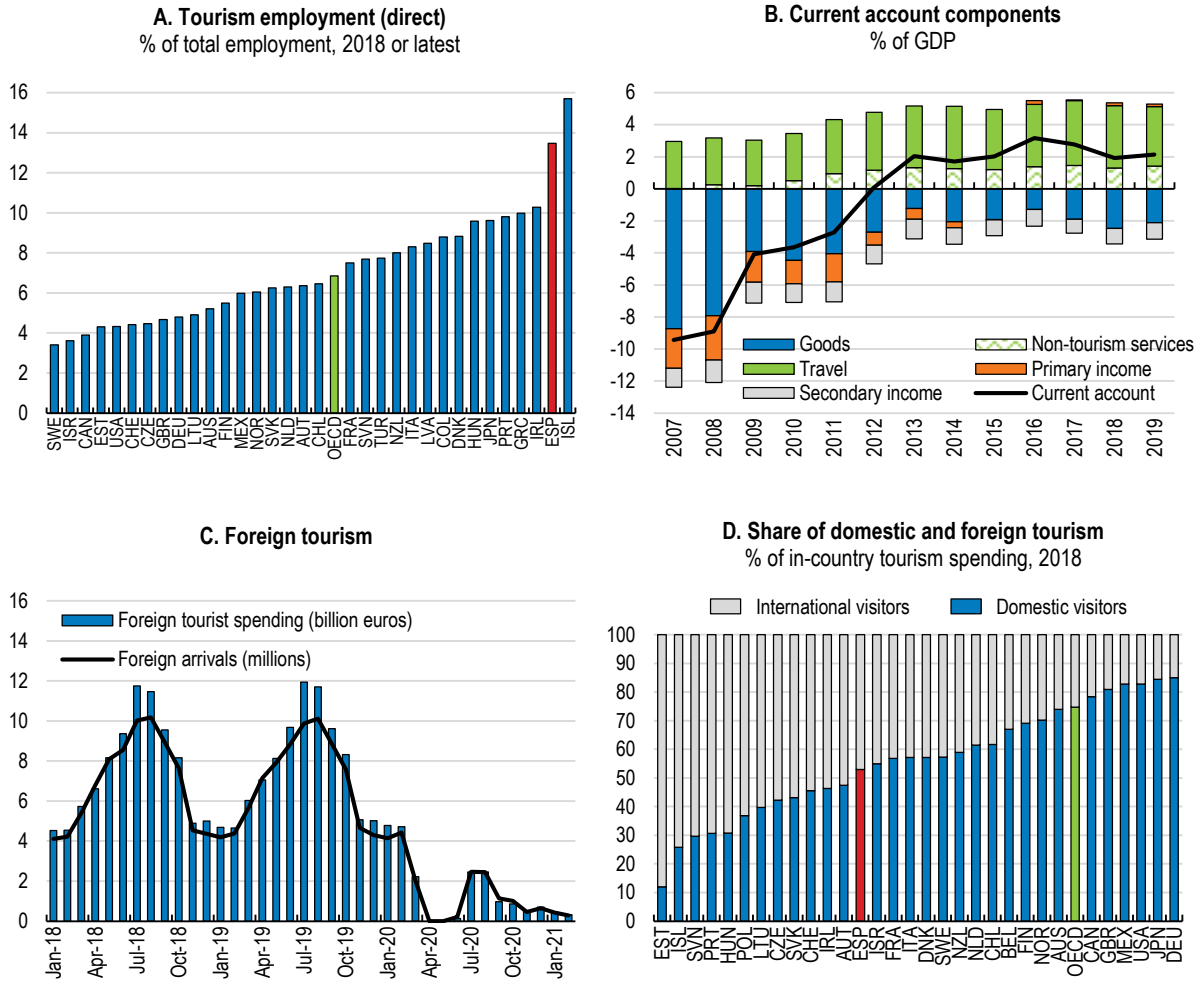
After the steep decline in 2020, GDP is projected to rebound from the second half of 2021, with the gradual deployment of vaccines enabling the release of pent-up demand and the support of the Next Generation EU funds (Table 1.1). Recent projections suggest that tourism activity in 2021 will still be 37.6% below the levels of end-2019 (Exceltur, 2021[11]), which will moderate the recovery in 2021. However, tourism will gain momentum in 2022, resulting in a positive contribution of net exports. Policies will continue to limit job losses and cushion the damage to the productive capacity in 2021. A reduction in uncertainty will lead to a decline in precautionary savings and support private consumption, but not all household savings will be unwound given the incomplete recovery of the labour market. Business investment will pick up from the second half of 2021, supported by low interest rates, declining uncertainty and the implementation of the recovery plan. However, some firms whose financial positions weakened considerably could limit the extent of the recovery.

Figure 1.7. Tourism sector was badly hit



Source: OECD Tourism Statistics (database); Eurostat, Balance of Payments (database); and INE, Tourism Statistics.

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The short-term outlook is subject to particularly high uncertainty. A higher than projected rise in insolvencies, as policies are wound down, could dent economic prospects. A slower recovery of the main trading partners would also delay the recovery. On the upside, a faster-than-projected vaccination, and a decline in precautionary savings, and a swifter use of EU funds would raise growth. In addition, other possible shocks include prolonged and strict national lockdowns beyond the first half of 2021, due to lower-than-expected effectiveness of vaccines (Table 1.2).

Table 1.1. Macroeconomic indicators and projections

Annual percentage change, volume (2015 prices)

	2017	2018	2019	2020	2021	2022
	Current prices (billion EUR)					
Gross domestic product (GDP)	**1,161.9**	**2.4**	**2.0**	**-10.8**	**5.9**	**6.3**
Private consumption	678.1	1.8	0.9	-12.1	6.4	5.6
Government consumption	216.3	2.6	2.3	3.8	2.6	1.7
Gross fixed capital formation	216.9	6.1	2.7	-11.4	8.4	12.3
Housing	56.2	12.4	4.1	-16.6	1.2	5.5
Final domestic demand	1,111.4	2.8	1.5	-8.8	5.9	6.1
Stockbuilding[1]	8.6	0.3	-0.1	-0.3	-0.2	0.0
Total domestic demand	1,120.0	3.1	1.4	-9.1	5.7	6.1
Exports of goods and services	408.4	2.3	2.3	-20.2	9.8	9.5
Imports of goods and services	366.5	4.2	0.7	-15.8	9.6	9.3
Net exports[1]	41.9	-0.5	0.6	-2.0	0.2	0.2
Other indicators (growth rates, unless specified)						
Potential GDP	. .	0.4	0.5	0.4	0.4	0.6
Output gap[2]	. .	-1.8	-0.5	-11.6	-6.8	-1.6
Employment	. .	2.7	2.3	-2.9	1.6	1.1
Unemployment rate[3]	. .	15.3	14.1	15.5	15.4	14.7
GDP deflator	. .	1.2	1.4	1.1	0.8	1.3
Consumer price index	. .	1.7	0.8	-0.3	1.6	1.1
Core consumer price index	. .	1.0	1.1	0.5	0.4	0.9
Household saving ratio, net[4]	. .	1.4	2.0	10.5	7.3	4.4
Current account balance[5]	. .	1.9	2.1	0.7	0.6	1.0
General government fiscal balance[5]	. .	-2.5	-2.9	-11.0	-8.6	-5.4
Underlying general government fiscal balance[2]	. .	-1.3	-2.6	-3.7	-5.0	-5.8
Underlying government primary fiscal balance[2]	. .	0.9	-0.5	-1.9	-3.4	-4.4
General government gross debt (Maastricht)[5]	. .	97.4	95.5	120.0	119.7	117.4
General government net debt[5]	. .	78.6	82.8	106.4	108.2	105.9
Three-month money market rate, average	. .	-0.3	-0.4	-0.4	-0.5	-0.5
Ten-year government bond yield, average	. .	1.4	0.7	0.4	0.3	0.3

1. Contribution to changes in real GDP
2. As a percentage of potential GDP.
3. As a percentage of the labour force.
4. As a percentage of household disposable income.
5. As a percentage of GDP.

Source: OECD (2021), *OECD Economic Outlook: Statistics and Projections* (database), May.

Table 1.2. Events that could lead to major changes in the outlook

Shock	Possible impact
Multiple COVID-19 outbreaks, with lower-than-expected vaccine effectiveness	Re-imposition of stricter confinement measures and heightened uncertainty, with major negative impacts on private consumption and investment. Increases in unemployment and bankruptcies.
A surge in non-performing loans	Banks' increased need for public support could put additional pressure on public finances and lead to a steep increase in sovereign spreads.
Slow implementation of the recovery plan	Persistently weak public investment would slow down the recovery.

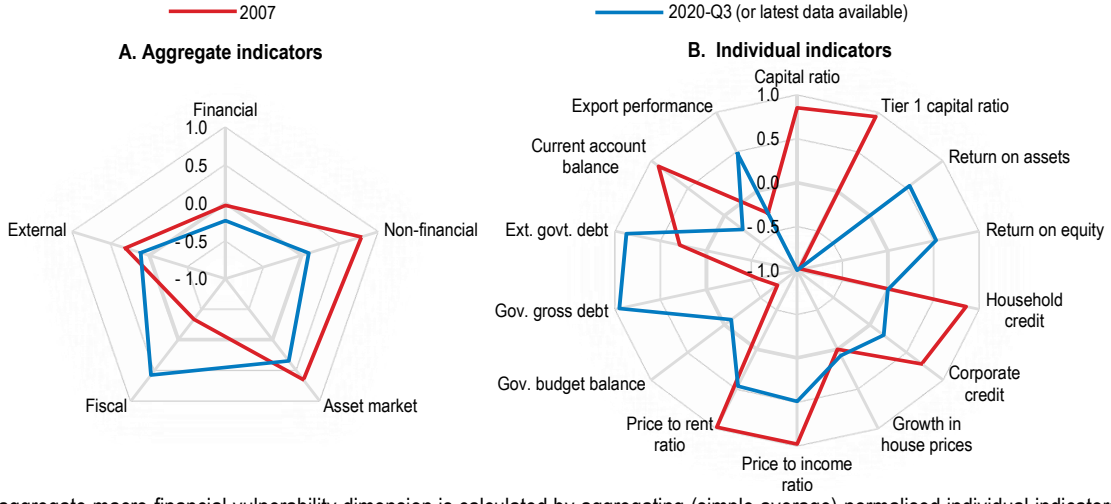
The crisis has increased financial stability risks

Spain entered this crisis with reduced macro-financial vulnerabilities from the global financial crisis, in terms of the end of the excessive credit growth fuelled by the housing bubble, and stronger private sector (including banks) balance sheets (Figure 1.8). Tier-1 and CET1 capital ratios are higher than minimum requirements, but the latter, at 12.9% in December 2020, is 3 percentage points lower than the euro area average. In February 2021, the ratio of non-performing loans (NPLs) to GDP was 4.5%, close to the EU average. However, elevated public debt has been a growing vulnerability since 2007, which can also have implications for financial stability, with banks holding domestic government bonds, at 7% of assets (IMF, 2020[12]). The exposure of some banks to emerging markets heavily impacted by the crisis through subsidiary operations (Brazil, Mexico, Turkey), which helped mitigate the effects of the great financial crisis, creates new risks.

A number of financial measures were taken at both the European and national level in response to the crisis, such as the relaxation of capital and liquidity requirements, and higher flexibility in accounting rules and computation of regulatory capital, while banks were asked not to pay dividends until January 2021 and exercise prudence regarding dividend distribution thereafter.

Figure 1.8. Macro-financial vulnerabilities have changed since 2007

Index scale of -1 to 1 from lowest to greatest potential vulnerability, where 0 refers to long-term average, period since 1970[1]



1. Each aggregate macro-financial vulnerability dimension is calculated by aggregating (simple average) normalised individual indicators from the OECD Resilience Database. Individual indicators are normalised to range between -1 and 1, where -1 to 0 represents deviations from long-term average resulting in less vulnerability, 0 refers to long-term average and 0 to 1 refers to deviations from long-term average resulting in more vulnerability. The capital ratios, return on assets and equity refers to the banking system.
Source: Calculations based on OECD (2020), OECD Resilience Database, November.

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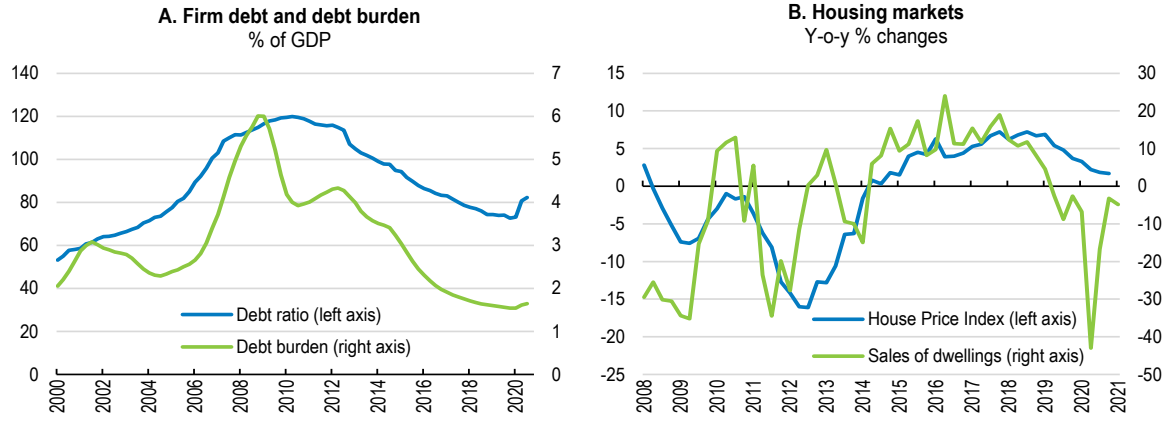
The pandemic increased the financial weakness of some segments of firms and households, through a loss of activity and income, and higher debt accumulation in the case of firms (Bank of Spain, 2021[13]). Firms' debt ratio increased in 2020 (Figure 1.9, Panel A). According to Bank of Spain calculations and simulations for firms reporting to the Central Balance Sheet Data Office Quarterly Survey, the percentage of firms posting losses rose by 8 percentage points to 34% in 2020, with a disproportionately higher effect on SMEs in the most impacted sectors (Bank of Spain, 2021[13]). An OECD accounting exercise suggests that young, small and low-productivity firms in sectors with low intangible intensity and more affected by containment measures are likely to have higher insolvency risks (Box 1.1).

Policies helped to mitigate the impact on households and firms, but as support measures are gradually unwound, NPLs are likely to increase. The extensions of the maturity period to pay the whole loan, the grace periods for the payment of the principal of the loan, and the deadline to apply for loans under the public guarantees until December 2021 will limit an immediate rise in NPLs. In addition to the public loan guarantees (see below), certain loan moratoria for mortgage and non-mortgage loans, amounting to EUR 56.7 billion (8% of total credit granted by Spanish credit institutions for the loan portfolios that qualify for the moratoria) in January 2021, were introduced (Bank of Spain, 2021[14]), which can increase NPLs going forward.

The increase in loan loss provisions in preparation for these contingencies and fall in revenues lowered bank profitability, as reflected in sharp falls in their return on assets and equity in 2020 (Figure 1.8). Supervisors need to continue to monitor closely banks' forward-looking plans for resolving NPLs and ensuring resilient capital positions. It will be important to incorporate an analysis of how borrowers qualifying for moratoria can resume their loan repayments in these plans. In addition, the authorities should start planning for a potential need for longer-term restructuring of payment obligations, as these schemes aim to prevent short-term liquidity needs (see below).

Figure 1.9. Corporate debt and housing markets pose risks



Note: In panel B, only January and February data is used for 2021Q1.
Source: Bank of Spain; Eurostat, House Price Indices; and INE.

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Future bank profitability could be improved by higher efficiency through cost-cutting and better digitalisation (Toloba and Del Río, 2020[15]). The FinTech sandbox introduced in November 2020 can help banks develop new financial products and services. Regulatory sandboxes allow the pilot testing of newly developed technologies within a well-defined space and duration, with safeguards to contain the consequences of failure. While regulatory sandboxes are emerging as a new way to increase flexibility, it will be important to monitor their effectiveness in terms of balancing consumer protection and innovation (OECD, 2018[16]). The consolidation of the banking sector, such as the recent two mergers of four banks, can also enhance efficiency, but the impact on competition needs to be monitored closely.

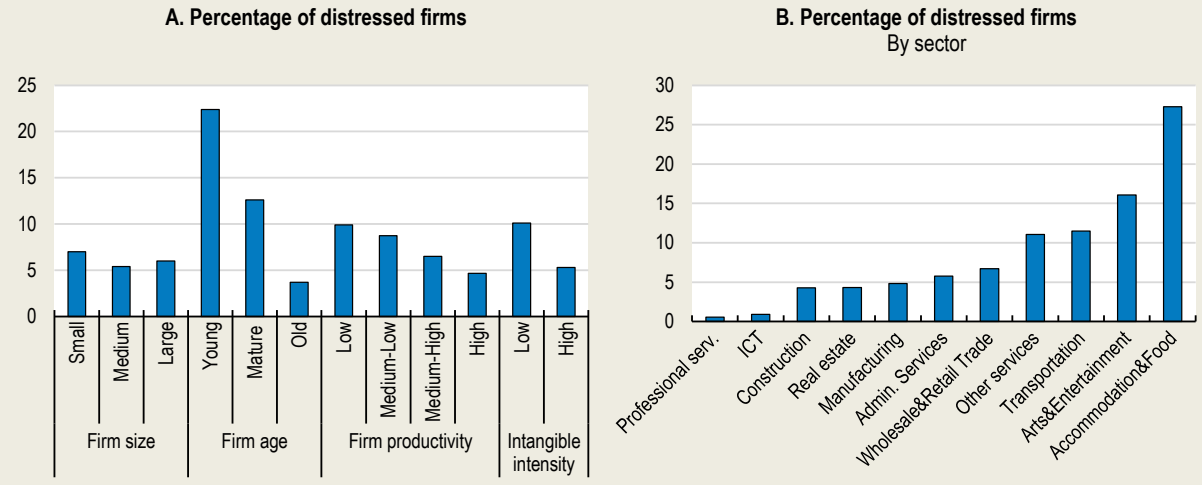
The slowdown in housing markets could also potentially lower bank profits. The housing market was already cooling down in terms of activity and prices in 2019 (Figure 1.9, Panel B), but the strict spring lockdown led to a sharp fall in sales in the residential and commercial real estate markets, which started to pick up with the relaxation of restrictions. The fall in house prices was much less than that in the global financial crisis, reflecting the lack of widespread overvaluations prior to the pandemic. Given the income shock and the uncertainty of the situation of households, demand is recovering more slowly than supply. Housing market developments may be uneven across regions and types of property, given the heterogeneity in prices prior to the crisis, and contribute to downside risks to the economic recovery and credit quality of bank assets, even though risks have been contained so far.

Box 1.1. The effects of the shock on firm viability: an empirical simulation

Figure 1.10 presents calculations, based on the methodology in (Demmou et al., 2021[17]), on the percentage of solvent firms, which may turn distressed due to the COVID-19 shock, but does not take into account the policy support measures, so should be treated with caution (see (Blanco et al., 2020[18]) for how policies have helped potential solvency risks). It utilises data for 188 767 Spanish firms in manufacturing and business non-financial services from the ORBIS database. The sample excludes firms that would have been distressed (firms with negative book value of equity at the end of 2018) and would have experienced negative profits even in normal times, hence presents the incremental effect due to the shock.

The results suggest that 7.5% of otherwise viable companies could become distressed, i.e., the book value of their equity becomes negative. Young, small and low-productivity firms in sectors with low intangible intensity and more affected by containment measures are estimated to have higher insolvency risks. Furthermore, calculations suggest that the predicted decline in profits of around 35% impairs firms' ability to service their debt and around 40% of firms would not be profitable enough to cover their interest expenses. Relying on historical experiences, an increase of firm financial leverage ratios consistent with the predictions of this model is expected to decrease the investment ratio by 2.2% in Spain.

Figure 1.10. The share of viable firms predicted to become distressed varies by firm characteristics



Note: The figure shows the percentage of distressed firms in a scenario of a sharp drop in activity lasting two months (a confinement period), followed by progressive recovery in the first seven months and a second, relatively smaller, outbreak from the eighth month onwards, accompanied by more limited lockdowns in the remaining part of the year (see (Demmou et al., 2021[17]) for details). Firms are defined as distressed if their book value of equity is predicted to be negative one year after the implementation of confinement measures. Note that the sample is restricted ex-ante to firms having both positive profits and book value of equity in the 2018 reference year. Intangible intensity is measured following (Demmou, Franco and Stefanescu, 2020[19]), as the median ratio (across firms within industries) of intangible over total assets. Productivity levels, defined according to quartiles within each (2-digits Nace Rev.2) industry of multi-factor productivity computed according to (Wooldridge, 2009[20]) value added based methodology. Age is defined as the difference between 2018 and the year of incorporation of the firm and young firms are those with less than 5 years, mature firms those from 5 to 10 years and old those more than 10 years. Small enterprises are those with 10 to 49 employees, medium enterprise those with 50 to 249 employees and large enterprise those with 250 or more persons employed.
Source: OECD calculations based on ORBIS.

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Policy support should continue, but adapt to the evolution of the pandemic

The government introduced direct fiscal support (4% and 2.3% of GDP in 2020 and 2021, respectively) and liquidity measures (14.3% of GDP) to address the impact of the pandemic. Fiscal support should continue until recovery is firmly underway, with a view to be selective and targeted to those most affected by the crisis. For example, sector-based plans were launched for tourism, transport and the automotive industries in June-July 2020. In October 2020, the government announced a training plan to reach 70 000 tourism workers and, in December 2020, a reinforcement plan for hospitality, commerce and tourism (EUR 4.2 billion), consisting of measures related to commercial rentals, loan guarantees and tax deferrals, was introduced.

Finding the right balance between the protection of firms and workers, and their necessary adjustment to the new economic reality, as the pandemic evolves, will require a constant reassessment and adaptation of measures. This could require the phasing out or refining of some existing measures, in the absence of strict national lockdowns, as recovery commences.

The main measures to preserve employment and support household income were special short-time work schemes (ERTEs) and the extraordinary allowance for the self-employed. The former reached 3.6 million workers (23% of salaried workers) at the peak of the crisis (Figure 1.11, Panel A), but has declined, except in some regions and tourism-related sectors. In response to the subsequent waves, these policies were extended until 31 May 2021 and are likely to be extended further. Given the success of these schemes, the authorities plan to refine the system as an employment adjustment tool, as part of the national recovery plan.

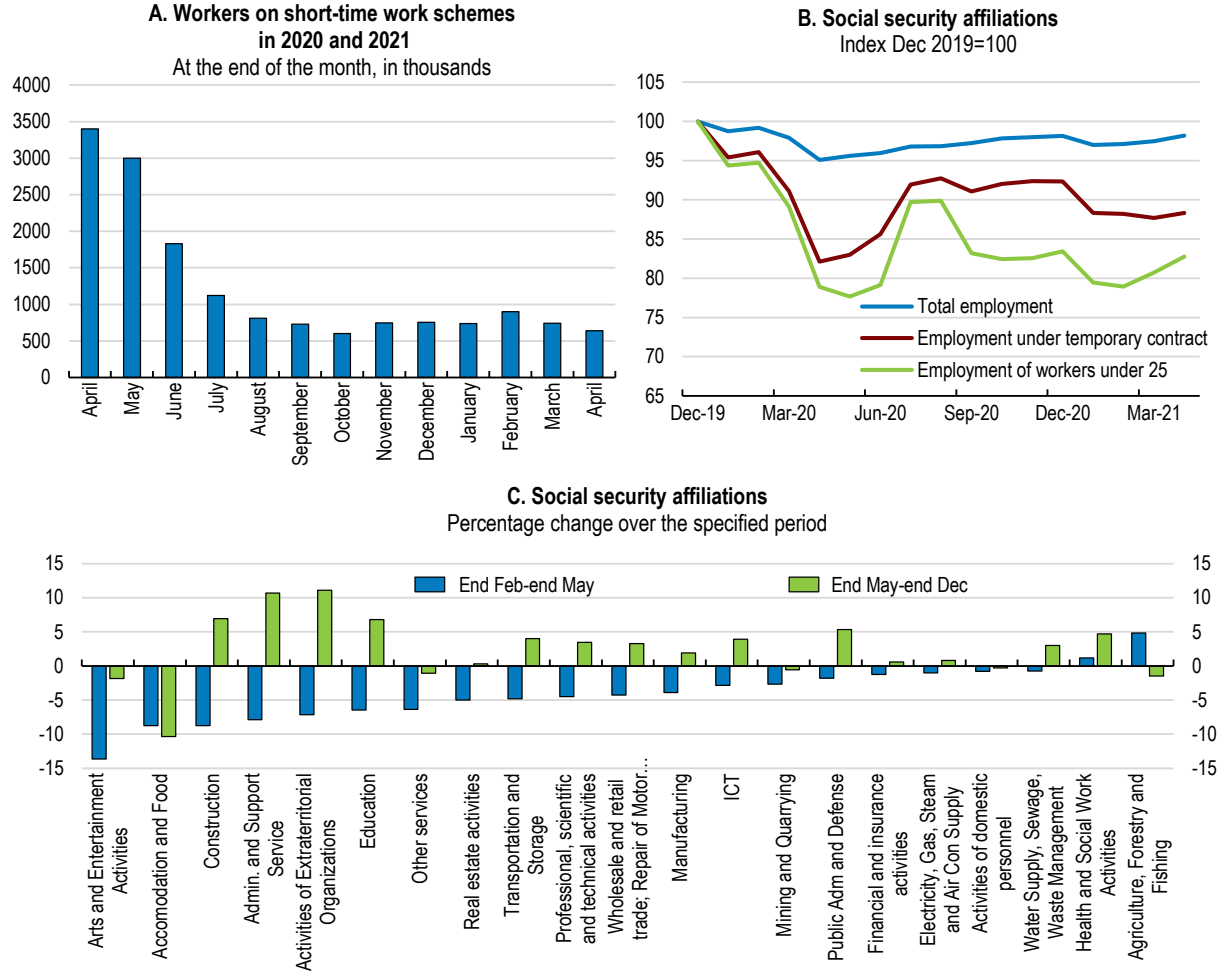
Over time, ERTEs were modified to increase incentives for a gradual return to work (higher social security contribution exemptions for reinstated workers than those that remain fully on ERTEs), to distinguish companies that are partially or fully affected by the containment measures, and to be targeted towards sectors most impacted by the pandemic. Such targeting of ERTEs should continue. The ability to maintain benefits when taking up a job at another firm could also be introduced to pave the way for a potential reallocation, if needed. Some features of the scheme could also limit the future uptake by vulnerable firms, as the prolongation of the crisis has increased insolvency risks. For example, firms are required to maintain employment for at least six months and if they fire one worker, they have to return all the aid they have received for all workers, not only those that were fired (de la Fuente et al., 2020[21]).

Ensuring that all workers on ERTEs, especially those in sectors facing the longest recovery periods, get training options is crucial. Since March 2020, one million workers on ERTEs have received some type of training, mostly in the hotel and catering, commerce and metal sectors. Half of this training was provided by firms receiving public funding through rebates. Since October 2020, workers on ERTEs are given priority for training, which is welcome. As some firms, especially SMEs, can face difficulties in providing training even under normal times (Chapter 2), there might be a larger role for public provision of training for workers on ERTEs. In addition, training priorities for firms and workers could differ in the sense that some workers might need to reallocate to other firms and sectors.

The impact of the crisis on labour markets, has been uneven across sectors and groups (Figure 1.11, Panels B-C), suggesting the need for more targeted interventions in the next phase of the recovery. Certain constrains on dismissals for reasons related to COVID-19, which are still in place, were introduced in March 2020. While these measures supported workers during the initial confinement period, strict limitations to economic dismissals may inhibit restructuring processes and slow down the recovery during post-confinement, when combined with generous ERTEs. Some workers could be locked in unviable companies instead of being taken care of by public employment services, which could offer re-training and other support. Labour mobility in terms of moving from sectors whose activity may remain subdued for some time to those that may be growing quicker (such as health care and online and delivery services) can also be impeded (OECD, 2020[22]). The dismissal restrictions should not be further extended and should be

replaced with targeted support to the most vulnerable. Temporary enhancement to the unemployment benefit system and more effective active labour market programmes would help.

Figure 1.11. The impact on labour markets varies with sector and worker characteristics



Source: Ministry of Inclusion, Social Security, and Migration.

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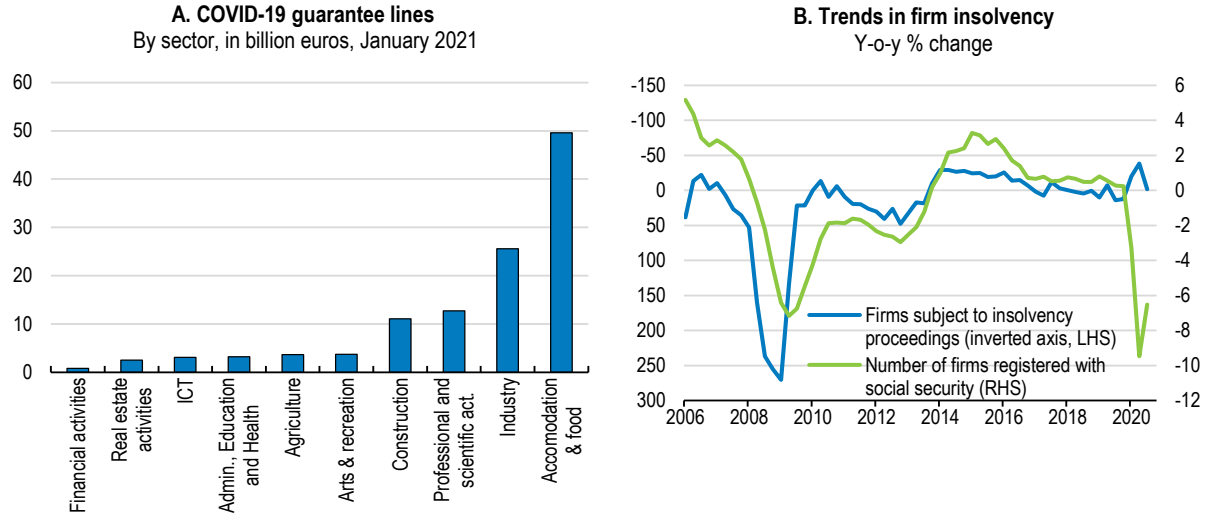
Firms, especially SMEs and the self-employed, were provided liquidity support through a number of measures, including a moratorium on tax debt and social security contributions, the deferral of tax payments, and the option to declare taxes based on an estimate of their current levels of activity, rather than on the volume of business in 2019. The most important policy tool was public loan guarantees (13% of GDP). While the size of the guarantee was less than in peer economies, the take-up rate of the initial EUR 100 billion scheme was much higher in Spain, reaching around 90% in March 2021, with SMEs and the self-employed accounting for 74% of the total, with a large sectoral variation (Figure 1.12, Panel A). In July 2020, a EUR 40 billion additional guarantee scheme geared towards new investment by viable firms was created.

Spain also introduced a temporary insolvency moratorium, which remains in effect until December 2021. Together with the public loan guarantees, this has limited a rise in insolvencies, according to official bankruptcy statistics (Figure 1.12, Panel B). A prolonged extension of this moratoria could prevent the restructuring of viable firms' debt or liquidation of non-viable firms and create a backlog of insolvency cases (García-Posada, 2020[23]). The prolonged existence of unviable firms can lower investment and

employment growth, discourage the entry of new firms and prevent the allocation of resources to more productive firms (Adalet McGowan, Andrews and Millot, 2017[24]). Hence, the moratorium should not be extended further, unless the recovery is disrupted. Instead, targeted direct aid to firms and modification to the restructuring processes to make them more efficient should be preferred.

Figure 1.12. Policies helped cushion some of the impact on firms



Source: Ministry of Economic Affairs and Digital Transformation; Ministry of Inclusion, Social Security, and Migration; and INE.

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While debt financing has succeeded in addressing immediate liquidity constraints, equity financing could play an important role in recapitalising firms, which suffer from financial difficulties solely due to COVID-19, but are likely to return to profitability in the future. Hence, the creation of the EUR 10 billion public equity fund to support the solvency needs of strategic firms and the EUR 1 billion recapitalisation fund for medium-sized firms (e.g. ordinary or participative loans) are welcome. Their effectiveness will depend on developing a credible exit strategy of public funds (mechanisms to incentivise all parties to wind down support when economic conditions improve) and monitoring the associated contingent liabilities (OECD, 2020[25]).

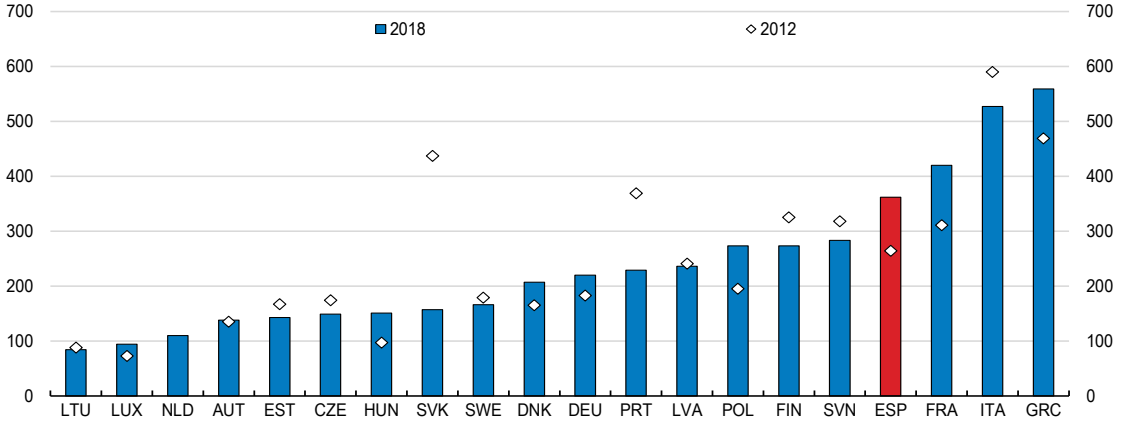
In March 2021, a new line of direct aid (EUR 7 billion) to enable regions to grant non-reimbursable aid to viable firms in the most impacted sectors, whose income fell by more than 30% compared to 2019, was introduced. The funds could be used for the payment of invoices with suppliers, fixed costs and other debt. The number of eligible sectors were expanded in April 2021. In addition, EUR 3 billion is allocated to help with the restructuring of financial debt related to the pandemic, by allowing the state to join the refinancing and restructuring of loans made under the public guarantee, which will be agreed by the financial institutions and their clients. The conditions of eligibility and a code for good practices are to be established soon. These measures are welcome and should be implemented without delay to prevent unwarranted insolvencies. For example, some regions might not be equipped with resources to identify swiftly viable firms that should be supported and clear guidelines for banks are required to start the potential restructuring of loans. These could be accompanied by other incentives for private creditors to restructure debt, such as tax incentives (e.g. tax exemption for creditors who forgive part of debt). Finally, if the crisis persists longer, there might be a need to increase the amount of funding for this type of direct aid.

At the same time, it will be important to address other remaining gaps in the insolvency regime, as efficient and speedy restructuring of viable firms in temporary distress can prevent their unwarranted liquidation and allow them to increase investment. One way to achieve this is the use of out-of-court procedures for restructuring processes, which is being planned as part of the transposition of the 2019 EU Restructuring and Insolvency Directive (Chapter 2). Even before the crisis, the estimated time needed to resolve litigious civil and commercial cases was high (Figure 1.13). In addition, evidence suggests a negative relationship

between judicial inefficiency (in terms of court congestion) and firm investment at the local level in Spain (Dejuán and Mora-Sanguinetti, 2019[26]). Hence, out-of-court restructuring processes should be promoted, especially for SMEs. For example, in 2020, the Netherlands adopted the Act on Confirmation of Private Plan, which modernises the Dutch insolvency law and introduces fast and flexible restructuring options, in response to the COVID-19 crisis.

Figure 1.13. The average time needed to resolve civil and commercial cases is high

First instance, in days



Source: EU Justice Scoreboard 2020 (database).

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Containing medium-term fiscal challenges and supporting employment for a sustainable recovery

A durable recovery will require improving productivity growth, by boosting digitalisation, innovation, and investment in intangible capital (Chapter 2), and creating high-quality jobs, by addressing structural problems in labour markets, such as high duality (below). These reforms can also contribute to improving fiscal sustainability in the medium-term, without derailing the economy, complementing fiscal and pension reforms. Box 1.2 quantifies the impact of some of these reforms discussed in this survey, which are quantifiable, on growth and fiscal balances.

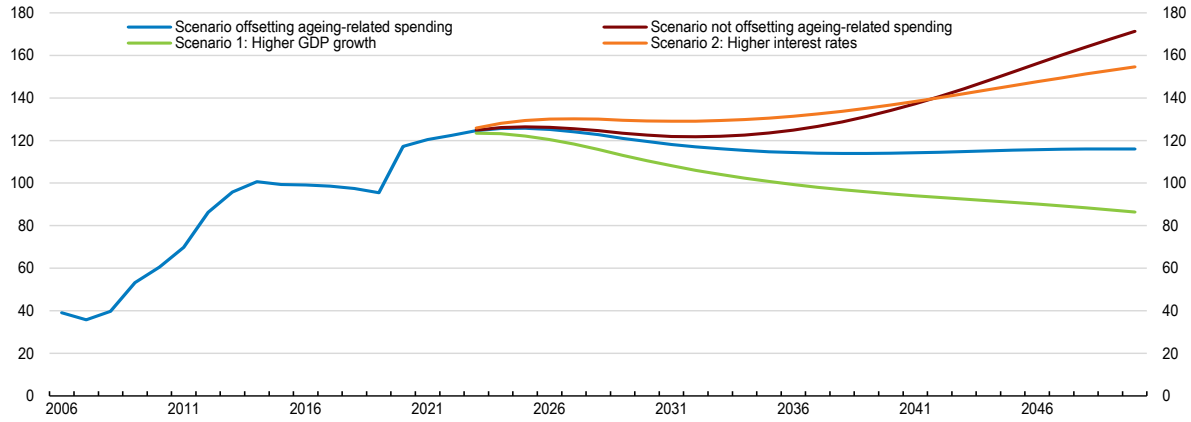
Addressing medium-term fiscal vulnerabilities

While fiscal policy should remain supportive until the recovery is firmly underway, as discussed above, lowering public debt as a share of GDP, which has increased to 120% in 2020, should be prioritised once economic growth is on a solid path. According to OECD simulations, which are surrounded by high uncertainty, Spain's public debt would only decline to 116% of GDP by 2050 in a scenario offsetting ageing costs, but rise to 171% if ageing costs are not offset (Figure 1.14). In a positive scenario of higher growth by 1 percentage point, the debt-to-GDP ratio would fall to 82%, highlighting the importance of structural reforms in facilitating a reduction in fiscal sustainability risks in the medium-run. While the low cost of financing decreases risks related to high public debt in the short-run, contingent liabilities from the public loan guarantees can exacerbate the spillover effects from the real and financial sectors to public finances.

In the medium-term, a credible and transparent fiscal consolidation strategy, including every level of government, is needed. This should be a gradual fiscal consolidation to ensure that economic recovery is not impeded, while bringing credibility to fiscal sustainability and lowering vulnerabilities to changes in financial market perceptions. The decline in the budget deficit between 2014 and 2019 was driven by nominal GDP growth and the fall in interest expenditures (Table 1.3). A gradual improvement in the structural deficit will be key to putting the debt path on a downward path.

Figure 1.14. The impact of the crisis on fiscal sustainability is projected to be large

Public debt, as a percentage of GDP



Note: The scenario offsetting ageing related spending consists of the Economic Outlook No. 108 projections up to 2022, and the long-term projections of the Economic Outlook No. 108 database afterwards, except for the primary balance, which is projected to improve gradually until 2028 and kept constant after. The "higher growth" scenario assumes higher real GDP growth by 1 percentage point each year compared to this scenario. The "higher interest rate" scenario assumes higher interest rate by 1 percentage point from 2022. The "without offsetting ageing costs" scenario includes European Commission projections for net total aging costs (net public pensions, long-term care and health costs, adding 3.5 percentage points of GDP to annual government spending in 2050). These estimates do not include the potential changes to the pension system discussed below, which will increase the size of aging costs, unless compensating measures are taken.
Source: Adapted from OECD (2020) Economic Outlook: Statistics and Projections (database); and Long-term baseline projections; European Commission (2018), The 2018 Ageing Report - Economic and budgetary projections for the 28 EU Member States (2016-2070).

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Table 1.3. Fiscal indicators

As a percentage of GDP

	2014	2015	2016	2017	2018	2019
Spending and revenue						
Total revenue	39.2	38.7	38.1	38.2	39.2	39.2
Total expenditure	45.1	43.9	42.4	41.2	41.7	42.1
Net interest payments	2.9	2.6	2.4	2.3	2.2	2.1
Budget balance						
Fiscal balance	-5.9	-5.2	-4.3	-3.0	-2.5	-2.9
Primary fiscal balance	-3.0	-2.6	-1.9	-0.7	-0.3	-0.8
Cyclically adjusted fiscal balance[1]	1.6	0.2	-0.6	-1.0	-1.6	-2.8
Underlying fiscal balance[1]	1.5	0.1	-0.6	-1.0	-1.6	-2.8
Underlying primary fiscal balance[1]	4.1	2.5	1.7	1.2	0.6	-0.8
Public debt						
Gross debt (Maastricht definition)	100.7	99.3	99.2	98.6	97.4	95.5
Net debt	80.9	80.0	81.5	79.9	78.6	82.8

1. As a percentage of potential GDP. The underlying balances are adjusted for the cycle and for one-offs.
Source: OECD (2021), OECD Economic Outlook: Statistics and Projections (database).

Box 1.2. Potential impact of reforms on growth and the fiscal balance

The impact of some key structural reforms proposed in this *Survey* are estimated in Table 1.4 using historical relationships between reforms and growth in OECD countries. The estimates are illustrative.

Table 1.4. Potential impact of selected proposed reforms on GDP per capita

Effect on the level of GDP (through employment and productivity)

Policy	5 year effect	10 year effect
Continue to expand the supply of affordable and high-quality childcare facilities	0.3%	0.5%
Better target R&D support to young and innovative firms	0.1%	0.3%
Link retirement to life expectancy	1.0%	1.4%
Higher spending on training in active labour market policies and profiling tools	0.2%	0.3%
Total	1.6%	2.5%

Note: The calculations are based on a 25% policy change scenario, which corresponds to increasing spending on childcare from 0.5% of GDP, business R&D from 0.7% of GDP and ALMP spending per unemployed as a share of GDP per capita from 15%. The increase in effective retirement age is estimated to be 1.5 years.
Source: OECD calculations based on (Égert and Gal, 2017[27]).

Table 1.5 quantifies the illustrative direct gross fiscal impact of selected recommendations included in the Survey. A number of recommendations (e.g. efficiency gains in public spending) are not quantifiable in terms of their fiscal impact and there will be additional revenues associated with higher GDP induced by structural reforms.

Table 1.5. Illustrative direct fiscal impact of selected recommended reforms

Reform	Fiscal impact (savings (+)/ costs (-)) (% of GDP)
Increase education spending on primary and secondary education and continue to expand the supply of affordable and high-quality childcare facilities	-1.0%
Boost active labour market policies	-0.3%
Link retirement age to life expectancy	+0.9% by 2050
Increase in consumption and environmental taxes, with flanking measures to support poor households most affected costing about one half of the increase in revenues	+0.3%

Note: They are based on the following assumptions: *i)* increase in government spending on primary and secondary education to the OECD average of 3.1% and on childcare to the OECD average of 0.6% ; *ii)* an increase in ALMP spending by 0.3% of GDP; *iii)* the estimated change in public pension spending in line with an increase in retirement age with life expectancy; *iv)* an increase in VAT and environmental taxation as a share of GDP to close half the gap to the EU average (from 6.6% to 6.9% of GDP and from 1.8% to 2.1% of GDP, respectively), with flanking measures to support poor households most affected costing about one half of the increase in revenues.
Source: OECD Secretariat and AIReF.

Increasing the effectiveness of the tax system

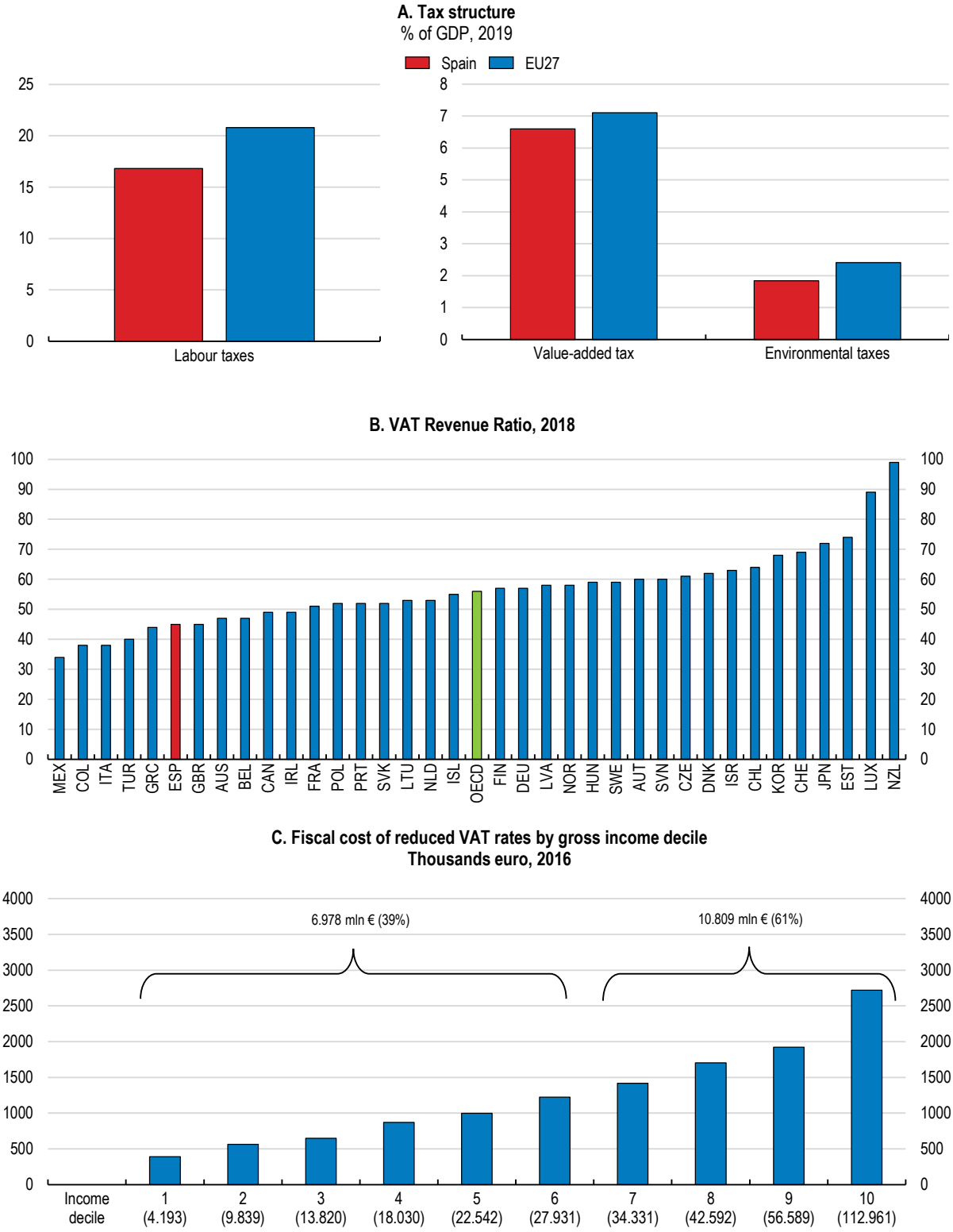
A number of tax benefits, due to numerous exemptions, deductions and special reduced rates, lead to foregone revenues and distort the effectiveness of the tax system in Spain (AIReF, 2020[28]). A tax reform could contribute to lowering the deficit (together with improved expenditure efficiency as discussed below) and debt, while helping to finance additional spending to achieve social, distributional and environmental objectives. However, major tax reforms should wait until the recovery is firmly underway, and be accompanied by targeted social transfers to minimise their impact on low-income households. Nevertheless, progress can already be made on the design to ensure effective implementation. Hence, the formation of an expert committee for tax reform in April is welcome.

Raising revenues from value-added (VAT), excise and environmental taxes, which are lower than the EU average (Figure 1.15, Panel A), as recommended in the *2018 Economic Survey of Spain,* would limit distortions to economic growth. For example, the reduced rates in VAT lower the efficiency of VAT collection and those that disproportionately benefit higher income deciles should be gradually aligned to standard rates (Figure 1.15, Panels B-C; (AIReF, 2020[28])). In terms of environment taxation, there is room to improve carbon pricing, both for road and non-road emissions (Figure 1.16). For example, the transport sector accounted for 26% of emissions in 2018, but transport taxes are only 12.7% of total environmental taxes, compared with the OECD average of 23%. Hence, tax rates on fuel for both types of emissions can be raised.

The Budget 2021 includes increases to personal income tax for high-incomes (annual income above EUR 300 000), the tax rate applicable to savings income (dividends, interest and certain capital gains exceeding EUR 200 000), and the VAT rate on sweetened drinks, and a reduction in tax exemptions from 100% to 95% for dividends and capital gains from foreign subsidiaries. A law on prevention and fight against fraud, a 15% tax on Real Estate Investment Trusts, a waste tax and a tax on non-reusable plastic are also under discussion in the Parliament. It is important to ensure that any tax increase does not impede the economic recovery in the short-run.

Since 2013, Spain had been working with some other EU member states (Austria, Belgium, France, Germany, Greece, Italy, Portugal, Slovakia and Slovenia) for the adoption of a Directive for the implementation of a financial transaction tax (FTT). In the absence of an agreement, the authorities introduced a FTT of 0.2% on the purchase of shares of Spanish companies with a market capitalisation of more than EUR 1 billion, which came into effect in January 2021. This tax is similar to the one adopted in France and Italy in 2012 and 2013, respectively. However, such taxes can be distortionary by increasing misallocation of capital and create high administrative costs, while the expected revenue is relatively low at less than 0.2% of tax revenues. Lack of international harmonisation creates a risk that Spanish firms can try to become tax residents in another jurisdiction. Similarly, a digital services tax of 3% for firms with a large turnover in Spain came into effect in January 2021. While this tax will raise revenues, it can create distortions in the absence of international coordination. In this context, cooperation with the ongoing OECD/G20 BEPS project, which aims to find a global solution to the tax challenges related to the digitalisation of the economy, is key (OECD, 2020[29]). Hence, the effects of these taxes should be monitored closely and efforts for international coordination should continue.

Figure 1.15. There is room to increase revenues from value-added and environmental taxes



Source: Eurostat (2020), Tax Revenue Statistics; OECD (2020), Consumption Tax Trends 2020; and AIReF (2020), Spending Review.

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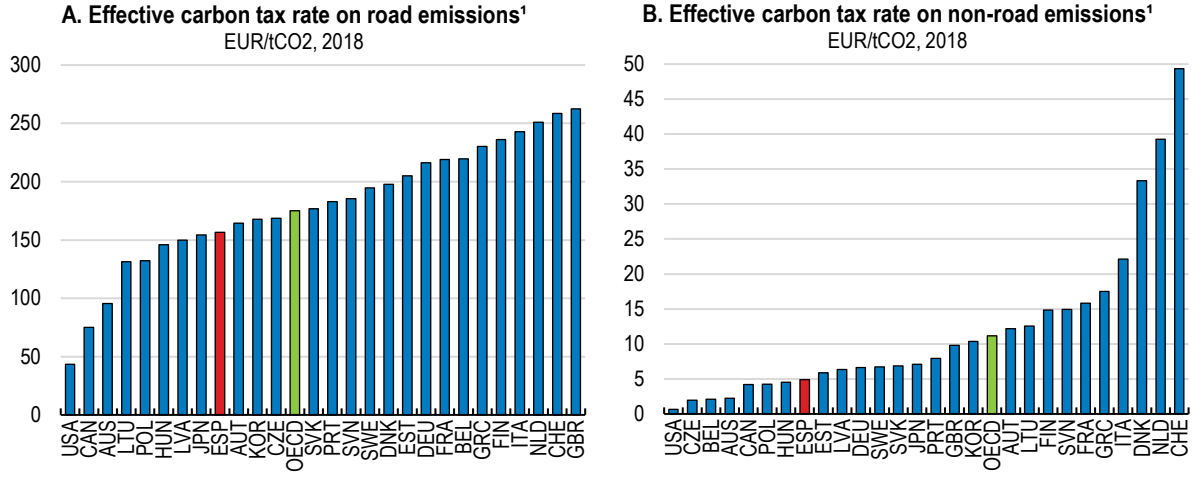
Figure 1.16. Carbon pricing can be improved



1. 2018 tax rates as applicable on 1 July 2018. CO_2 emissions are calculated based on energy use data for 2016 from IEA (2018), World Energy Statistics and Balances. Emissions from the combustion of biofuels are included. The scale of the vertical axis differs between panels.
Source: OECD (2019), Taxing Energy Use 2019: Using Taxes for Climate Action, OECD publishing, Paris.

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Improving public spending efficiency

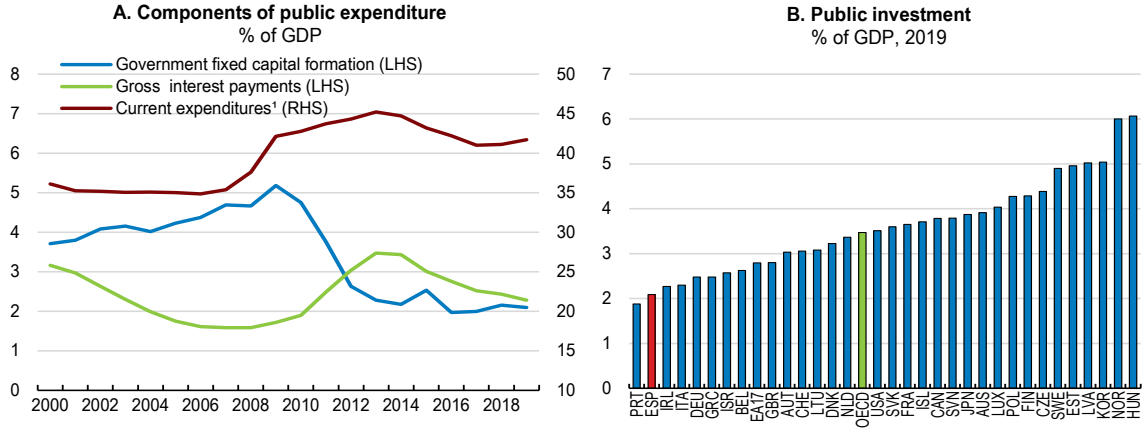
Spain experienced a decline in the quality of public spending mix in the aftermath of the global financial crisis, with public investment as a share of GDP among the lowest in the OECD in 2019 (Figure 1.17; (Bloch and Fournier, 2018[30])). This likely reflects the fact that it is easier to cut investment than current spending to meet short-term budgetary pressures. For example, government spending on R&D decreased from 0.64% of GDP in 2009 to 0.47% in 2018. Increasing public investment, especially in areas of digitalisation, innovation, environment, and education, can not only directly boost productivity, but also generate spillover private investments (Chapter 2).

In the near-term, the Next Generation EU funds will help increase public investment. Spain is eligible to receive EUR 154 billion (11% of 2019 GDP, in current prices) in 2021-26, of which EUR 82 billion are in transfers. Spain's national recovery plan, approved in April 2021, outlines the envisaged use of these funds, in the next three years (Government of Spain, 2021[31]). Ecological transition (e.g. retrofitting of buildings, creating charging stations for electric vehicles, and upgrading water infrastructure) and digital transformation (e.g. digital skills, digitalisation of public administration, healthcare, and agriculture sectors and SMEs) represent 39% and 29% of the total investment, respectively. The other two main pillars of the plan are to promote social cohesion, by addressing labour market challenges and improving housing affordability, and gender equality (Box 1.3). The plan outlines a large number of reforms in many areas recommended in past surveys and discussed in this one, but the design of policies to achieve these outcomes will be crucial. To better make use of these funds, prioritisation of the investments and reforms that facilitate long-term growth is key. For example, the transposition of the EU Directive on insolvency should be brought forward. Aiming at political and social consensus on reforms would help ensure that reforms are long-lasting, although it should not unduly delay necessary reforms in case such consensus cannot be reached.

The Budget 2021 already includes the use of EUR 26.6 billion of these funds, with 50% allocated to public investment, 30% to assistance for private sector investment and 20% for current spending. These include increases for health (reinforce primary care and buy vaccines), education (including scholarships and modernisation of vocational education and training), active labour market policies, social spending on dependency, child poverty and gender policies (housing and minimum income) and spending on infrastructure, R&D and innovation, and support to SMEs. Sectoral policies to decarbonise the industrial and energy sectors and support the tourism and retail sectors are also included. Depending on fiscal

multipliers and absorption capacity, the estimates for the effect on GDP in 2021 vary around 1.5% (Bank of Spain, 2020[32]; AIReF, 2021[33]). The government estimates the plan to increase GDP by 2% on average each year and create 800 000 jobs in the period 2021-23 (Government of Spain, 2021[31]; Government of Spain, 2021[34]).

Figure 1.17. Public investment has declined in the past decade



1. Current expenditures include government final consumption, social security benefits, property income and other outlays.
Source: OECD (2020), OECD Economic Outlook: Statistics and Projections (database), November.

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The uncertainty regarding the absorption of funds in 2021 is high. While Spain is expected to fully absorb the structural EU funds of the 2014-20 period by 2023, which is the deadline for submitting claims for expenditures incurred until 2020, they had only submitted to the EU 45% of their allocated funding by December 2020, which suggests administrative burdens and slow absorption. In December 2020, a new law was introduced to simplify multiple regulations on public procurement and budgetary procedures to reduce red tape, streamline administrative processes and deadlines. To enable the public administration to increase its capacity, rules in the creation of temporary units were eased. To improve public-private collaboration, a list of planned strategic projects and a registry of interested parties was created. These steps are welcome, and their effectiveness should be assessed, and further changes should be made, if needed, over time.

A good governance system with cooperation across levels of government, which is outlined in the Plan, will be key. In December 2020, Spain introduced a multi-level governance system (Official Bulletin, 2020[35]). A commission of ministries will be chaired by the President, which will be supported by a Technical Committee, placed in the Ministry of Finance, the central body for the execution of the plan. Another committee will bring together representatives from different levels of government to increase cooperation and coordination. As regions will be allocated around half of the funds, this set-up is needed and coordination across levels of government is one of the pillars of effective public investment in decentralised economies. It is important to ensure that this multi-level governance system does not lower the speed of absorption, while ensuring accountability.

A recent cross-country OECD study on the governance of the EU structural funds highlights a number of important lessons, such as encouraging stakeholder involvement through the whole process and mobilising private actors and financing institutions (OECD, 2020[36]). In this context, the involvement of the private sector, social partners and other relevant stakeholders in the implementation of the plan should be further clarified, since additional private investment can boost the effectiveness of public investment. In addition, it will also be important to design transparent procedures and criteria for prioritisation of projects and a commitment to some cost-benefit analysis. Recent evaluations found gaps in the design and execution of infrastructure investment in Spain (AIReF, 2020[37]; OECD, 2020[38]), and these challenges are likely to be higher for investment in digitalisation and intangible assets.

Box 1.3. Spanish Recovery, Transformation and Resilience Plan

The Plan contains 110 investments and 102 reforms to strengthen and modernise the Spanish economy, built around 10 policy levers (see Annex B for further details). The main policy areas, some of which are covered in depth in the *Survey,* are as follows:

- **Business environment:** Firm entry, growth and exit will be facilitated by eliminating obstacles to growth, improving access to finance, removing administrative barriers, improving the functioning of the internal market and reforming the insolvency and justice systems to speed up firm restructuring. The national framework for competition protection will be reinforced and a new public-private venture capital fund to promote start-ups will be created. The Spain Industrial Policy 2030 strategy aims to modernise strategic sectors, especially tourism.
- **Human capital:** A Digital Skills Plan, including the provision of digital equipment to schools and the training of students and teachers, was approved in January 2021. The 2020 Education Law will improve the design and application of new curricula. The Strategic Plan for VET will improve the VET degrees catalogue, the flexibility and accessibility of the system and the recognition and accreditation of skills. A reform of the university system will promote access and the reskilling and mobility of staff and improve the governance of universities.
- **Technological capital:** Digital Agenda 2025 brings together reforms in the areas of connectivity, 5G, Artificial Intelligence, digital skills, the digitalisation of the public administration (labour market, justice and health) and SMEs, among others. Reforms will also increase cyber-security and digital rights. Spain Entrepreneurial Nation Agenda will promote innovative business association clusters and managers' training.
- **Innovation:** Reforms and investment are planned to increase R&D investment to 2% of GDP *via* institutional reform and strengthening capacities through evaluation, new innovation tools and digitalisation. National health system will also be modernised further.
- **Energy and environment:** The main priorities are to redirect the productive model, promote decarbonisation, energy efficiency, and the deployment of renewable energy, electrification of the economy, development of energy storage and the circular economy. Conservation and restoration of marine and terrestrial ecosystems, improving the management of irrigation, livestock farming and the revaluation of agricultural land, promoting the digitalisation and green value chains, retrofitting of buildings and upgrading water infrastructure are also planned.
- **Labour markets:** A package of 17 complementary structural reforms are planned to simplify the menu of contracts, transform the ERTEs, streamline hiring incentives, modernise the collective bargaining system, regulate subcontractors and digital workers, and modernise active labour market policies, especially digitalise public employment services.
- **Territorial cohesion and social capital:** Renovation and improvement of the housing stock, facilitation of urban mobility programmes (e.g. intermodal transport hubs, modernise infrastructure), digitalisation of government, improving the efficiency of the justice system, developing a new system to support the vulnerable (e.g. elderly care) to complement the newly introduced minimum income guarantee scheme are planned.
- **Gender equality:** Revamping the childcare system, strengthening regulations to narrow the gender pay gap and equalising maternity and paternity leave are priorities.
- **Fiscal reforms:** Measures to fight against tax fraud and informal economy, tax on digital services and financial transaction services have already been implemented. A reform of environment taxes is also planned. An expert committee for tax reform was set up in April. The pension system will be reformed to ensure purchasing power, separate sources of funds, increase the effective retirement age, reform the self-employed pension system and boost supplementary pension systems. Spending reviews will be reinforced.

In the medium-term, it is important to improve the efficiency of public spending to continue to invest in productivity-enhancing activities and address challenges from population ageing and climate change after the recovery plan time horizon. In this context, 11 spending reviews conducted by the Fiscal Council (AIReF) in 2018-20 identify room to improve efficiency in a number of areas, such as pharmaceuticals, active labour market policies (ALMPs) and hiring subsidies. The recommendations of the reviews should be an integral part of the medium-term fiscal plan.

Sub-national governments accounted for 70% of public investment in 2018, and they are responsible for a large part of public spending in a number of areas, especially health and education (Table 1.6). The recent spending reviews mostly covered public expenditure at the central government level, but also highlighted large regional heterogeneities in spending efficiency (e.g. ALMPs), which can contribute to regional disparities. Hence, spending reviews should be made regularly at each level of government, but this is often impeded by the lack of data collection and quality in some regions that makes evaluation difficult (AIReF, 2019[39]).

In general, more could be done to ensure that a lack of consistent and reliable information on regional policies and evaluation system does not lower the benefits of decentralisation (OECD, 2016[40]). Hence, systemic evaluation of policies at all levels of government should be facilitated. An ongoing OECD project is assessing what the ideal institutional set-up to implement these goals should be in Spain, given the decentralised nature of the economy and based on international best practices. For example, the independence of the evaluator is key. One option would be to extend the mandate of the Fiscal Council. In this case, it would be important to create a formal mechanism to ensure that policy recommendations of the evaluations are reflected as changes in policies, with an impact on spending and fiscal balances within a reasonable time frame.

Table 1.6. Division of responsibilities across different levels of government

Distribution of public spending as percentage of GDP, 2017

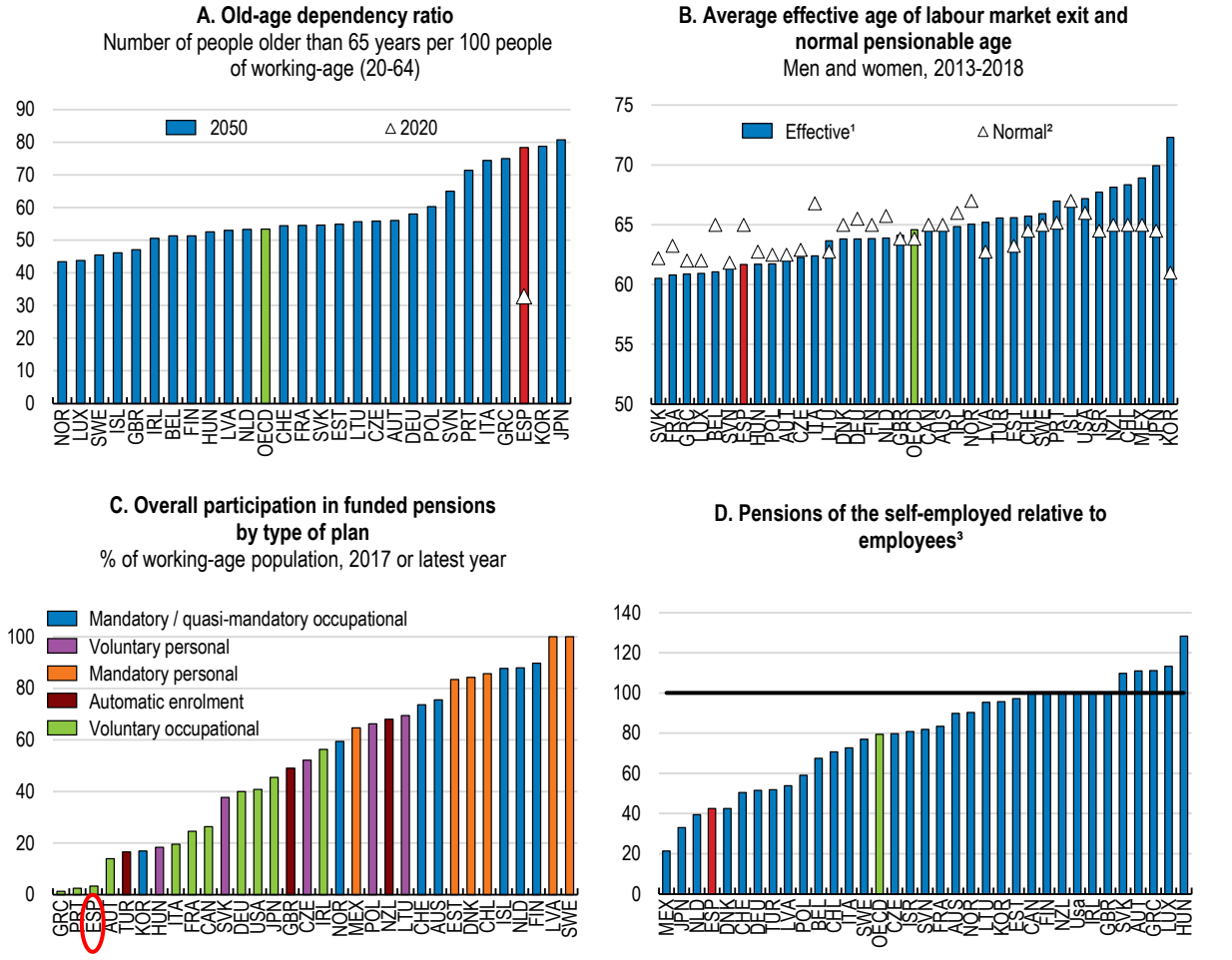
	Central	Regional	Local
General public services (excluding transfers to other levels of government)	3.6	1.1	1.0
Defence and public order and security	1.9	0.4	0.5
Health	0.2	5.5	0.1
Education	0.1	3.6	0.2
Transfers to other levels of government	9.7	1.5	1.1
Others (Housing, Culture, Economic Affairs, Environment, Social Protection)	3.3	2.9	3.0
Total	18.8	15.0	5.9

Note: Spain has a three-tier system with central, regional and local governments. There are 17 self-governing autonomous regions, 2 autonomous cities, 50 provinces and more than 8 119 municipalities. The map of competences is regulated in the Spanish Constitution and while some are exclusively managed by the central government, most of them are shared between the central and regional governments. Specifically, the central government passes basic legislation and regions regulate and implement their own laws.
Source: The General Comptroller of the State Administration (IGAE).

Addressing pressures from population ageing

The current pension spending as a share of GDP, at 10.9%, in Spain is above the OECD average of 8%, but below some European peer economies. However, population ageing is projected to increase long-term fiscal sustainability pressures (Figure 1.15), with a large rise in the old-age dependency ratio by 2050 (Figure 1.18, Panel A). Spain has undertaken major pension reforms in 2011 and 2013 to address this challenge, notably to raise the effective retirement age and reduce the replacement ratio (OECD, 2018[3]).

Figure 1.18. Pension reform is needed



1. The average effective age of retirement is defined as the average age of exit from the labour force during a 5-year period. Labour force (net) exits are estimated by taking the difference in the participation rate for each 5-year age group (40 and over) at the beginning of the period and the rate for the corresponding age group aged 5-years older at the end of the period. The official age corresponds to the age at which a pension can be received irrespective of whether a worker has a long insurance record of years of contributions.
2. The normal retirement age is the age at which an individual can retire in 2018 without any reduction to their pension having had a full career from age 22.
3. Theoretical pensions of a self-employed worker relative to an employee having both a taxable income (net income or net wage before taxes) equal to the average net wage before taxes, for individuals with a full career from age 22 in 2018 and contributing only the amount that is (quasi) mandatory to pensions
Source: OECD (2019), Pensions at a Glance and OECD (2020), Pensions Outlook.

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Two main elements of the 2013 reform have created tensions regarding their social acceptability and have been suspended since 2018, and are planned to be permanently changed, following the main principles for pension reform agreed by the parliamentary committee on pensions (Toledo Pact) in November 2020. First, the sustainability factor (adjustment of the initial pension level to changes in life expectancy), which was temporarily suspended until 2023, will not be reinstated. Second, contributory pension benefits have been increased in line with CPI (1.6% in 2018-19 and 0.9% in 2020) instead of the reform mechanism (Index for Pension Revaluation), which would have implied a growth of 0.25%, based mainly on the structural balance of the pension system. One of the key elements of the pension reform package of the government is to permanently relink pension increases to inflation to preserve the purchasing power of pension benefits and introduce a new adjustment mechanism.

Not applying the indexation mechanism and the sustainability factor implies an increase in expected pension spending as a share of GDP from 11.9% to 15.1% in 2050 (Table 1.7) (AIReF, 2020[41]). It is crucial that adequate and socially acceptable measures to ensure the financial sustainability of the pension system are taken swiftly. The government's proposed pension reform package is to bring the effective retirement age closer to the legal age, a review of the retirement pension and maximum contribution bases, the progressive convergence of different pension regimes (e.g. self-employed), and the promotion of complementary collective pension systems.

Incentives to retire early should be reduced as the average labour market exit age in 2018 was 61.7, below that of 64.6 in the OECD (Figure 1.18, Panel B). The authorities are currently assessing existing incentives with a view to modify them and are considering establishing benefits for firms that keep older workers. The system does not sufficiently acknowledge long contributory careers and does not incentivise extending working lives after the relevant periods of contributions have been attained, as discussed in detail in the *2018 Economic Survey of Spain*. Hence, early retirement schemes should be further disincentivised, and the number of years of contributions required to gain a full pension should be lengthened. In addition, although the previous reforms raise the statutory retirement age over time by two years, this represents only the approximate improvement in life expectancy at age 65 since 2000. The statutory retirement age should therefore eventually be linked to changes in remaining life expectancy, which is the case in Denmark, Finland and Portugal.

Table 1.7. Pension expenditures: different scenarios

Pension spending, % of GDP, 2019: 10.9	**Pension spending, % of GDP in 2050**
Baseline projections	14.2
Keeping the 2013 reform that benefits are indexed to the Index for Pension Revaluation, set at 0.25%	11.9
Suspending the sustainability factor (adjustment of the initial pension level to changes in life expectancy): currently temporarily suspended until 2023	15.1
Delay effective retirement age to 66	13.4
Delay effective retirement age to 67	12.6
Increase calculation period for pensions to 35 years	13.6
Potential structural effects of COVID-19: lower potential growth and productivity convergence	14.9
Lower migration	16.1
Higher unemployment and lower activity rates	15.4

Note: The baseline projections assume that pensions are linked to inflation, while the sustainability factor is maintained. It incorporates the parameters of the 2011 reform and calculation period for pensions to 25 years and a central scenario of macroeconomic and migration projections by the AIReF.
Source: (AIReF, 2020[41]).

Policies to extend working lives should be accompanied by measures to enhance older workers' incentives and ability to stay in the labour market (e.g. lifelong learning). Some potential structural changes due to COVID-19 could also help delay retirement decisions. Evidence based on US data suggests that older workers having access to flexible working hours and telecommuting options tend to delay retirement (Hudomiet et al., 2019[42]). Indeed, in Spain, in 2018, those aged 55 over were 4.5 times more likely to telework than those aged 15-24 (INE, 2020[43]). Hence, the new teleworking law of September 2020 is welcome, as it creates flexibility in terms of working conditions. Mechanisms that ensure firm-level flexibility can also help.

Total assets in private pensions funds is 9% of GDP in Spain, much lower than the OECD average of 36%, and participation rates in voluntary occupational plans are low (Figure 1.18, Panel C). The Budget 2021 plans to promote company-based plans by raising their contributions exempt from taxation, while lowering those on private plans. Greater choice of pension scheme providers and investment options available through employers was recommended in the *2018 Economic Survey of Spain*. It is also important to

encourage non-standard workers to join funded pension plans, through applying the same enrolment rules to all workers, facilitating access to plans in the workplace, and offering dedicated retirement savings products (OECD, 2020[44]). Part of the new pension reform proposal is the creation of a new public pension fund, which can also help SMEs facing barriers in generating such plans themselves.

The pension contribution rates for the self-employed remain low, compared to standard employees, which reduces their entitlement to adequate benefits. They are allowed to make flat rate contributions and can choose their contribution base beyond a minimum threshold of 42% of the average wage, irrespective of actual income. In June 2020, 85.3% of the self-employed opted for the minimum pension contribution. Consequently, in the full-career case, the theoretical future pension of the self-employed is 42% of the pension of employees with similar earnings (Figure 1.18, Panel D) (OECD, 2019[45]), which could raise old-age poverty. Contribution rates between the self-employed and employees should be harmonised, for example by ensuring that the former pay contributions based on the actual rather than the contribution base of their choice.

Table 1.8. Past OECD recommendations on fiscal and pension policies

Recommendations in past surveys	Actions taken since 2018
Abolish reduced value-added tax rates that are regressive.	The Budget 2021 increases the VAT on sweetened beverages. A spending review has identified areas for reform.
Increase taxation of fuels to better reflect emissions of CO_2 and other pollutants.	The registration tax is modified with the implementation, in 2021, of the new protocol for measuring consumption and CO_2 emissions of vehicles.
Make the expenditure rule the main rule and link it to the debt ratio targets.	No action taken.
Further extend the pensionable earnings reference period and the number of years of contributions required to gain a full pension.	No action taken.
To increase the flexibility of combining work and pensions, do not reduce pension payments and allow additional pension entitlements to be earnt.	No action taken.
Facilitate greater choice of both pension scheme providers and investment options available through employers.	The Budget 2021 reduces the exemption limit of private pensions plans, while raising the contributions exempt from taxations of employer plans. Efforts to raise the transparency of the management of individual pension systems, so that their costs do not lead to negative returns for savers, continue.

Boosting employment and job quality

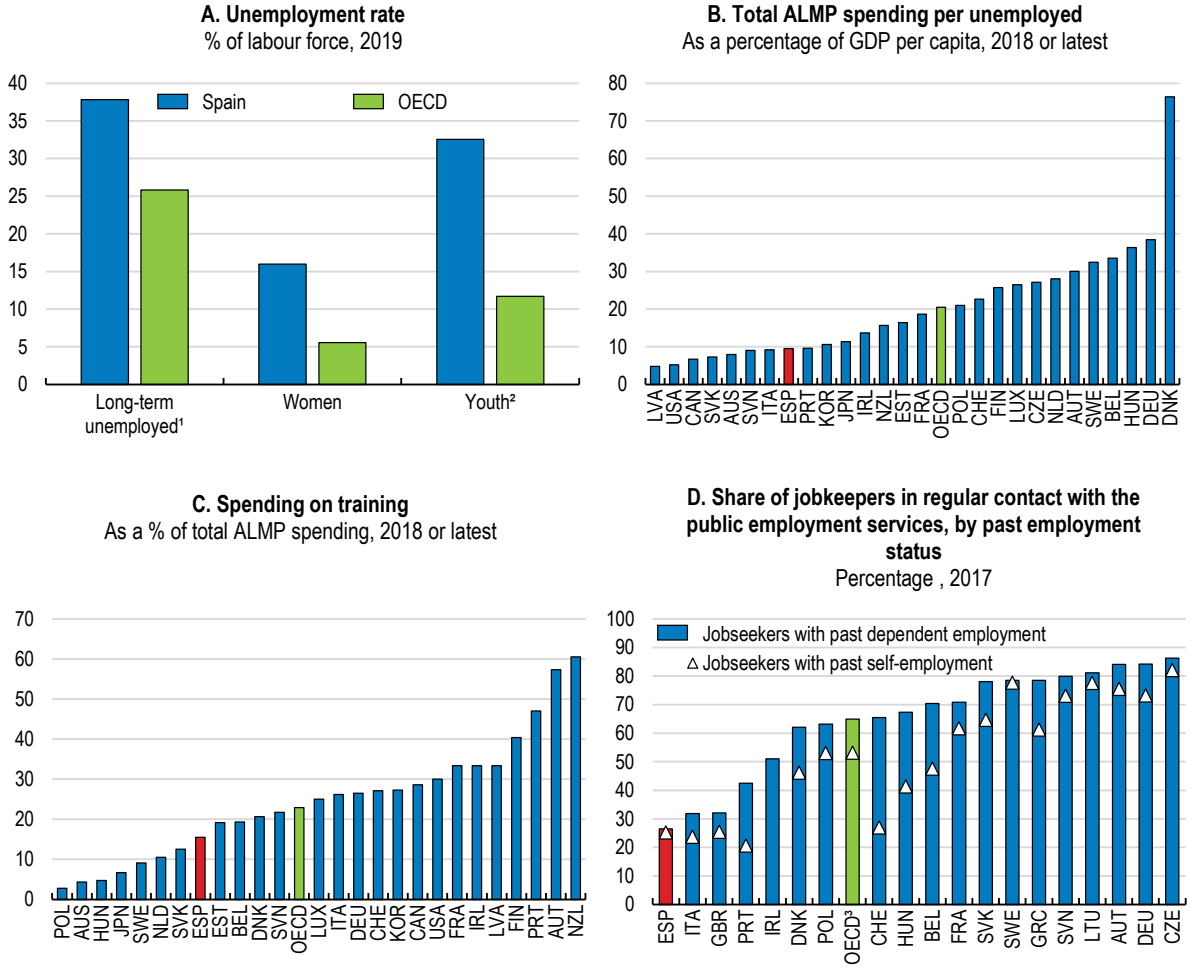
Active labour market policies

The youth and the long-term unemployment rates were among the highest in the OECD before the crisis, but spending on active labour market policies (ALMPs) per unemployed remained low in international perspective (Figure 1.19, Panels A-B). Given the uneven effect of the crisis on different sectors and firms, there might be a need to reallocate some displaced workers to those with better medium-term prospects (those less impacted by containment measures). Sectors most affected by the crisis in Spain have a greater concentration of less-skilled workers, who tend to perform less IT, numerical, reading and writing-related tasks (Anghel, Lacuesta and Regil, 2020[46]), highlighting the importance of training. In November 2020, the government announced that workers on ERTEs would have priority in access to training, which is welcome. Effective ALMPs are key to facilitate this transition for these and displaced workers, but a recent evaluation by the Fiscal Council has highlighted a number of gaps (AIReF, 2019[39]), so it is appropriate that the recovery plan includes the modernisation of ALMPs.

The share of ALMP spending on training remains low, which can be a barrier to the up-skilling of the labour force (Figure 1.19, Panel C). In addition, training programmes are highly uneven across regions and are not evaluated sufficiently in terms of their effectiveness. Hence, the quality of training and its connection to the labour market should also be raised by increasing the coordinating role of public employment services (PES) with employers and training providers. In Spain, regions limit the entry of training providers

from other regions, which can lower quality and increase costs. Increasing the allocation of ALMPs towards training and removing barriers to competition of training centres, as recommended in the *2018 Economic Survey of Spain,* would help. Work-place training provided by employers could also be improved (Chapter 2). A number of OECD countries (Austria, Denmark and the Netherlands) have accelerated the use of digital channels to provide timely and relevant training, and explore the options of more informal methods of training, such as posting training videos, reading materials and tests that jobseekers can use directly on PES websites (OECD, 2020[47]). The available digital tools for training in Spain should be further extended.

Figure 1.19. There is room to improve active labour market policies



1. People who have been unemployed for 12 months or longer, as a percentage of unemployed.
2. 15-24 year olds.
3. The average of the countries shown on the figure.

Source: OECD (2020), Labour Force Survey (database); OECD (2020), Statistics on Labour Market Programmes (database); and OECD (2019), Employment Outlook.

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The use of profiling tools can help target more costly and intensive services and incentives to jobseekers who are more at risk of becoming long-term unemployed, allow interventions at an earlier stage, and tailor services more closely to the individual needs of jobseekers. Statistical profiling tools rely on statistical models to predict labour market disadvantage as opposed to rule-based profiling, which uses eligibility criteria, or caseworker-based profiling, which relies more on judgement, to classify jobseekers into client

groups. As the availability of real-time data has increased, together with the necessary computing power, the use of statistical profiling tools has become more widespread across the OECD (Desiere, Langenbucher and Struyven, 2019[48]). Profiling tools would be particularly useful in Spain to reach workers affected by the pandemic in a timely manner, and could help counsellors develop tailor made activation programmes to those identified as high-risk jobseekers by the profiling model.

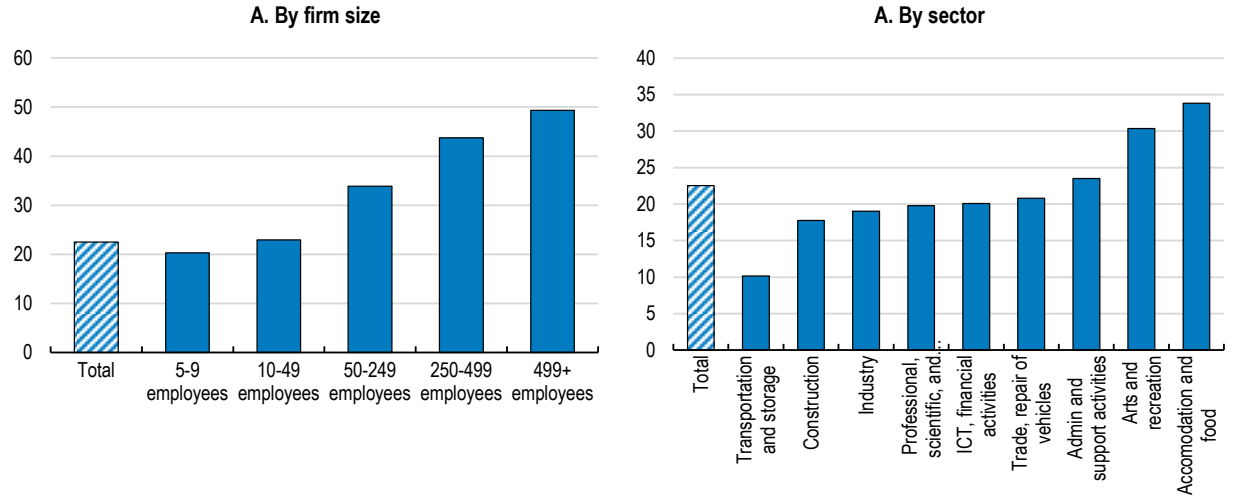
The effectiveness of ALMPs largely relies on the capacity of the regional public employment services (PES), but the share of jobseekers in regular contact with the PES or who find their job with PES involvement are among the lowest in the OECD (Figure 1.19, Panel D). Furthermore, the efficiency of the regional PES is very heterogeneous. Despite the move towards the allocation of funds to regional PES based on evaluations according to pre-defined performance indicators, the allocation continues to concentrate on the number of job-seekers (AIReF, 2019[39]). Establishing a clear framework for effectiveness and common impact assessment should be prioritised. This requires better data collection and digitisation of information, which are also highly uneven across regions. Hence, the 30% increase in the resources allocated to ALMPs in the Budget 2021, with plans to increase training for digital skills and digitalisation of PES, is welcome. In April 2021, the distribution of EUR 2.1 billion to regions to modernise their ALMPs and PES was approved. Part of this funding will be allocated to the training of workers on ERTEs and the youth.

Collective bargaining and wage adaptability

Increased labour market flexibility has played a role in promoting the job-rich economic recovery before the pandemic, without a substantial impact on overall poverty, even if it might have reduced average hours worked and increased in-work poverty (IMF, 2020[12]). In particular, the introduction of the priority of firm-level agreements over sectoral and regional agreements and opt-outs from collective agreements have increased wage adaptability. In general, such systems can increase worker reallocation and productivity growth (OECD, 2018[49]). The share of firm-level agreements remained low at around 6% in 2019. However, 22.5% of firms have used internal flexibility measures (remuneration below what was initially agreed or reduction of working hours) in 2019 (Figure 1.20), which were especially used in very large firms and in the hospitality and arts sectors.

Figure 1.20. The use of internal adaptability measures by firms can help during crisis times

Percentage of firms in each category, 2019



Source: Ministry of Inclusion, Social Security, and Migration.

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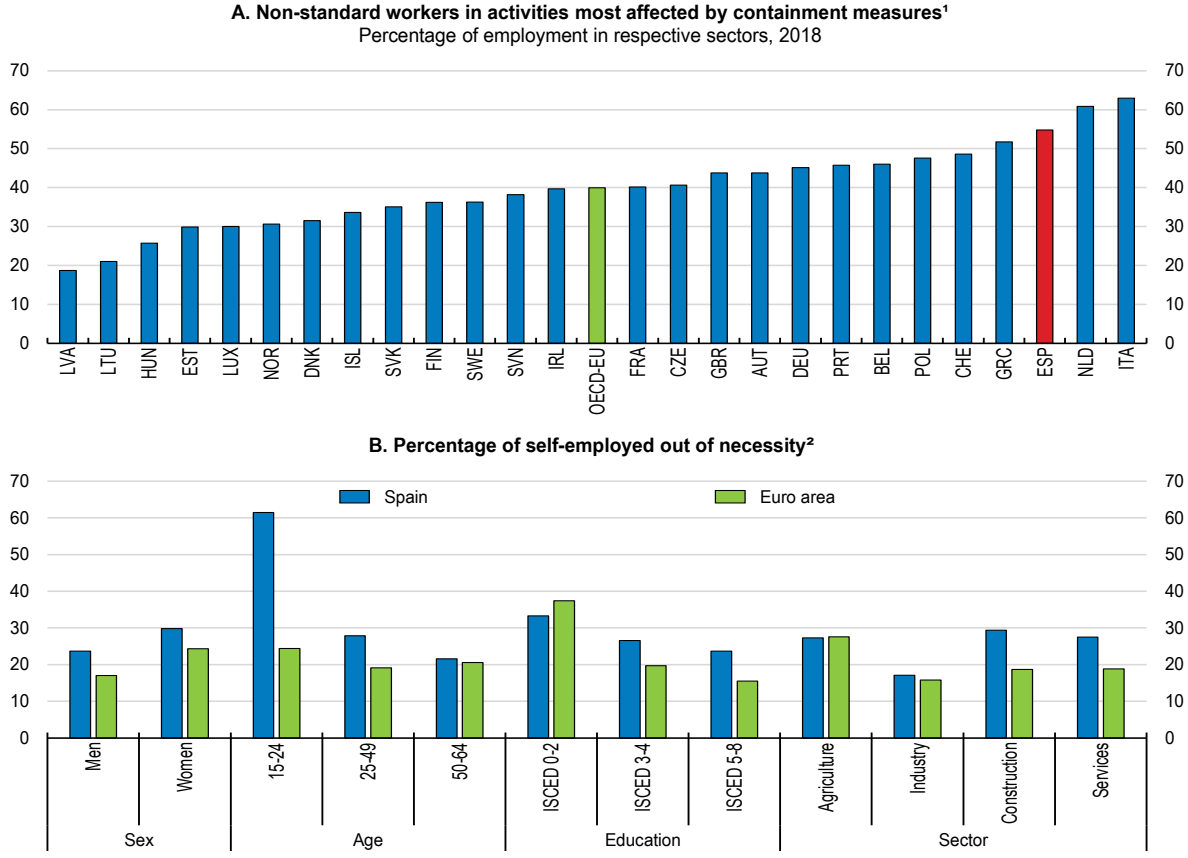
Prior to the pandemic, the government had announced its intention to modify some elements of collective bargaining, such as the abolition of the one-year limit to the automatic extension of expired collective agreements ('ultra-activity'), the reinstatement of the priority of sectoral collective bargaining over firm-level agreements, and the alteration of the negotiation process in cases of substantial changes in working conditions. While details are not precisely defined, one key part of the labour market reform in the national recovery plan, the modernisation of the collective bargaining process, will include these changes. Mechanisms to ensure firm-level flexibility should be maintained, as firms will need to be adaptable to very different economic conditions following the pandemic, such as changes in the demand for certain products or services, and likely changes in the structure of the economy overall.

Non-standard employment

Non-standard employment can provide flexibility for workers and firms, facilitate the emergence of new business models and could provide a stepping stone to standard employment for young and low-skilled workers. However, it can also raise concerns about job quality and potentially increase disparities (OECD, 2019[50]). Even before the crisis, in-work poverty rates were much higher for workers on temporary contracts (21.3%), part-time workers (26.9%), and the self-employed (21.7%), compared to 7.3% for permanent workers. Furthermore, the share of non-standard workers in activities most affected by containment measures are relatively high in Spain (Figure 1.21, Panel A).

Figure 1.21. Non-standard work is prevalent for some sectors and groups



1. The average share of non-standard workers (workers in temporary contracts, in part-time jobs, and the self-employed) in total employment across the affected sectors. The sectors included are construction (VF), wholesale and retail trade (VG), accommodation and food services (VI), real estate services (VL), professional service activities (VM), arts, entertainment and recreation (VR), and other service activities (VS).
2. Self-employed who choose to work on their own account owing to the lack of alternatives (Eurofound, EWCS).
Source: OECD (2020), OECD Economic Outlook, Volume 2020 Issue 1; and Perea and Roman (2019).

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Self-employment is around 16% of those employed, slightly above the OECD average, but self-employment out of necessity at 26% in Spain is higher than the euro area average of 20%, and is more prevalent among the youth (Figure 1.21, Panel B; (Perea and Román, 2019[51])). The social protection of the self-employed were improved in January 2019 to improve access to unemployment benefits, provide insurance against occupational risks and temporary disability due to sickness and with targeted temporary measures in response to the pandemic in 2020.

There remain some policy gaps in the protection of platform workers. While economically dependent self-employed ("TRADE"), those relying on a single client for at least 75% of their income, have access to labour and social protection, this definition is restrictive and applies only to a low number of workers (OECD, 2019[50]; Todolí-Signes, 2019[52]). These gaps can exacerbate fake self-employment, which not only lowers the protection of workers, but can also distort competition across firms. Following a court decision in October 2020 that some platform workers should be considered employees, the government is preparing a draft law to improve the rights of platform workers. Best practices to lower fake self-employment include making it easier for workers to challenge their employment status, for example, by placing the burden of proof on the employer, reducing court fees, simplifying procedures, and protecting workers against potential retaliation (OECD, 2019[50]).

Temporary workers are the main source of job creation and destruction in Spain, with implications for income inequality (Bonhomme and Hospido, 2017[53]) and less investment in training by firms and workers (García-Pérez, Marinescu and Vall Castello, 2018[54]). The share of temporary contracts at around 27% in 2018 is twice that in the EU and remain high, despite some improvements. While temporary contracts can provide flexibility under some circumstances, a number of features of temporary employment in Spain stand out. These include a high share of very short contracts and prevalence of temporary work among the youth and the less educated, and the low probability of transitioning to a permanent contract (Figure 1.22).

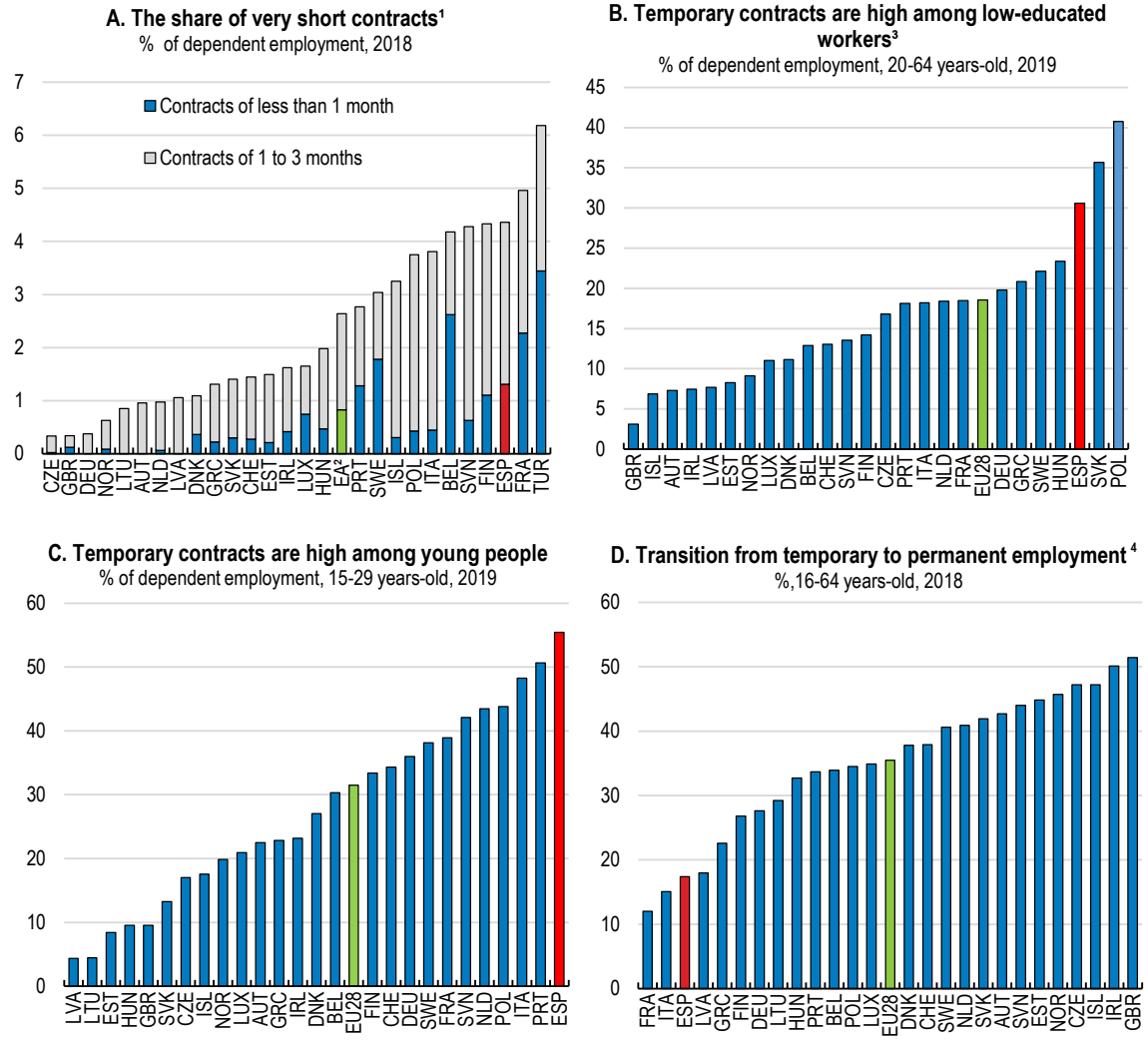
In the short-run, the use of temporary contracts can contribute to job creation, especially in hospitality and tourism sectors, which have been disproportionately affected by the pandemic. Hence, while a reform to address the long-standing problem of labour market duality is needed to improve resilience to future crises, it should wait until the recovery is firmly under way. Consensus among the various political, economic and social agents will be key for a successful reform. Some of the reform proposals discussed below are already part of the reform agenda associated with the recovery plan, which is welcome.

There are three broad types of labour contracts in Spain: open-ended, fixed-term, training and work experience contracts. In addition, there are several types of contracts with different legal requirements and hiring-incentives, aimed at specific groups of workers. While these different contracts are not all widely utilised, the high number creates regulatory complexity for potential employers and investors, and could make it harder to monitor and detect the abuse of temporary contracts. Hence, the menu of contracts firms can choose from should be simplified, while clarifying conditions under which temporary contracts can be used, such as for training of staff or hiring workers based on seasonal jobs (tourism and agriculture). A single open-ended contract with severance pay rising with tenure could also be considered.

It will also be important to ensure that the abuse of temporary contracts is lowered. In this context, the recent increase in resources allocated to intensified labour inspections is welcome. Established recruitment practices, such as the outsourcing of non-core functions through multiservice companies and the use of temporary work agencies, also increase the use of temporary contracts (EC, 2020[55]). The authorities are planning to regulate subcontracting as part of the recovery plan, which can help, but the design should combine flexibility and worker protection. Finally, forcing firms to internalise the cost of using temporary contracts is another option. For example, in the United States, experience-rating, which links employers' social security contributions to the layoff history of the firm, was introduced to prevent firms from taking advantage of temporary layoffs in response to cyclical downturns in labour demand. France has recently planned to introduce a similar reform.

Some existing hiring incentives, which facilitate temporary employment, are effective in meeting their objective during crisis periods, but the effects are modest and temporary, and mostly benefit middle-skilled people (AIReF, 2020[56]). Furthermore, while training contracts help young people with low education, the effect is small, and their uptake by firms is relatively low. Hence, the hiring incentives should be streamlined to be targeted to most vulnerable groups, give more weight to improving training contracts and facilitating their use by firms, as a stepping stone to more permanent jobs.

Figure 1.22. Temporary contracts do not translate into permanent jobs



1. Rate of very short contracts among fixed-term contracts.
2. Euro area, 19 countries.
3. Less than primary, primary and lower secondary educational attainment (ISCED levels 0-2).
4. Employees on temporary contract in year t-1 but declaring having been hired on a permanent contract in year t.

Source: Eurostat, "Detailed annual results of the Labour Force Survey", "Employment, Labour Force Statistics series" and "Labour transitions by type of contract" databases.

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According to the OECD Employment Protection Legislation (EPL) indicators, the regulatory framework for unfair individual dismissals of regular workers is less stringent in Spain (ranked 12th out of 37 OECD countries). However, the indicator for the enforcement of unfair dismissals, which includes the maximum time to make a claim, the burden of proof, ex-ante validation of the dismissal and pre-termination resolution mechanisms, is relatively more restrictive in Spain, with a ranking of 28th (OECD, 2020[22]). Empirical

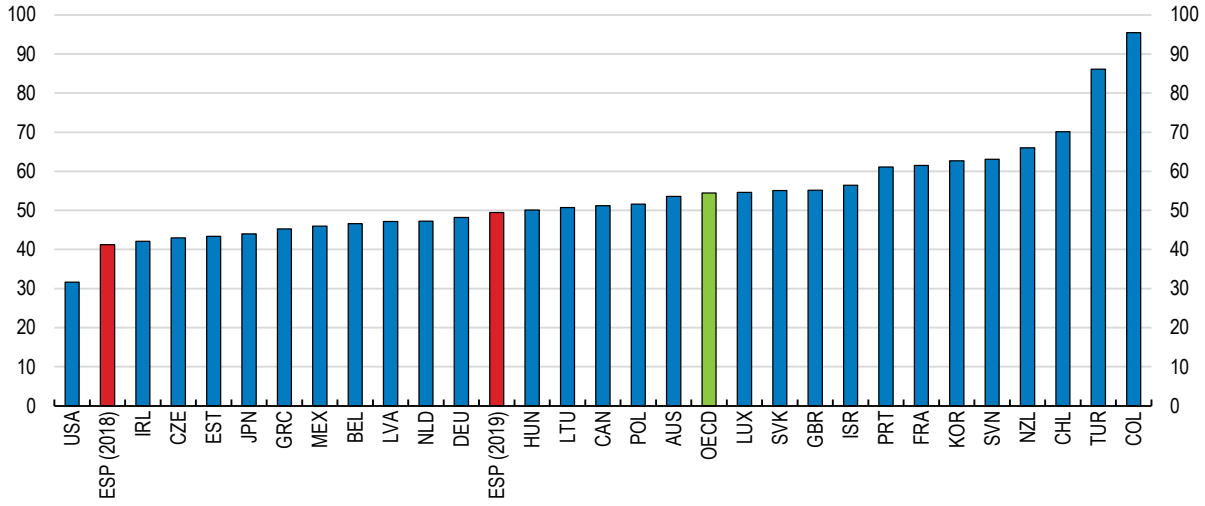
evidence on effective firing costs (Jimeno, 2018[57]) is in line with employers' perceptions that the long duration and uncertain outcome of court proceedings remain a barrier. Hence, the enforcement mechanisms and legal certainty surrounding dismissals of regular workers could be further improved. This could also facilitate firm restructuring needs that might rise in the next phase of the recovery.

Minimum wages

The recent increases of 22% in 2019 and 5.6% in 2020 have brought the ratio of minimum to median wages close to the OECD average (Figure 1.23). An initial evaluation with incomplete data suggests that the adverse effect on employment was low in 2019, but was concentrated on women, the youth and in regions with lower per capita income (AIReF, 2020[58]). As data become available, a complete evaluation of the effect of the recent increases on both employment and poverty should be conducted.

Figure 1.23. Minimum wages have recently increased

Ratio of minimum to median wage, 2019



Source: OECD Labour Market Statistics.

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Cross-country evidence suggests that moderate and progressive increases in the minimum wage tend to have a limited impact on employment and could even have long-term positive impacts on productivity as it forces firms to improve their working process or move towards higher value-added products. However, negative impacts on employment could be higher with substantial and sharp increases, especially for low-skilled workers (OECD, 2018[59]). In January 2021, a temporary commission of experts, including academics, social partners and government officials, was established with an aim to set up a path to reach the government target of 60% of the average wage (42% in 2019) by 2023. In the context of crisis, which has disproportionately affected workers that are more likely to earn the minimum wage, such as the youth and low-skilled, any increase should be gradual and be in line with changing labour market conditions and productivity. For example, the process of setting minimum wages in Germany and the United Kingdom includes a systematic monitoring of its potential impact by specific independent bodies mandated to evaluate and provide recommendations (Low Pay Commission UK, 2018[60]; Eurofound, 2018[61]; Vacas-Soriano, 2019[62]). A similar permanent and independent commission could be established in Spain.

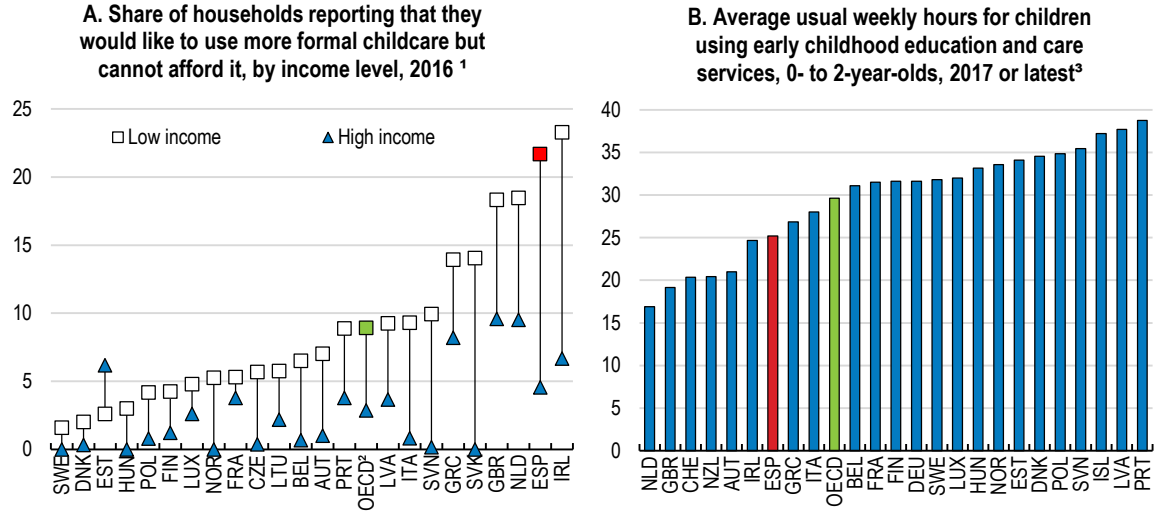
Female employment

The labour market performance of women has been improving, with a lower gender wage gap and labour force participation gap than the OECD average. Nevertheless, the female labour participation rate at 53.9% was much lower than the 64.3% for men in 2019. Unequal distribution of family care responsibilities and the limited public resources for childcare are the main barriers.

Early childhood education and care (ECEC) can contribute to higher female labour market participation, as recent research has identified a long-run child penalty in earnings of 28% after ten years in Spain (De Quinto, Hospido and Sanz, 2020[63]). ECEC can also improve future skill formation, especially for children from disadvantaged backgrounds (OECD, 2017[64]). In 2018, enrolment was almost universal for children aged 3 and older, and 38% for those aged below 3 years old, higher than the OECD average of 26%. However, regional disparities in participation are large (OECD, 2019[65]; Ministry of Education, 2019[66]). The share of households reporting that they would like to use more formal childcare but cannot afford it is high and children spend less time in childcare (Figure 1.24). The authorities plan to launch an eight-year plan to extend ECEC participation. The recovery plan will use part of the EUR 1.6 billion allocated to the modernisation of the education system to ECEC for children aged 0 to 3. These efforts should prioritise removing financial barriers for disadvantaged households and areas.

Another potential explanation for the low female labour force participation could be existing tax disincentives for second earners (AIReF, 2020[28]). While most OECD countries use individual based income taxation, Spain offers the option for joint declaration with a reduction in order to adapt taxes to the composition of household income. While this set-up benefits households with one income earner, it creates disincentives for second income earners, which tend to be women. Hence, this tax disincentive should gradually be removed, with a transitional regime in place to reduce the impact on vulnerable families.

Figure 1.24. There are gaps in childcare provision, despite high participation rates



1. Data refer to the share of households with young children (ages 0-5) who report an unmet need for (more) formal childcare services, and state the main reason for the unmet need as "cannot afford it". Income level is based on the household's position in the national income distribution. "Low income" households are those in the first three deciles, and "high income" those in the top three deciles of disposable income.
2. OECD refers to the average of the presented countries.
3. Data refer to children using centre-based services (e.g. nurseries or day care centres and pre-schools, both public and private), organised family day care, and care services provided by (paid) professional childminders, regardless of whether or not the service is registered or ISCED-recognised.
Source: OECD (2020), "Is Childcare Affordable?" Policy Brief on Employment, Labour and Social Affairs, OECD, Paris; and OECD Family Database.

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Making growth more inclusive and greener

Spain plans to use the EU funds to advance the structural transformation to a more digitalised, inclusive and sustainable economy (Box 1.3). Long-standing reform needs to lower inequalities, which were already high before the crisis, should be prioritised.

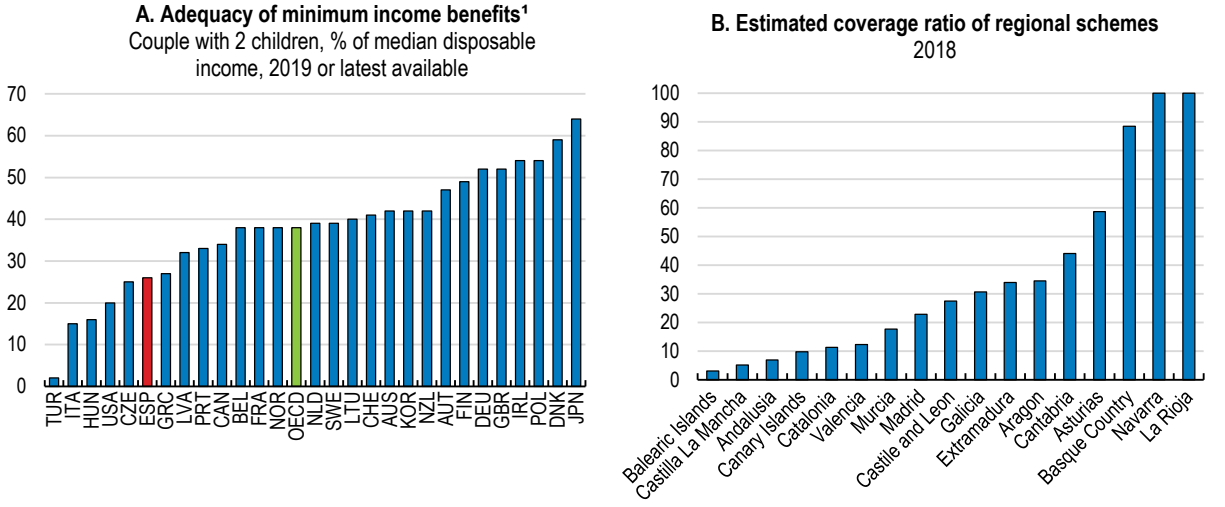
Lowering inequalities

Minimum income guarantee

A national minimum income guarantee scheme (MIS) was introduced in May 2020, which is expected to reach 850 000 households, most of which live in extreme poverty (30% or less of median income), topping up income to a level between EUR 461 and EUR 1 015, costing about EUR 3 billion per year. In April 2021, 250 000 households had received the new benefit, suggesting that the roll-out has been slow. Part of the explanation is that the crisis brought forward the planned introduction of the scheme and the ongoing rigorous evaluation to reach the right people. In February 2021, modifications were introduced to facilitate access to homeless people and other vulnerable groups, by making the definition of "co-existence" more flexible. Monitoring, identifying and removing unnecessary barriers to access should systematically be continued.

The scheme can help lower the longstanding gap of low adequacy and coverage of regional MIS, as recommended in the *2017 Economic Survey of Spain* (Figure 1.25), and regional disparities. A number of features, such as the targeting to vulnerable households, with strict criteria of eligibility based on annual income, number of children and assets, and regular evaluation by the Fiscal Council, are welcome. These evaluations should include the review of existing benefit programmes to prevent unnecessary overlapping. As this is a non-contributory benefit, the scheme will be financed through transfers to the social security budget within the context of the state budget plans, so the financing needs should be incorporated in the medium-term fiscal plan.

Figure 1.25. The national minimum income guarantee will support the existing regional schemes



1. This does not reflect the effects of the new national minimum income guarantee scheme.
Source: OECD, Social Statistics; (Hernández, Picos and Riscado, 2020[67]).

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The law that introduced the scheme includes an obligation to develop work incentives, but they still have to be designed. The income in the current year is evaluated annually to recalibrate the benefit in the next year, but the extent of recalibration is still under analysis by the authorities and is expected to be completed in the first half of 2021. Until then, a 100% effective marginal tax rate on the declared income of the recipients is applied to the benefit in the following year. Work incentives would be effective if the initial loss of the benefit when taking up employment is not as high as the salary, until a sufficient income has been reached. This can also prevent unwanted consequences, such as switching to informal jobs. Easy and flexible entry and exit to the scheme can also incentivise recipients to take up employment.

The involvement of regions will be crucial, as eliminating the existing regional MIS could diminish part of the poverty reduction achieved by the national MIS, especially in regions with high rates of extreme poverty. However, the complementarities with the regional policies are not yet fully developed. Hence, the creation of the MIS Monitoring Committee involving different levels of government is welcome. Coordination with regions will also be crucial to ensure that the recipients have similar treatment in terms of training and activation policies as the unemployed, which should be made an integral part of the design of the scheme (Conde-Ruiz et al., 2020[68]; AIReF, 2019[69]). Regions that choose to eliminate their existing schemes should be encouraged to use these funds for training of recipients.

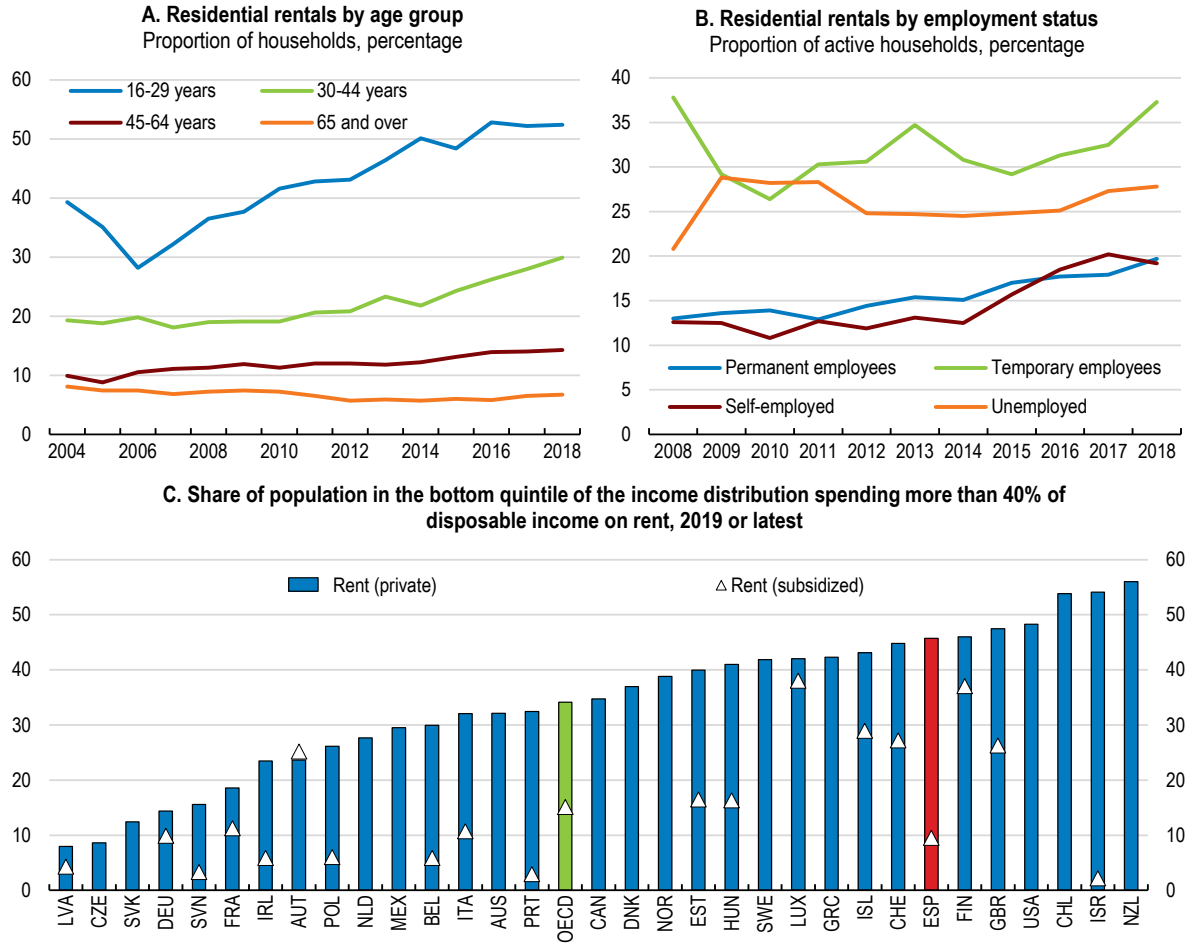
Rent affordability

There has been an increase in the share of residential rentals, especially for younger households and temporary workers in recent years (López-Rodríguez and Matea, 2019[70]). In some regions and big cities, a less proportional increase in the supply of rentals relative to demand led to sharp rises in rental prices until the pandemic hit, with around half of private market low-income tenants overburdened by rent costs (Figure 1.26). In 2019-20, the government took measures to regulate the prolongation of obligatory extension of rental contracts, update rental rules and limits on the value of guarantees given by tenants to landlords, and created a state system of reference index of rental prices, which can help improve private rental markets. The Budget 2021 significantly increased funding for housing policies, and the recovery plan allocates EUR 1 billion for rental public social housing.

Among the different policy options to improve affordability for vulnerable groups, a higher supply of social housing implies lower trade-offs than subsidies and rent controls (OECD, 2020[71]). Spain has low spending on social housing and the share of rental social housing as a share of total housing stock in 2019 was one of the lowest in the OECD, at 1.1%, compared to the OECD average of 6%. In recent years, there has been a shift towards social rental housing in the orientation of public housing policy, such as the *Plan 20 000*, which aims to increase social housing for rent on publicly owned land. The shift to rentals in social housing from ownership is welcome, as they are less likely to impede labour mobility. However, given its high fiscal costs, it is important to ensure that good governance rules are in place to reach those most in need. Means-testing to track changes in eligibility conditions should be made regularly and households above eligibility thresholds encouraged to move out by progressively aligning their rents to market prices.

According to an OECD rent control indicator, reflecting the number of regulations that restrict rent levels and increases, Spain has more stringent regulations than the OECD average (OECD, 2021). It is important to weigh the expected benefits of strict rent regulations on existing tenants in the short-term against possible longer-term drawbacks. These could include a potential decline in residential mobility by locking-in tenants, lower rental supply for future tenants, while not necessarily benefitting those households who are in greatest need (OECD, 2020[72]). The authorities are currently developing a new housing law, considering several policy tools to regulate high rents in some areas. Rental regulations should be designed to strike a balance between tenants' and landlords' interests, create security of tenure and encourage the supply of rental housing for all socio-economic groups.

Figure 1.26. Rent affordability is a concern for some groups



Source: (López-Rodríguez and Matea, 2019[70]) and OECD, Affordable Housing Database.

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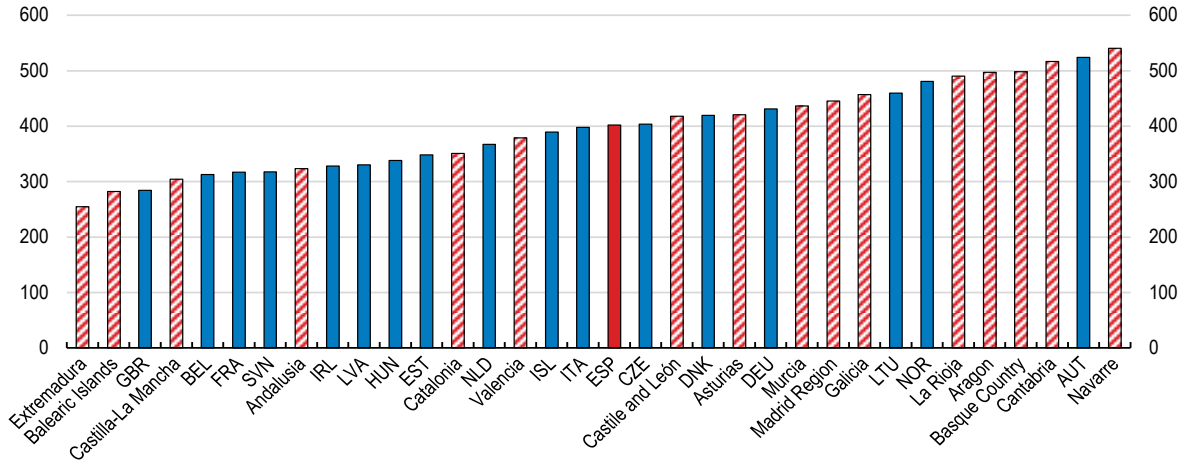
Health

There are regional differences in terms of doctors per 100 000 inhabitants in Spain (Figure 1.27). Depopulation in rural areas, combined with ageing, is likely to pose a challenge for the provision of basic services, such as healthcare. Hence, the recruitment and working conditions of health workers could be further improved. The wide use of temporary employment leads to large turnover and transition to permanent jobs is low (EC, 2020[55]). Doctors are among the occupations facing skill shortages (CEDEFOP, 2016[73]), and one-third of doctors were aged over 55 in 2017. One challenge is that the number of medical graduates exceeds the number of available postgraduate specialty training places to allow new graduates to complete their training (Bernal et al., 2018[74]). Despite some recent initiatives to increase the number of training places, there is a need to better align educational and health authorities' views on medium-term needs. The criteria to open medical schools, and planning of postgraduate training should be improved.

The development of e-health can be an important tool to address growing needs, especially in areas where resources are more scarce. Spain ranks relatively well in the provision of on-line health services online (EC, 2020[75]; Bertelsmann Stiftung, 2020[76]). However, in contrast to some other OECD countries, there is no national legislation, strategy or policy on the use of telemedicine (Oliveira Hashiguchi, 2020[77]). The formation of a single coherent strategy to provide clarity on the many aspects (e.g. clinical, legal, financial, ethical) related to telemedicine could be a driver for further use.

Figure 1.27. There are regional differences in terms of health resources

Number of physicians per 100 000 inhabitants, 2017-2018



Note: National data refer to 2018, while regional data refer to 2017.
Source: Eurostat Health Statistics.

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Reform of the teaching profession for higher basic skills

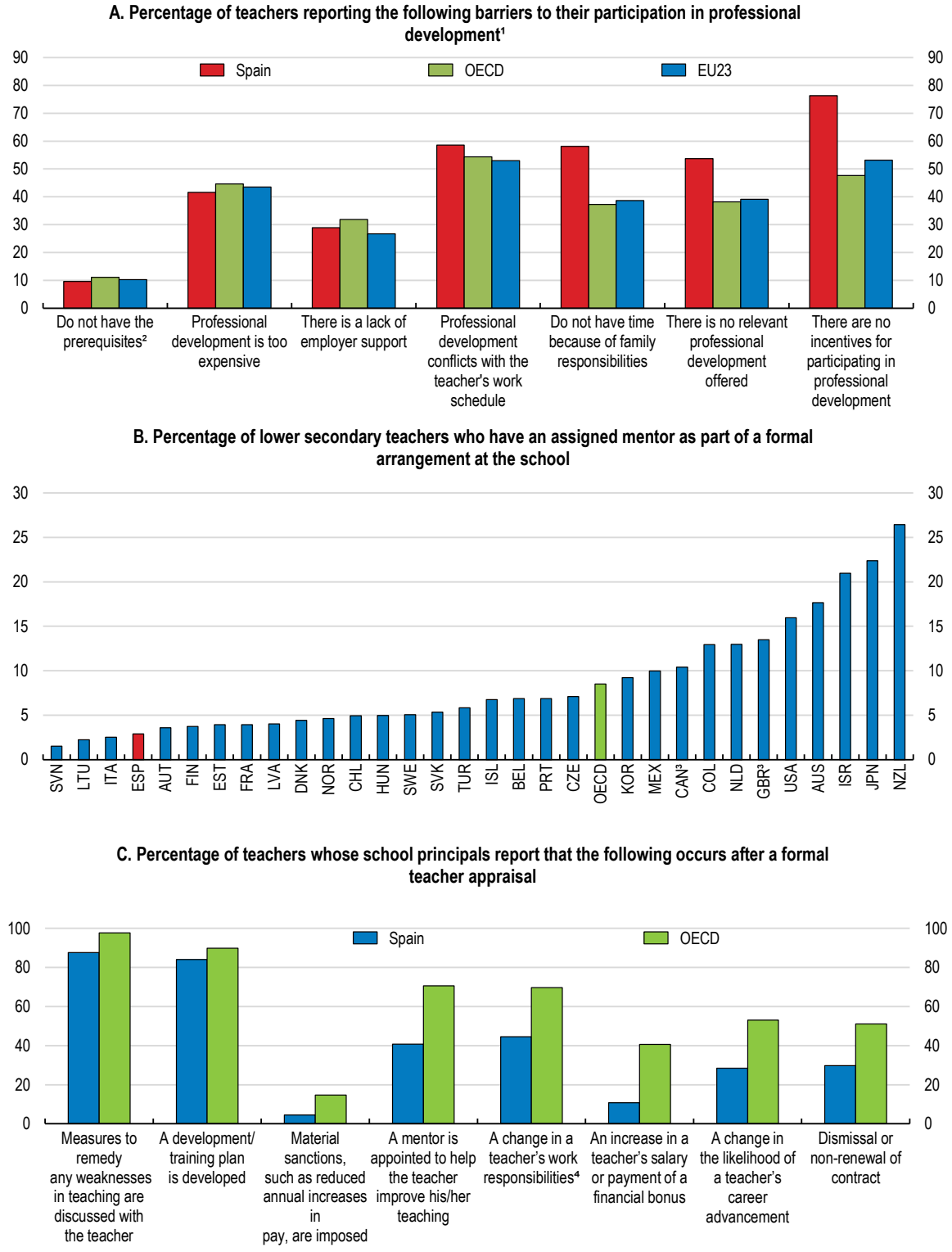
Early school leaving rates at 17.3% in Spain remain higher than the EU average of 10.2%, which contributes to lower basic skills, especially for those from disadvantaged socio-economic backgrounds (OECD, 2018[3]). The new education law (LOMLOE), passed in December 2020, includes measures to reduce school segregation and limit grade repetition, which can help lower early school leaving rates, as recommended in the *2018 Economic Survey of Spain*. The law also states that a plan for teacher recruitment and training has to be prepared within a year. This element should be designed and implemented swiftly as it remains an important gap in the Spanish education system.

Teachers in Spain face job instability, with 33% of secondary school teachers having a fixed-term contract, higher than the OECD average of 18%, and 27% of them have contracts of one year or less (OECD, 2020[78]). The high share of interim teachers makes it difficult to build stable teams in schools (EC, 2019[79]) and can lower opportunities for training. Improving the guidelines for access to the teaching profession can help reduce the share of temporary teachers.

There is room to improve training of teachers. Only 48% of teachers report that they were trained in all three core elements (content, pedagogy and classroom practice of subjects they teach) in their initial training, well below the 79% in the OECD (OECD, 2019[80]), although the share is higher at 68% for teachers who have been teaching for 5 or less years. The crisis has highlighted the importance of the use of ICT for teaching, but only 38% of teachers reported that it was included in their formal training, compared to 56% in the OECD, although the share is 86% for new teachers. Such training is planned as part of the recovery plan, together with increased funding for digital infrastructure in schools (see Chapter 2). The share of teachers citing the lack of relevant professional development options and participation incentives as barriers are higher than the OECD average (Figure 1.28, Panel A).

Teacher training should be strengthened in terms of content and links to career development, *via* effective mentoring, monitoring and appraisal. In Spain, 25% of teachers work in schools in which teachers are never appraised (7% in the OECD), mentoring as a formal arrangement is scarce, and the links between feedback and changes in teaching practices and career advancement are low (Figure 1.28, Panels B-C). This could partly reflect the fact that there is no formal national teacher appraisal system. Introducing an appraisal and feedback framework, which allows teachers to progress in their career and develop more effective teaching practices, should be a priority.

Figure 1.28. Teachers can be supported further via mentoring and training



1. Includes teachers who agree or strongly agree that the following elements present barriers to their participation in professional development.
2. For example, qualifications, experience and seniority.
3. The data refer to Alberta province for Canada and England for the United Kingdom.
4. For instance, an increase or decrease in his/her teaching load, administrative/managerial responsibilities or mentor responsibilities.

Source: OECD, TALIS 2018 Database.

StatLink https://doi.org/10.1787/888934232713

Table 1.9. Past OECD recommendations on social, labour market and education policies

Recommendations in past surveys	Actions taken since 2018
Increase spending on training and job-search assistance.	The Budget 2021 includes an increase of 30% in ALMPs spending. The Action Plan for Youth Employment and the Plan for Preventing and Reducing Long-Term Unemployment for the period 2019-2021 aim at targeting these vulnerable groups.
Remove barriers to competition of training centres across regions.	No action taken.
Introduce a single point of contact for social and employment services.	In 2019, several pilot projects were created to enhance coordination between social and employment services. The deployment of the "social card", which includes all non-contributory benefits received regardless of its source (national, regional or local) continued in 2019.
Ensure full portability of social and housing benefits across regions, by providing temporary assistance either by the region of origin or the central government.	The national minimum income scheme, adopted in May 2020 establishes a common floor for income support measures in all regions.
Target existing financial incentives for lifelong learning opportunities to low-qualified workers and link them to individuals.	No action taken.
Increase individualised support to students at the risk of failing at an early stage.	Individualised support was improved in the context of the Program for Guidance and Reinforcement for the Advancement and Support in Education in 2019 and the Program for Educational Guidance, Progress and Enrichment in 2020, as well as Proa+ for schools of special complexity. The reform of the grant system increases the aid amount for students with specific needs.
Link the choice of training voucher programmes to local labour market needs and provide tailored guidance to workers.	A project to analyse training needs was officially launched in September 2019 and the ALMP Plan 2020-21 aimed at increasing the number of professional counsellors.
Set minimum standards for the work-based learning part of the dual vocational education and training system across regions, while ensuring that they are designed in line with regional needs.	Modernisation Plan for Vocational Training, adopted in 2020, includes the introduction of a single vocational training system that integrates the existing two systems (educational and employment) under the new Ministry of Education and VET.
Improve incentives for the mobility of well-qualified teachers across schools and regions.	The program "Professional Exchange Networks for Teachers", delayed due to the COVID-19, aims at supporting staff mobility by offering opportunities for teachers, counsellors and principals to undertake a professional exchange experience across schools and regions at the national level.

Making further progress in the fight against corruption

Corruption distorts competition, the allocation of resources and access to public goods, which can discourage business dynamism, investment and innovation, and raise inequalities. The overall levels of perceived corruption are relatively high in Spain (Figure 1.29). While the share of Spanish firms perceiving corruption as a serious problem when doing business, at 50%, is higher than the EU average of 37%, the specific forms of corruption they perceive varies, from petty corruption (e.g. facilitation payments to obtain licences or permits) to grand corruption (e.g. private interests in large-scale public contracts) (EC, 2019[81]).

Overly complex regulations and opacity in policy-making can make it easier for some individuals or groups to engage in corrupt activities. The regulatory decision making process in Spain has improved over the past years, as regulatory plans are made publicly available on the Transparency Portal launched in 2014, and the Office on Regulatory Coordination and Quality, a new oversight body, was established in 2017 (GRECO, 2019[82]). Nonetheless, the quality of regulatory policy and governance remains relatively low, which is mainly due to weak ex-post evaluation of regulations (Figure 1.30). Methodological aspects (e.g. impact assessment), oversight and quality control should be improved to ensure that the absence of adequate ex-post evaluation does not underestimate the costs of regulatory measures and disproportionately benefit certain interest groups.

Corruption in public procurement increases direct costs, while crowding out competitive firms, and lowers the quality of public investment. The public procurement framework in Spain was improved by the law on

public sector contracts, aimed at simplifying proceedings and increasing transparency (OECD, 2018[3]). Since 2018, progress has been made in the new governance structure by the creation of an Independent Office for Procurement Regulation and Oversight, which publishes annual reports, and other bodies that facilitate the implementation of the framework were given additional resources. The 2018 framework has also improved the system for needs assessment, where Spain was lagging behind, according to the 2017 World Bank data on Benchmarking Public Procurement. Efforts to improve the implementation of the framework should be continued.

Figure 1.29. Efforts to fight corruption must be increased

Note: Panel A shows the point estimate and the margin of error. Panel C shows individual indicators, which underlie the "Control of Corruption" indicator by the World Bank. Panel D shows sector-based subcomponents of the corruption indicator by the "Varieties of Democracy" Project.
Source: World Bank, Worldwide Governance Indicators, the Economist Intelligence Unit; the World Economic Forum; the Gallup Organisation; the French Ministry of Economy and Agence francaise de Developpement; Political Risk Services; Global Insight; Varieties of Democracy Institute, University of Gothenburg and University of Notre Dame; Transparency International.

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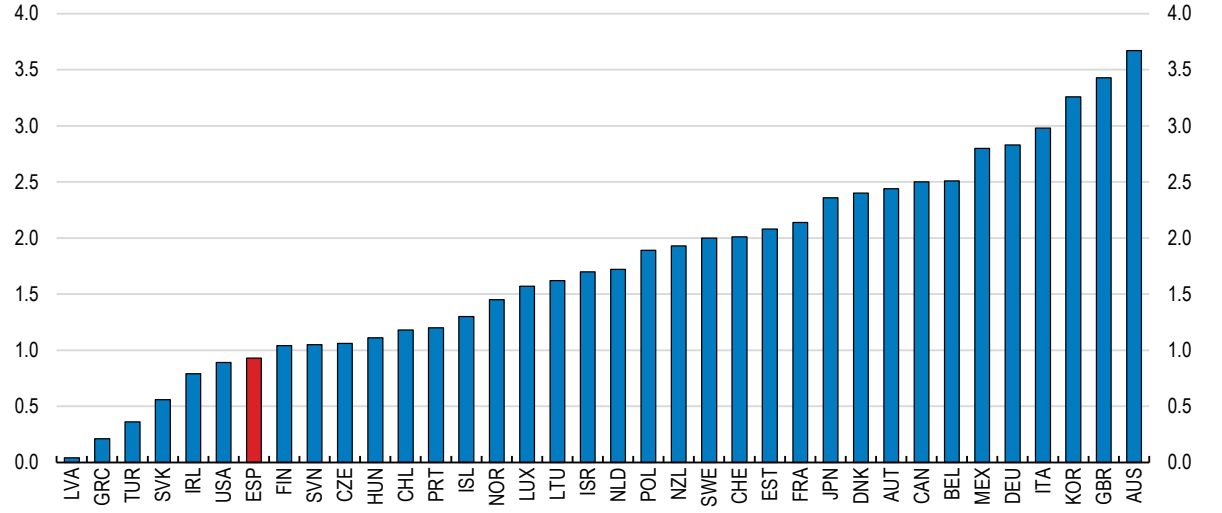
Spain has undertaken several initiatives in recent years, including the 2013 Regeneration Plan, to promote public integrity, which is also essential to control corruption. These include stronger regulations of senior officials to limit conflicts of interest and improved transparency in political party funding. However, these measures are more of a piecemeal approach, and implementation is lagging, as conflicts of interest among high ranked officials through revolving doors are not effectively controlled (GRECO, 2019[82]). A comprehensive and effective integrity strategy, which would effectively prevent and control, for instance,

corruption related to public contracts associated with revolving doors, should be adopted. The new OECD Public Integrity indicators and the OECD Recommendation on Public Integrity (OECD, 2017[83]) would be useful in the design of such a strategy.

Figure 1.30. Policy frameworks can be strengthened to prevent corruption

Ex-post evaluation of regulation, index from 0 (worst) - 4 (best), 2017



Note: Score for ex-post evaluation in the OECD Indicators of Regulatory Policy and Governance (iREG).
Source: OECD (2020), Government at a Glance (database); and International Budget Partnership (database).

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The Spanish legal framework to fight corruption was strengthened over the past years, through amendments to the offence of foreign bribery and increases in applicable sanctions, and more effective and legally certain confiscation of proceeds, including the creation of the Asset Recovery and Management Office in 2015. Following the recommendations made by the OECD Working Group on Bribery would further improve the fight against corruption, including through enhanced enforcement of foreign bribery cases. For example, Spain could develop guidelines for investigators and prosecutors on the investigation, prosecution and sanctioning of transnational corruption, including the application of confiscation measures (OECD, 2015[84]). Furthermore, the compilation of detailed statistics on the criminal, civil and administrative sanctions imposed for domestic and foreign bribery can help the assessment of the adequacy of sanctions imposed in practice (OECD, 2015[84]).

The independence of the judiciary is key to ultimately enforce regulation and tackle corruption effectively. International reports highlight that judges and prosecutor services in Spain are of high quality and, with the exception of some isolated cases, there is no substantial evidence of corruption of individual judges or prosecutors (GRECO, 2013[85]; GRECO, 2017[86]). Spanish judges have also been internationally recognised for having a strong spirit of public service and dedication to public duty (GRECO, 2017[86]). The Spanish Constitution and legal framework outline a solid legal grounding of judicial independence by enshrining independence, impartiality and irremovability of judges (Article 117, Spanish Constitution).

In this context, the General Council of the Judiciary (CGPJ) is the constitutional body entrusted with the task of ensuring the independence of the Judiciary, by exercising key functions, such as appointments, promotions, inspection of the functioning of the courts and tribunals and the disciplinary liability of members of the judicial career (Article 122.2, Spanish Constitution) (CGPJ, 2020[87]). The composition of the CGPJ and the way in which its Members are elected have been a recurring subject of debate because of how it could influence the degree of its independence with respect to the powers that elect them (Government of Spain, 2020[88]). At present, the majority required to elect the Members of the CGPJ is three-fifths of each

of the legislative Houses. The Spanish Government underlined in its submission to the 2020 EU Rule of Law report that the requirement of a qualified majority of three-fifths guarantees the convergence of diverse political forces, and avoids the election of a CGPJ that responds to a specific and temporary parliamentary majority, reinforcing its independence from political power (Government of Spain, 2020[88]). Given the qualified majority requirement, it has been difficult for the current diversified Parliament to reach an agreement on the new composition that is subscribed by three-fifths of the Chambers. For this reason, since December 2018, the Council has been exercising its functions *ad interim*.

In an attempt to address the deadlock, two parliamentary groups proposed a reform to enable a reduction of the qualified three-fifths majority requirement in a second voting round to an absolute majority. Following substantial national and international concerns on the effects of the reform on the Council's independence, it was suspended in October 2020. A second reform, currently being considered in the Spanish Parliament, proposes the creation of an *ad interim* regime for the Council when its five-year term has expired (Spanish Congress, 2020[89]). If approved, it would limit the powers of the Council until its renewal. Following these successive proposals, a primary effort should be to ensure that, given the public visibility and high political tension surrounding the reforms, the CGPJ stays and is perceived as fully independent from politisation. An essential requirement to prevent corruption is to ensure the impartiality and independence of the Council governing the judiciary power. If the governing structure of the judiciary suffered from a loss of trust from citizens and individual judges, this could have a negative impact on the prevention of corruption in Spain and compromise the perceived independence of judges on the bench in the long term (GRECO, 2019[82]). Its independence should be assured, promoted and protected at all times to continue the fight against corruption in Spain effectively.

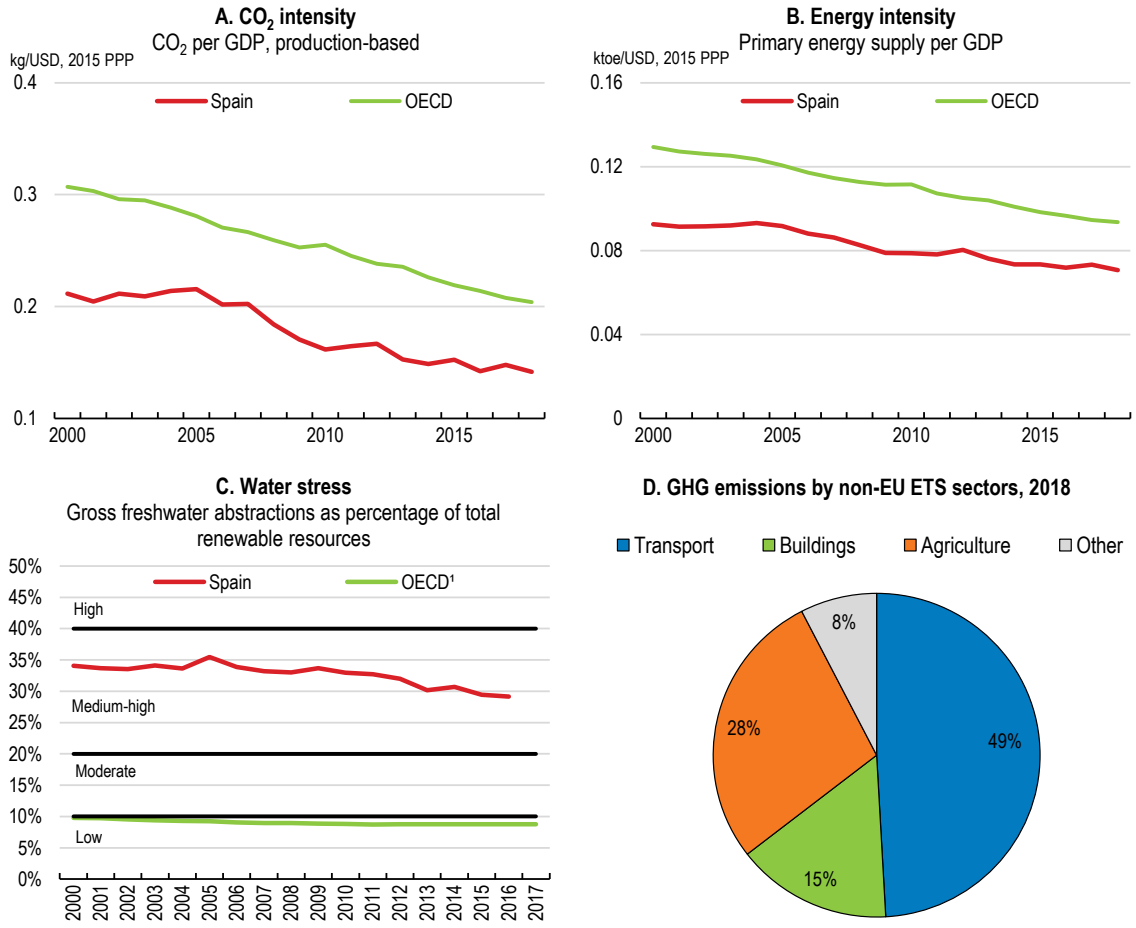
Making growth greener

Over the past decade, Spain reduced its carbon and energy intensity (Figure 1.31, Panels A-B), but a number of key environmental and climate challenges remain. For example, Spain has one of the highest levels of water stress in the OECD (Panel C), while water tariffs in general do not cover amortised costs (OECD, 2020[90]), which requires more efficient price signals, as discussed in previous economic surveys. Reducing emissions from agriculture, transport and increasing energy efficiency, especially in buildings, will also be key, as these sectors account for a large share of non-emission trading scheme emissions (Panel D).

Environment is one of the main pillars of the national recovery plan. The Law on Climate Change and Energy Transition, the National Integrated Energy and Climate Plan, the Just Transition Strategy, the Energy Poverty Strategy, the National Climate Change Adaptation Plan and the Long-term Strategy for a modern, competitive and climate neutral economy in 2050 will feed into the plan (Government of Spain, 2021[31]). This section concentrates on two aspects of the ecological transition agenda, which can also support the near-term recovery.

The 2020 National Energy and Climate Plan targets by 2030 a 23% reduction in greenhouse gas (GHG) emissions compared to 1990, 42% share of renewables in energy end-use, 39.5% improvement in energy efficiency and 74% share of renewable energy in electricity generation (Government of Spain, 2020[91]). Without new measures, Spain would miss its target for sectors not included in the ETS by 10%. This ambitious ecological transition is estimated to require EUR 241 billion in investment by 2030. Frontloading investment towards sectors that can accelerate the green transition, as is planned in the national recovery plan, can simultaneously address recovery and climate objectives (OECD, 2020[92]; OECD, 2020[93]). However, it will be important to conduct a cost-benefit analysis of these investments. There is also scope to create "green" jobs in Spain, as low-carbon transition is expected to mitigate job polarisation by creating middle-skilled, middle-paying jobs, especially in the construction sector (CEDEFOP, 2018[94]; Eurofound, 2019[95]).

Figure 1.31. Environmental pressures remain in a number of areas



1. OECD values are rough estimates based on linear interpolations and partial data.
Source: OECD Green Growth Indicators; and European Commission (2020), EU Energy in Figures: Statistical Pocketbook (database).

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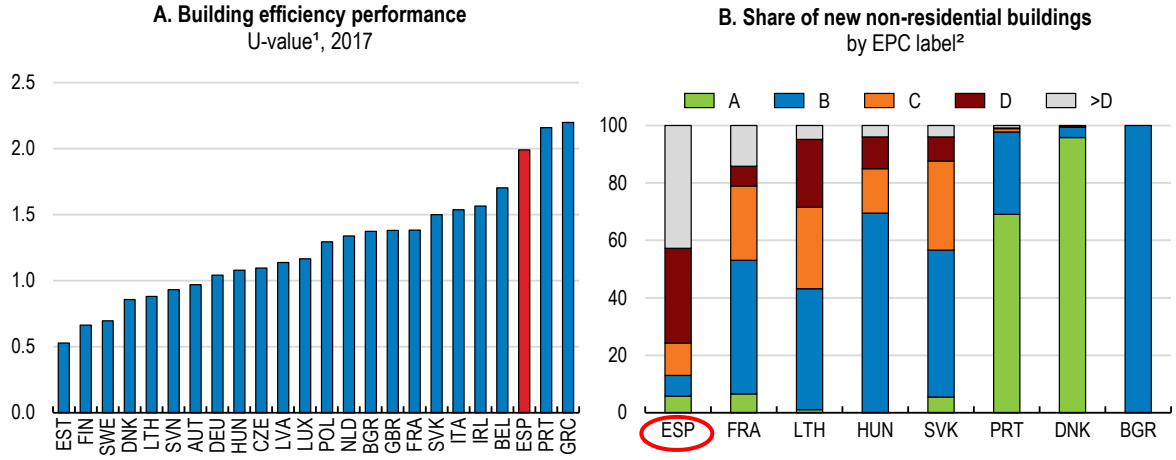
In the past few decades, Spain has increased its energy diversification, with a growing share of renewable energies 15% of primary energy supply in 2019, according to OECD indicators), but there is a need to increase investment to meet 2030 objectives, notably in buildings. Due to the milder climate, Spain has a relatively low share of energy consumption by buildings, but the energy efficiency of buildings according to a metric based on heat loss is low ((De Groote et al., 2017[96]); Figure 1.32, Panel A). A comparison of building energy renovation trends in 2012-16 shows that the primary energy savings from renovation of buildings in Spain was less than the EU average (EC, 2019[97]).

The new strategy for energy upgrading in the building sector has 2050 targets of a cumulative reduction in energy consumption compared to 2020 of 37.3% in residential buildings. The strategy focuses on the renovation of 1.2 million houses during the first decade (until 2030) (Ministry of Transport, 2020[98]). New rules would also increase the requirements for energy savings in public buildings. While the Spanish plan is well-developed compared to other EU ones (BPIE, 2020[99]), there is still a need to provide more detailed information (m^2 of buildings, energy savings/m^2, investments) to allow a more comprehensive evaluation of the ambition, effectiveness and feasibility of the measures (EC, 2020[100]). Effectively implementing these plans would not only result in energy savings, but also support employment. For example, in 2012-16, the number of employees involved in the renovation of residential buildings was 360 321 (EC, 2019[97]). The recovery plan allocates EUR 7 billion for the rehabilitation of housing and for urban renewal to improve energy efficiency and increase the use of renewable energy among others.

Figure 1.32. Investment in building renovation can be frontloaded



1. Higher value refers to less efficient buildings. The U-value is a measure of heat loss through a building shell element, calculated as an average of floor, roof, walls and windows efficiency for residential buildings.
2. A is the most efficient energy performance certificate (EPC).
Source: European Commission (2020), EU Buildings Database.

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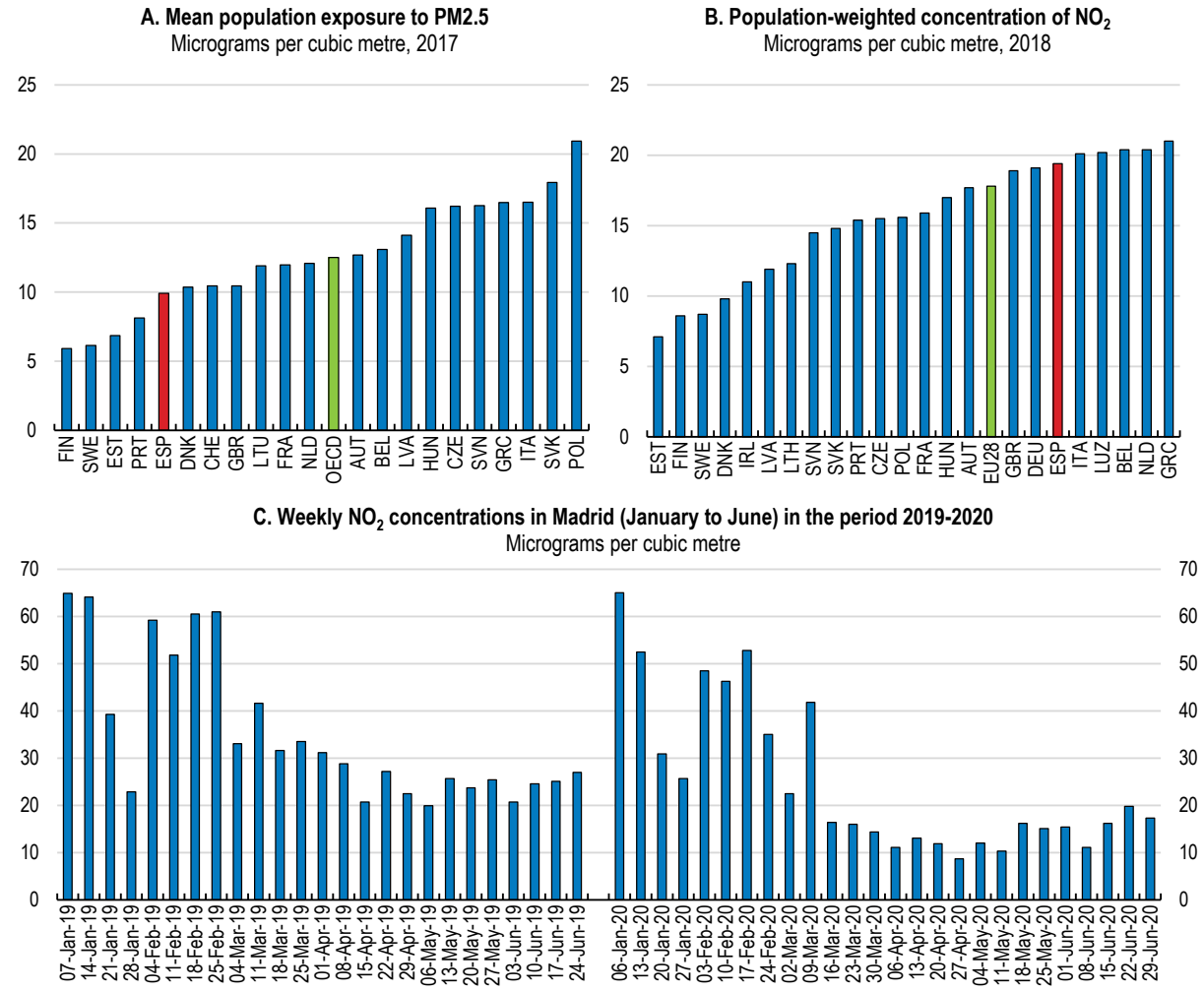
Another way to facilitate building renovation is more widespread utilisation of energy performance certificates (EPC), which can deliver a demand-driven market signal for energy efficiency, as the share of existing buildings with EPCs in Spain is relatively low. In addition, the share of non-residential buildings with the least efficient rating is relatively high (Figure 1.32, Panel B). Some European countries have introduced EPC registers, while this exists only in some regions in Spain. The role of EPCs in facilitating renovations could be improved, for example, with the introduction of optional "building renovation passports" (France, Germany), and the use of one-stop shops (Ireland, Denmark) to reduce regulatory complexity (EC, 2020[101]). Imposing minimum energy efficiency standards for rental properties could also be considered (Economidou, 2014[102]).

Poor building standards also create some risks for banks through their real estate loans, but the lack of data on household energy efficiency prevents a complete assessment of such risks (Delgado, 2019[103]). For example, minimum energy performance standards have helped banks to review the energy performance of their asset portfolios in the Netherlands (EC, 2018[104]). Once granular data are available in Spain, the authorities could require financial intermediaries to report their climate-related exposures in this area.

While air pollution is below the OECD average in terms of exposure to PM2.5 particles, poor air quality, as measured by NO_2 concentration in ambient air, is high in international perspective, especially in major cities, such as Madrid and Barcelona (EC, 2019[105]) (Figure 1.33, Panels A-B). For example, road traffic accounts for up to 90% of NO_2 levels in Madrid city (Borge et al., 2014[106]), with strong implications for health (Izquierdo et al., 2020[107]). Almost 7 000 premature deaths in Spain were attributable to NO_2 in 2018 (European Environment Agency, 2020[108]). Improvements in air quality can increase resilience to future shocks, by lowering acute respiratory illnesses (OECD, 2020[109]). Estimates show that Spain experienced the greatest NO_2 reduction between 15 March and 30 April due to the lockdown, reaching 47% in Madrid (Figure 1.33, Panel C) and 59% in Barcelona (European Environment Agency, 2020[108]). This highlights the large scope to improve sustainable transport, which could be achieved with electric vehicles in public and private transport.

Figure 1.33. Sustainable transport can contribute to better air quality



Source: OECD (2020), Green Growth Indicators (database); and European Environment Agency (2020), Air quality database.

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Spain has an ambitious target of 5 million electric vehicles for 2030 and the Draft Law of Ecological Transition and Climate Change proposes compulsory low-emission zones before 2023 for municipalities over 50 000 (Ministry of Transport, 2020[110]). The recovery plan allocates investment of EUR 6.5 billion towards these goals.The Plan for the automotive industry (EUR 3.75 billion) from June 2020 includes EUR 450 million for the renewal of the existing fleet of vehicles, including the public fleet. The MOVES II and III programmes allocate EUR 100 million and EUR 400 million to the acquisition of alternative energy vehicles, the deployment of electric charging infrastructure, and shared electric bicycle systems. Given the high scope for public investment and already well-developed plans in this area, investment in sustainable transport, as is planned in the national recovery plan, could be frontloaded. These could include higher investment in infrastructure and financial incentives for zero or low emission vehicles.

Table 1.10. Recommendations on macroeconomic and structural policies

MAIN FINDINGS	RECOMMENDATIONS (key in bold)
Mitigating the effect of the pandemic while addressing medium-term fiscal challenges	
Fiscal policy responded quickly and effectively to the crisis. Yet, uncertainty about the pace of the recovery remains high, and the impact varies across sectors, firms and workers.	**Keep fiscal policy supportive until the recovery is firmly underway, by prolonging support measures while making them more targeted.**
Without a credible medium-term fiscal consolidation strategy to put public debt on a sustainable downward path once the recovery is firmly underway, risks to fiscal sustainability could increase.	**When the recovery is firmly underway, announce a multi-year path for fiscal consolidation strategy, which includes all levels of government.**
As the recovery commences, keeping indiscriminate policies for too long could limit the necessary economic adjustment by maintaining non-viable jobs or firms.	Increase the use of more targeted policies, for example by phasing out the restrictions on firing for COVID-19 related reasons and the suspension of insolvency proceedings, as recovery commences.
Short-time work schemes limited the rise in unemployment, but there might be a need to reallocate some of these workers to other firms and sectors.	**Ensure that workers on short-time work schemes, especially those in sectors facing the longest recovery periods, effectively priority for training.**
Existing regulations for flexibility at the firm level can help firms adapt more easily in the post-pandemic recovery phase.	**Maintain a flexible labour market that allows firms to adapt to changing economic conditions, including through the priority of firm level agreements over sectoral and regional ones.**
The recent measures to provide direct aid to help viable firms facing distress solely due to COVID-19 are welcome. Speedy restructuring of viable firms in temporary distress could prevent their unwarranted liquidation, but congested courts can delay this process.	**Ensure the swift disbursement of the new direct aid measures and increase the allocated funds, if needed**. **Promote out-of-court restructuring procedures, especially for small and medium sized enterprises.**
Evaluation of policies and regular spending reviews, especially at the regional level, are not widely used.	**Increase systemic evaluation of policies at every level of government.**
Reduced VAT rates and exemptions are widespread.	Limit the use of reduced VAT rates and exemptions over the medium term.
The ambitious national recovery plan contains investments and reforms in many areas, and frontloads the use of EU funds to aid the near-term recovery. A governance system including different levels of government, has been put in place, but could face implementation challenges.	**Prioritise reforms that enhance long-term growth, while ensuring swift implementation to also support the near-term recovery.** **Ensure efficient coordination and governance of the recovery plan, by ensuring transparent procedures and criteria for investments.**
Population ageing will continue to put pressure on the financial sustainability of the pension system. The gap between the average labour market exit age and the statutory retirement age is large. The pension contribution rates for the self-employed remain low, compared to standard employees, which can decrease their ability to accumulate adequate benefits.	**Take adequate and socially acceptable measures to ensure the long-term financial sustainability of the pension system.** **Link the statutory retirement age to life expectancy at retirement, disincentivise early retirement, for example by increasing the number of years of contribution to gain a full pension.** Base the pension contributions of the self-employed on the actual income rather than the contribution base of their choice beyond the minimum threshold.
The efficiency of active labour market programmes in terms of individualised support and training is low. The share of active labour market policies allocated to training is low. The funding criteria of active labour market policies do not sufficiently take into account the creation of permanent high quality employment.	**Introduce the use of profiling tools to identify job-seekers at risk of becoming long-term unemployed and their training needs.** Boost the quality of training offered as part of active labour market programmes to be more in line with labour market needs. Improve the evaluation and the criteria for the allocation of funding to regional public employment services.
The wide range of justifications for using a temporary contract and the related hiring incentives contribute to a high use of short-term hiring. The regulatory framework for unfair dismissals of permanent workers is less stringent than the OECD average, but effective firing costs due to their application in courts remain a barrier.	**Target existing hiring incentives to specific vulnerable groups and link them to training programmes.** **Simplify the menu of contracts firms can choose from.** Improve the enforcement mechanisms and legal certainty surrounding dismissals of regular workers.
The recent rises in minimum wages have not been introduced gradually, which could potentially lower employment for vulnerable groups.	**Establish a permanent Commission to regularly evaluate the changes to the minimum wage, in line with changing labour market conditions and productivity**.
The labour market outcomes are still lagging for women, who have been disproportionately hit by the crisis.	Continue to expand early childhood education for those aged 0-3, targeting low-income households and disadvantaged areas. Gradually remove the tax disincentives for second earners.

Promoting an inclusive and sustainable recovery	
Work incentives and training opportunities related to the new national income guarantee scheme are still being designed, so currently there is a 100% effective marginal tax rate on the following year's benefit, which may lower job search.	Ensure that the initial loss of the benefit when taking up employment is not as high as the salary and facilitate the access of recipients to training.
The new national income guarantee scheme will help lower poverty, but coordination with regions are not yet clear.	Clarify and strengthen the role of regions in the implementation of the national minimum income guarantee scheme.
The shift towards rentals in social housing is welcome, and should be targeted to the most vulnerable.	Regularly use means testing to track changes in eligibility conditions for continued access to rental social housing.
There is a need to boost basic skills of students, but teachers still lack opportunities to raise their skills or recognition for their performance.	Strengthen the content and links to career development of further training of teachers.
The demand of medical graduates for postgraduate training places exceeds the available supply to allow new graduates to complete their training.	Improve the criteria to open medical schools, and increase the postgraduate training places for doctors.
Enforcement of the recent reforms to improve the legal framework to control foreign bribery, which increased sanctions and confiscation measures of proceeds for foreign bribery, can be impeded by lack of accurate information.	Develop guidelines on how to calculate the proceeds of bribery to individuals or firms, who have benefited from corrupt transactions, to ensure consistency in fines. Provide further statistics on sanctions imposed for domestic and foreign bribery.
There is room to improve carbon pricing for both road and non-road emissions.	**Over the medium term, increase taxation of fuels to better reflect emissions of CO_2, together with redistribution towards poorer households.**
Meeting the new ambitious climate objectives will require sizeable investment and reductions in emissions, including in transport and buildings, which account for a large share of non-ETS emissions.	Prioritise investment in energy saving renovation in buildings and sustainable transport by implementing swiftly the already well-developed plans in these areas.

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Annex A. Progress on structural reforms

This Annex reviews action taken on recommendations from the November 2018 Survey.

Recommendations	Action taken since previous Survey (November 2018)
Productivity, innovation and business climate	
Eliminate the existing regulations that depend on the size of firms, as needed.	No action taken.
Regions should include the principle of national effectiveness of the Market Unity Law in their legislation.	No action taken.
Assess the compliance of new legislation at all levels of government with the principles of the Market Unity Law.	In 2019-20, measures were taken to improve the implementation of the Market Unity Law, including training of officials, awareness campaigns and improved cooperation between national, regional and local authorities.
Give the recently activated R&D Public Policy Network a strong mandate to further increase coordination of regional and national innovation policies.	In 2019, the R&D Public Policy Network published guidance on monitoring and evaluation of smart specialisation of regions. In 2020, *the Spanish Strategy of Science, Technology and Innovation 2021-2027* was approved.
Strengthen the ex-post evaluation framework of innovation support and consider increasing performance based funding.	In 2019, the Cervera Program was launched. It promotes technology transfer and cooperation between different agents linked to R&D and includes evaluation criteria. In 2019, University Sexennium on Knowledge Transfer was created to promote scientific transfer among university teachers.
Environmental sustainability	
Improve the use of water price signals and water governance by widening participation of stakeholders in river basin authorities to include more scientists and improving the efficiency of water supply and treatment services by benchmarking regulation of water utilities.	The new National Plan of Water Treatment, Sanitation, Efficiency, Savings and Water Reuse (DSEAR Plan) improves inter-administrative cooperation in water management planning, including the modification of the Competent Authorities Committee of the intercommunity Spanish river basin districts in order to incorporate other stakeholders and water competent authorities.
Increase the share of R&D in water-related technologies.	The DSEAR Plan includes some instruments (contracts, guidance, criteria, etc.) to help the public water administration to contract companies committed with water R&D, improve the knowledge of the scientific community about the needs of the competent authorities regarding water in R&D and to increase the exchange of new R&D in water-related technologies

Annex B. Spanish Recovery, Transformation and Resilience Plan

Table B.1. The main pillars of the Plan

	EUR million	% of funds
Urban and rural agenda, territorial cohesion, modernisation of agriculture (e.g. mobility in urban environments, housing rehabilitation and urban regeneration plan, environmental and digital transformation of the agri-food and fishing system)	14 407	20.7
Resilient infrastructure and ecosystems (e.g. conservation and restoration of ecosystems and their biodiversity, preservation of coastal regions and water resources, sustainable, safe and connected mobility)	10 400	15.0
A just and inclusive energy transition (e.g. deployment and integration of renewable energies, electrical infrastructure, promotion of smart grids, flexibility and storage; renewable hydrogen roadmap; Just Transition Strategy)	6 385	9.2
An administration for the 21st century	4 315	6.2
Modernisation and digitalisation of industry and SMEs, recovery of tourism, promotion of entrepreneurship (e.g. Industrial Policy Spain 2030, digital connectivity, cybersecurity, 5G deployment)	16 075	23.1
Promotion of science and innovation and strengthening the capabilities of the national health system	4 949	7.1
Education, knowledge, continuous training and capacity building (e.g. digital skills, VET, early education)	7 317	10.5
The new care economy and employment policies (e.g. reinforcement of inclusion policies)	4 855	7.0
Promotion of culture and sports industries (e.g. audio-visual hub of Europe)	825	1.2
Modernisation of the fiscal system for inclusive and sustainable growth (prevention of tax fraud, improve efficiency of public spending, adapt the tax system to the 21st century, long-term pension sustainability within the framework of the Toledo Pact)		

Table B.2. Main investments

	EUR million, 2021-23
Sustainable, safe and connected mobility	13 203
Building renovation and urban renewal	6 820
Modernisation of public administration	4.315
SME digitalisation	4 066
Roadmap for 5G	3 999
New Industrial Policy Spain 2030 and Circular Economy Strategy	3 782
National Plan for Digital Skills	3 593
Modernisation and competitiveness of tourism	3 400
Growth of the national system of science, technology and innovation	3 380
Deployment and integration of renewable energy	3 165
New care economy	2 492
New public policies for dynamic, resilient and inclusive labour markets	2 363
Preservation of the coastline and water resources	2 091
Strategic Plan for Vocational Training	2 076
Modernisation and digitalisation of the education system	1 648
Conservation and restoration of ecosystems and biodiversity	1 642
Roadmap for renewable hydrogen	1 555
Energy infrastructures, smart networks, storage	1 365
Renewal and modernisation of the national health system	1 069
National Strategy for Artificial Investment	500

2 Enhancing digital diffusion for higher productivity in Spain

The increased adoption of digital technologies has been transforming the Spanish economy. The COVID-19 crisis is expected to speed up this process. The new digital strategy, 'Digital Spain 2025', features a number of ambitious objectives in a timely manner. There is a need to promote digital diffusion across the country by developing communication infrastructure further, while addressing the digital divide across regions and ensuring digital security. Addressing key bottlenecks, such as people's skills, through education policies at every level, would enable the use of digital technologies and boost productivity growth. This would help in particular laggard firms and low-skilled people, making the benefits of digitalisation shared by all. In parallel, R&D should be enhanced to lift the capacity of firms to adopt and use digital technologies effectively, resulting in improving their business models and products. Finally, business dynamism should be revitalised to encourage risk taking among firms, thus facilitating digital diffusion, while ensuring an efficient allocation of capital.

Digitalisation is transforming the Spanish economy, changing the way firms operate, with positive implications for productivity. However, these changes are not evenly shared between highly productive and less productive firms. This is partly due to the difference in their capabilities to adopt digital technologies effectively, underpinned by intangible capital and ICT skills of workers, with which digital technologies raise productivity effectively. Looking ahead, the existing productivity gap across firms in Spain may in itself fuel a further productivity dispersion as digital technologies disproportionately favour high productivity firms. This productivity gap has also affected earnings disparity due to wage premiums attributed to firm productivity as well as excess returns to skills arising from the scarcity of skilled workers.

Spain still has considerable scope to reap the benefits of the adoption of digital technologies and, perhaps more importantly, their effective use to produce new business models and products. The issue will bear more importance as the digital transformation of the economy is accelerating due to the COVID-19 crisis. Broad-based policies should promote digitalisation, ensuring communication infrastructure and services, sharpening firms' incentives and enhancing their capabilities to make the most out of new technologies. These policies should be accompanied by efforts to remove barriers to laggard firms, improving their access to capital and incentivising them to boost their underlying capabilities including, among others, intangible capital and the skills of workers. Enhancing skills would entail a double dividend, as job training for low-skilled workers is found to be particularly effective to increase digital adoption by firms while it can help workers to find higher quality jobs, alleviating earnings disparities.

Digitalisation offers new opportunities and challenges

Spanish firms still have significant scope to adopt and use digital technologies

Digitalisation is defined as the use of digital technologies and data as well as their interconnection that results in new activities or changes to existing activities (OECD, 2019[1]). For example, it enables firms to buy and sell online, to digitalise business processes, and to create digital products or digitise existing ones. There are various digital technologies (Box 2.1), including:

- e-purchases, e-sales and customer relationship management software, allowing for deeper digital market integration;
- Enterprise resource planning software, cloud computing and supply-chain management software, allowing for digitalising business processes and firm re-organisation;
- Radio-frequency identification, leveraging a host of new business models, applications and services.

Box 2.1. Some ground-breaking digital technologies for efficiency and value creation

Internet of Things (IoT): It enables a host of new business models, applications and services based on data collected from devices and objects, including those that sense and interface with the physical world. The IoT includes automations from smart home devices and appliances, wearables and health monitors, to advanced applications like connected and fully automated vehicles (OECD, 2018[2]).

5G, Next-generation wireless networks: It is the first generation of wireless networks in which tens of billions of devices and sensors are connected to the Internet. Apart from higher speeds and faster data transfer, a major difference with 5G is that it is designed to connect not just people, but also things (for example, communication between self-driving vehicles, roads and traffic lights) (OECD, 2019[3]).

Artificial intelligence (AI): It is the ability of machines and systems to acquire and apply knowledge, including by performing a broad variety of cognitive tasks, e.g. sensing, processing language, pattern recognition, learning, and making decisions and predictions (OECD, 2019[1]).

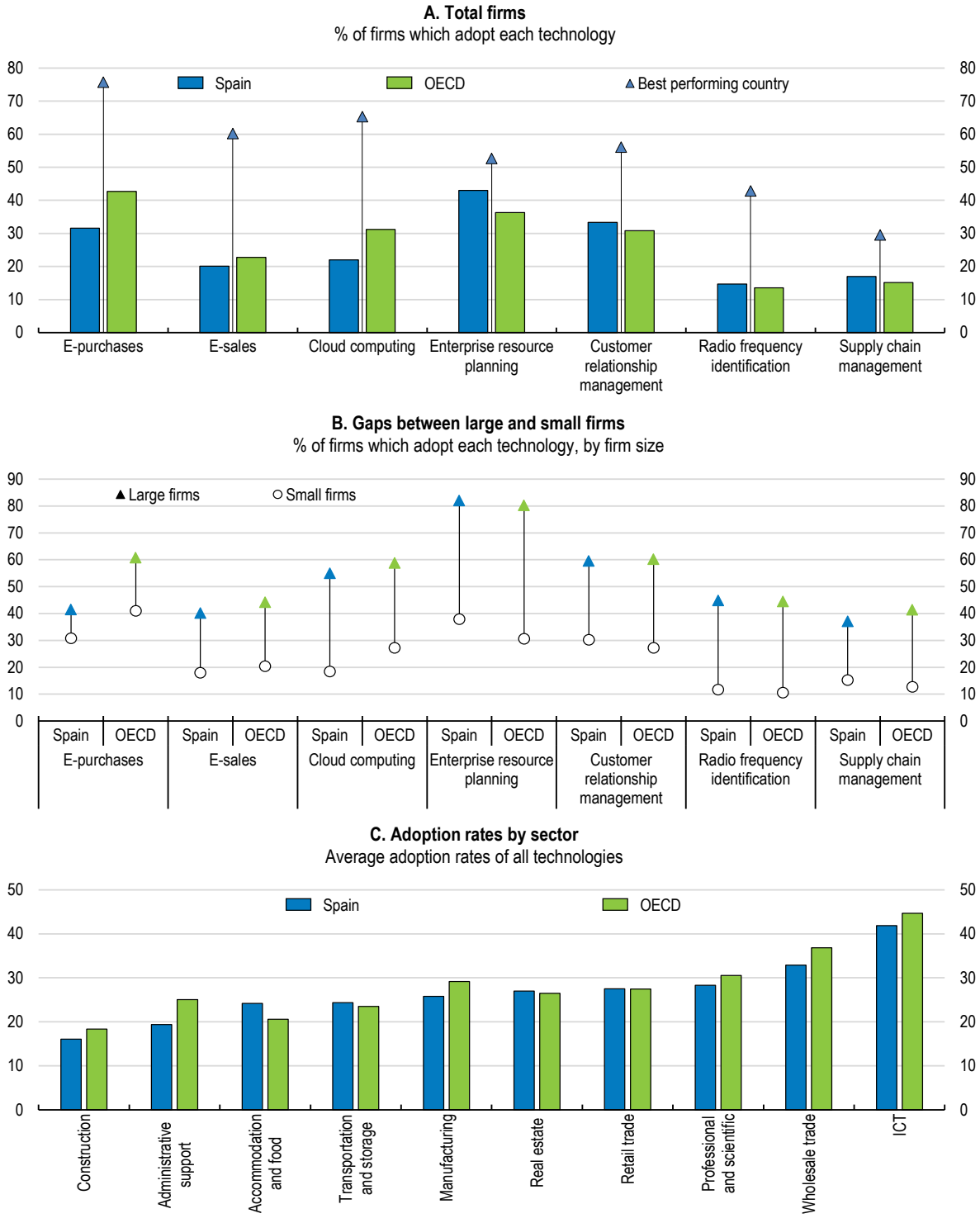
Source: (OECD, 2018[2]); (OECD, 2019[3]); (OECD, 2019[1]).

The adoption rate of these technologies in Spain is close to the OECD average, but is far below the best performer countries in some cases (Figure 2.1; Panel A). There is a large gap in the adoption rates between small and large firms (Figure 2.1; Panel B). However, this gap seems to be smaller than in other OECD countries in many cases, with the exception of cloud computing which is particularly useful for small businesses as it helps them to scale up without incurring a lot of investment in their own equipment. At the sector level, the adoption rates are close to the OECD average (Figure 2.1; Panel C), but seem to be somewhat lower in high value-added sectors, such as professional and scientific activities, and higher in the hospitality sector, possibly reflecting the comparative advantage of the Spanish industry characterised by the high weight of tourism.

In the context of digitalisation, firms are able to and encouraged to implement new business and organisational models. Thanks to digital technologies, information is categorised, coded and stored in standardised digital forms, which allows for reducing business costs. Firms can scale up easily, as marginal costs of selling digital products are low or close to zero. The time necessary to bring a product to market and to sell it diminishes and markets clear faster. Therefore, digital technologies expand business opportunities for individual firms, but they also heighten competitive pressures in the market to reduce costs and adopt new business models, thus shaking up traditional businesses to reinvent themselves.

An increase in e-commerce sales is one such example of changing business models, which contributed to support economic activity during the COVID-19 crisis. E-commerce sales have grown over the past decade, and accounted for 18% of total sales in 2019 in Spain, up from 11% in 2010. The share is slightly lower than the EU average and lags significantly behind a number of other European countries (Figure 2.2; Panel A). The share of e-commerce sales varies significantly across sectors, as their business models differ, and it is the accommodation sector where it is by far the highest, followed by manufacturing (Figure 2.2; Panel B). The way firms sell their products electronically also differs considerably, as simple web sales are dominant in the accommodation sector, while the intercompany communication of business documents in a standard format (electronic data interchange) is frequent in manufacturing firms.

Figure 2.1. The adoption of digital technologies has scope to increase



Note: In the figure, data for e-purchases, supply-chain management, and radio frequency identification relate to 2017; data for cloud computing and e-sales relate to 2018; data for enterprise resource planning and customer relationship management relate to 2019. In the figure, "OECD average" is the average across all OECD countries for which data are available. In Panel B, "Small firms" stands for small enterprises with 10-49 employees, while "Large firms" stands for large enterprises with 250 employees and more. In Panel C, the average of the adoption rates for 7 digital technologies is taken for each sector.

Source: OECD, ICT Access and Usage by Businesses (database).

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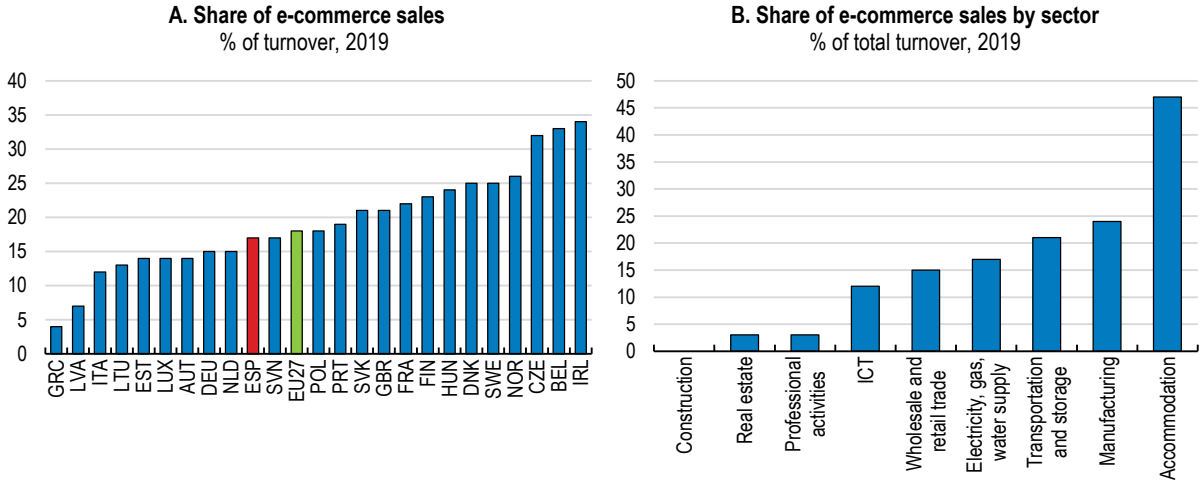
Figure 2.2. E-commerce sales are likely to accelerate further



Note: Data refer to firms with 10 employees or more.
Source: Eurostat.

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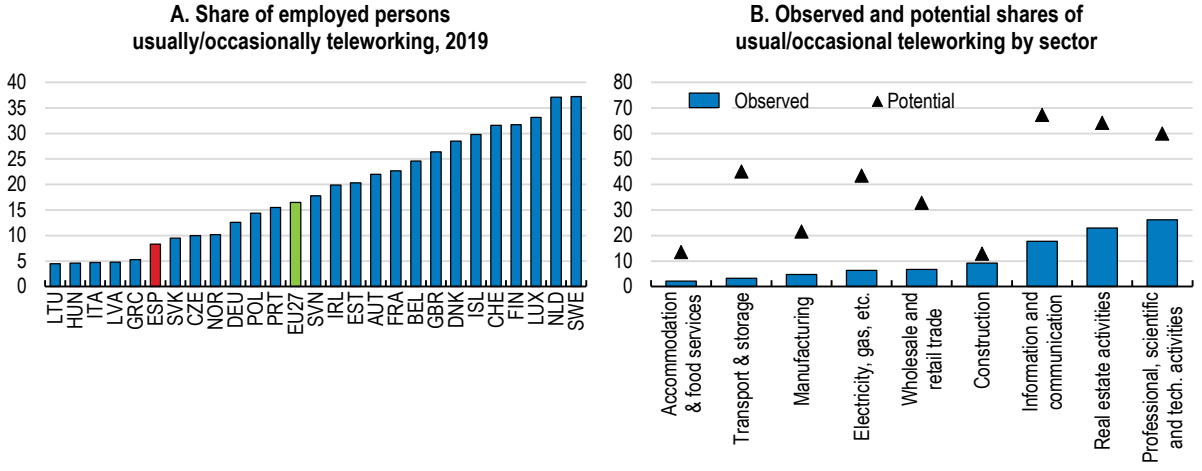
The adoption of teleworking is another example of changing business organisations, which made firms resilient against the negative impacts of the COVID-19 crisis. The extent of teleworking has been limited in Spain compared with other European economies (Figure 2.3; Panel A). Only 8.4% of workers actually teleworked at least occasionally in 2019 according to the Labour Force Survey, although it increased from 6% in 2009. Several factors explain the extension of teleworking. In particular, the industrial structure influences the number of occupations adapted to teleworking. Taking account of the intrinsic characteristics of each occupation, approximately 30% of the employed persons can telework at least occasionally ((Bank of Spain, 2020[4]); Figure 2.3; Panel B). There are also other factors which determine the extent of telework, such as digital infrastructures, managerial capacities and skills of workers (OECD, 2020[5]).

Figure 2.3. Teleworking has scope to develop further



Source: Eurostat, Labour Force survey (database), and the Bank of Spain.

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The COVID-19 crisis has accelerated the digital transformation of the economy. When affected directly by confinement measures, many firms were 'restricted' to increase on-line sales and to shift to full teleworking (Box 2.2). Some of these changes could have been specific to the confinement period as, for instance, full teleworking will not be obliged once confinement measures are lifted. The authorities introduced a new teleworking law in September 2020 to regulate this instrument in the post-confinement period. However, an increase in teleworking to some extent can be a permanent feature, along with other changes after the crisis. For instance, all the activities affected by physical distancing requirements may be permanently smaller after the crisis. Such permanent changes arising from the modification of people's behaviour, such as consumer preferences, imply an acceleration of the digital transformation of the economy. In this context, firms that can effectively leverage the diffusion of digital technologies will grow faster.

Box.2.2. Digitalisation based business processes prompted by the COVID-19 crisis

E-commerce sales

The generalised confinement measures in place in 2020 due to the outbreak of COVID-19 required closing shops with only some exceptions, which increased the utilisation of e-commerce sales. According to the National Commission of Markets and Competition (CNMC), e-commerce sales recorded a year-on-year growth of 11.6% in the first quarter of 2020, which moderated to 0.2% in the second quarter. Such effects differ across sectors, as some had already been adapted to e-commerce sales, they may have been more strongly affected by the generalised confinement and faced a significant contraction of demand (e.g. shops were closed and travels were prohibited, etc.). There is no comprehensive and standardised data, but growth in the sales of companies whose main activity is internet retail trade peaked in May 2020 (growing by 70% on a year-on-year basis), which declined during the summer, but began to increase again, reaching to slightly below 60% in November according to the INE.

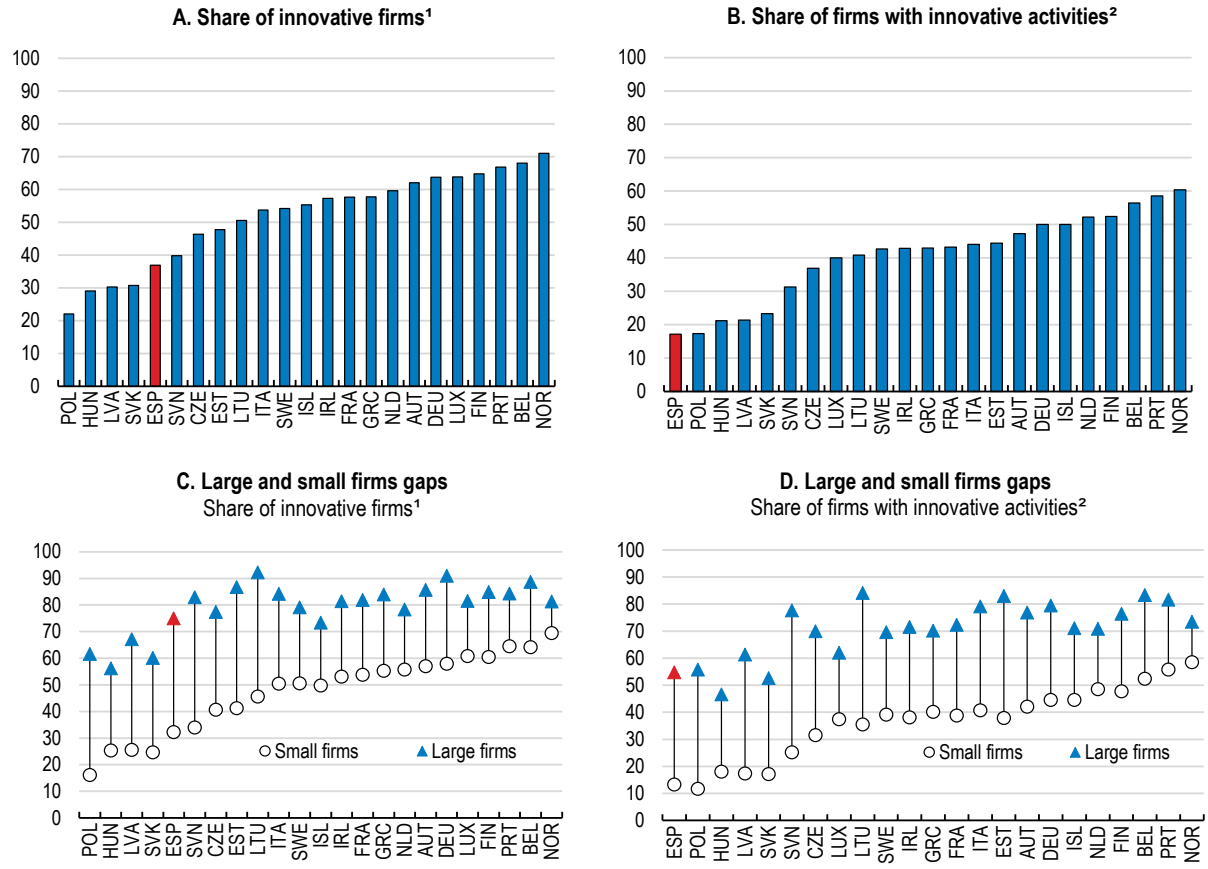
Teleworking

The generalised confinement measures also promoted an increasing use of teleworking, which was an obligation for firms to continue their activity (i.e. firms were shut down unless workers could telework). According to the Bank of Spain survey conducted in the first week of April 2020, 80% of the firms stated that teleworking was proving an essential tool in tackling the crisis. However, the extent to which firms could switch to teleworking varies significantly across sectors and among firms within a given sector. For instance, there is a very limited possibility of teleworking in some sectors, such as construction, hotels and restaurants (Figure 2.3; Panel B). In other sectors, where teleworking can be more widespread potentially (Figure 2.3; Panel B), a large number of firms have likely faced difficulties in introducing this working style immediately if they had not been well prepared in advance.

In order to take full advantage of digitalisation, digital technologies should be effectively used to produce efficient business processes and better products. However, despite high digital adoption rates, many Spanish firms are lagging behind in this respect. For example, the share of innovative firms that introduced new products, new business processes, and/or new business organisation, which digital technologies are supposed to prompt, remains very low in Spain, with a large gap between small and large firms (Figure 2.4; Panels A and C). Furthermore, the share of firms that implemented innovation activities, such as R&D, is the lowest among European countries for which data are available, with also a large gap between small and large firms (Figure 2.4; Panels B and D). The number of patents, the results of ground-breaking innovations, is low with respect to the size of the economy and the share of ICT-related patents is also very low in Spain (Figure 2.5).

Figure 2.4. The adoption of digital technologies has not helped to change business models

2016



1. "Innovative firms" are those which introduced at least one of the 4 types of innovation, product, business process, business organisation and marketing during the period 2014-16.
2. "Innovation activities" are those which implemented product and/or process innovation and implemented at least one of innovation activities, such as R&D and acquisition of equipment or software, during the period 2014-16.
Source: OECD, Innovation indicators; Eurostat, the Community Innovation Survey.

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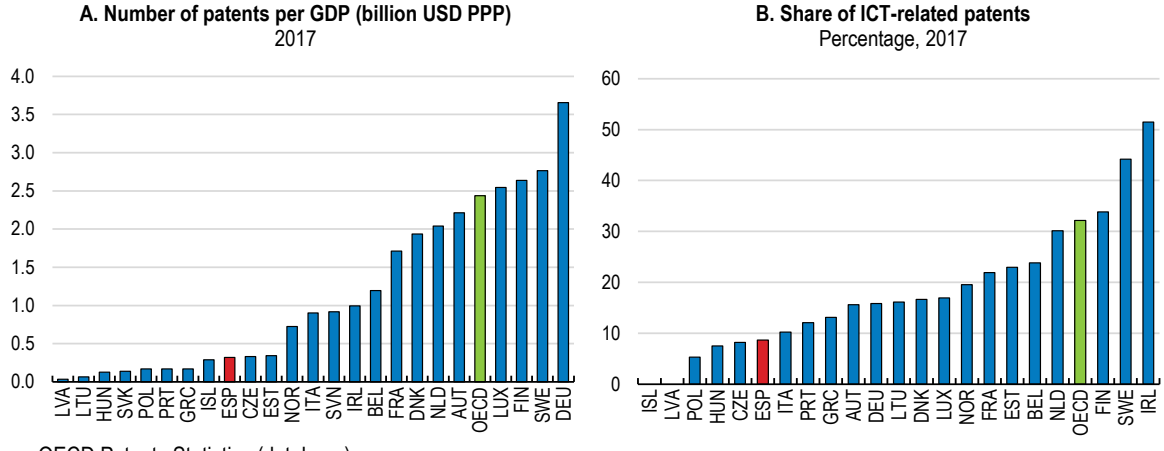
Figure 2.5. Invention has been very limited



Source: OECD Patents Statistics (database).

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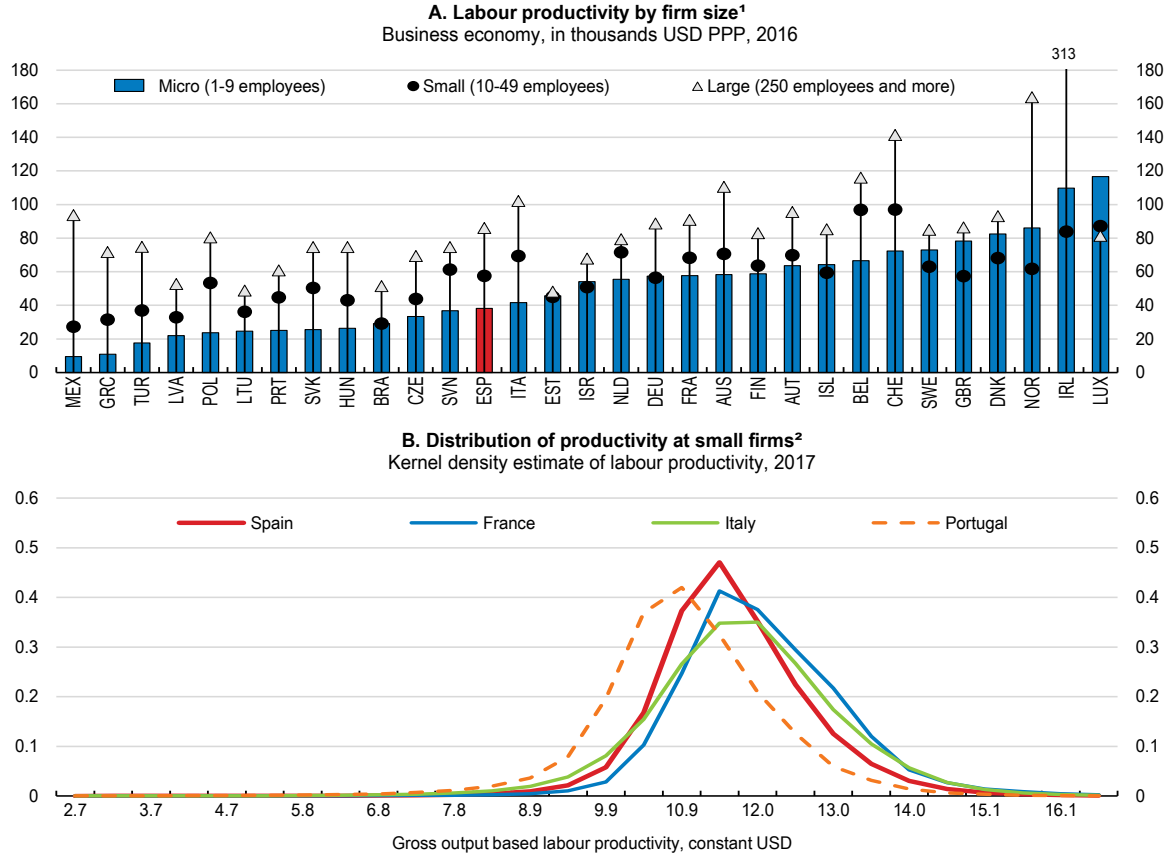
Insufficient intangible capital and low skills impede taking full advantage of digitalisation

Spain faces a dual challenge as productivity growth has stagnated over the past two decades and productivity dispersion across firm size is large (Figure 2.6; Panel A). Cross-country evidence shows that there is a productivity divergence between global best-performing firms and less productive (laggard) firms (Andrews, Criscuolo and Gal, 2019[6]). This can be partly explained by an uneven uptake and diffusion of innovations in the vast majority of firms due to a lack of capabilities and/or incentives for adopting new technologies and best practices (Andrews, Criscuolo and Gal, 2016[7]). The weakness of laggards among small firms (the concentration of firms towards the low end of the productivity distribution) prevails in Spain as in some other European countries (Figure 2.6; Panel B).

The diffusion of digital technologies raises productivity but such positive effects are uneven across firms (e.g. (Gal et al., 2019[8]); Box 2.3). The productivity effects of technology adoption are larger for highly-productive firms in general (i.e. productivity effects are stronger even if the adoption rate is identical across all the firms), which would accelerate productivity dispersion across firms all else equal. The analysis also suggests that the firms that suffer from skills shortages, are penalised in terms of productivity enhancement from technology adoption, which is particularly the case for low productive firms (Gal et al., 2019[8]). These findings show the importance of other complementary factors that determine actual productivity developments jointly with technology adoption.

Figure 2.6. Spanish firms, especially small ones, have low productivity



1. Labour productivity is measured as value added per person employed.
2. Small firms are defined as those with less than 50 employees and productivity is measured in industry-level purchasing power parities (PPP).
Source: OECD (2019), Compendium Productivity, Secretariat's calculations based on the ORBIS database.

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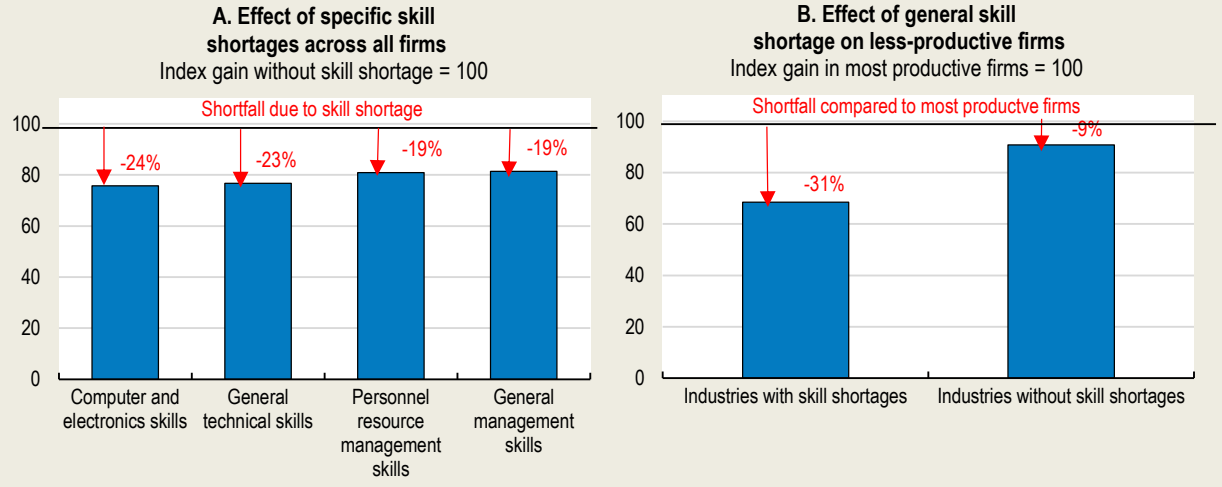
Box 2.3. Productivity effects of digital technologies

According to (Gal et al., 2019[8]) which investigated the impact of digital adoption on productivity at firm level across selected OECD countries, a 10 percentage point increase in the adoption of high-speed broadband would translate into an instantaneous increase in MFP growth by 1.4 percentage points. Similar effects were found for the adoption of other digital technologies, such as cloud computing, enterprise resource planning, and customer relationship management. However, the productivity effects differ depending on firms' capabilities. For instance, when there are significant skills shortages (defined as the value at the 75th percentile in the distribution of skill shortage, as measured by the OECD Skills for Jobs database), positive productivity gains would be 24% less than if there were no skill shortages (defined as the value at the 25th percentile in the same database) for the case of computer and electronics skills (Figure 2.7; Panel A).

The gains from adopting digital technologies differ also depending on firms' productivity level. For instance, if there are no skills shortages, the productivity gain due to digital adoption for less productive firms (defined as those in the third quartile) is 9% lower than that for the 25% most productive firms (the first quartile). Comparing these two categories of firms, when they face skills shortages (defined as above, but measured by a broad indicator of skills, including all the skills covered in Panel A), the productivity gain for less productive firms would be 31% less than that for the 25% most productive firms (Figure 2.7; Panel B).

Figure 2.7. Productivity effects of digital technologies vary by firm characteristics and skill shortages



Note: The estimated equation in Panel A is:

$$\Delta MFP_{f,s,c,t} = \alpha_1 \Delta MFP_{Frontier\ s,t} + \alpha_2 Gap_{f,s,c,t-1} + \alpha_3 \left[Dig\_Adopt_{s,c,\bar{t}} \times Shortage_{s,c,t} \right] + \gamma X_{f,s,c,t} + \delta_{c,t} + \delta_s + \varepsilon_{c,t}$$

where $\Delta MFP_{f,s,c,t}$ is the change in the logarithm of multi-factor productivity (MFP) of firm f, which operates in sector s and country c, in year t. $Dig\_Adopt_{s,c,\bar{t}}$ represents the share of firms in sector s and country c that report using high-speed broadband internet connection. The equation includes an interaction term $Dig\_Adopt_{s,c,\bar{t}} \times Shortage_{s,c,t}$, where technology adoption at sector level in a given country ($Dig\_Adopt_{s,c,\bar{t}}$) is considered jointly with the ICT related skill shortage at sector level in a given country and sector ($Shortage_{s,c,t}$), taken from the OECD Skills for Jobs database. Panel A illustrates how productivity gains differ when there is no significant shortage in each of specific skills (for e.g. computer and electronic skills) which is measured at the 25th percentile of the distribution of skills shortages across sectors and countries, and when there is significant shortage in each of specific skills which is measured at the 75th percentile of the same distribution.

The estimated equation in Panel B is:

$$\Delta MFP_{f,s,c,t} = \alpha_1 \Delta MFP_{Frontier\ s,t} + \alpha_2 Gap_{f,s,c,t-1} + \alpha_3 [Dig\_Adopt_{s,c,\bar{t}} \times Pdty\_Quartile_{f,s,c,t}] + \alpha_4 [Dig\_Adopt_{s,c,\bar{t}} \times Pdty\_Quartile_{f,s,c,t} \times Shortage_{s,c,t}] + \gamma X_{f,s,c,t} + \delta_{c,t} + \delta_s + \varepsilon_{c,t}$$

which includes an interaction term $Dig\_Adopt_{s,c,\bar{t}} \times Pdty\_Quartile_{f,s,c,t} \times Shortage_{s,c,t}$ where technology adoption at sector level in a given country ($Dig\_Adopt_{s,c,\bar{t}}$) is considered jointly with the productivity level of firms, classified into 4 levels ($Pdty\_Quartile_{f,s,c,t}$). Panel B illustrates how productivity gains differ when there is no significant skill shortage, which is measured here by a broad indicator including specific skills covered in Panel A, and when there is significant skill shortage, and compares how this difference is important between productive firms, defined as the 25% most productive firms, and non-productive firms, defined as those between the 50th and the 75th percentile of productivity distribution. All results are based on the estimated link between the adoption of a mix of selected technologies (high-speed internet, cloud computing, ERP and CRM software) and multifactor productivity among EU firms over 2010-15 in Gal et al. (2019). For more details, see Gal et al. (2019).

Source: OECD (2019), "Economic Outlook: May 2019" and Gal et al. (2019), "Digitalisation and productivity: In search of the holy grail: Firm-level empirical evidence from European countries".

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These complementary factors are those related to the effective use of digital technologies leading to new products and/or business models. These complementary factors include, among others:

- Organisational capital and management skills (e.g. (Brynjolfsson and Hitt, 2000[9]); (Bloom, Sadun and Van Reenen, 2012[10]); (Aral, Brynjolfsson and Wu, 2012[11]); (Schivardi and Schmitz, 2019[12]) for European countries including Spain);
- R&D investments (e.g. (Corrado, Haskel and Jona-Lasinio, 2017[13]); (Mohnen, Polder and Van Leeuwen, 2018[14]);
- Human capital and ICT-related skills (e.g. (Cuadrado, Moral-Benito and Solera, 2020[15]) for Spain).

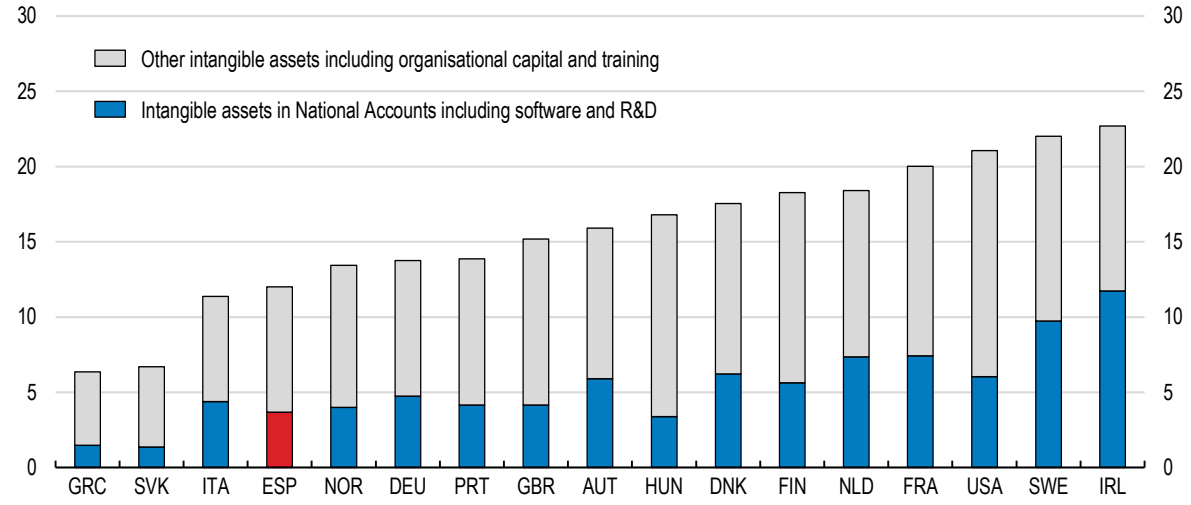
These factors raise productivity themselves as well as through complementarities with digital technologies.

Intangible capital is comparatively low in Spain, both in terms of organisational capital and R&D (Figure 2.8), which hampers technology diffusion. Organisational capital consists of knowledge, know-how and business practices, and is embodied in a firm's management (Squicciarini and Le Mouel, 2012[16]). High-quality management capacity is essential to set up business strategies to take full advantage of digital technologies. R&D is required to make the best use of digital technologies with a view to developing firms' own products and business models. These factors determine the channels through which digital technologies affect the efficiency and productivity of firms effectively.

ICT skills, which are an important part of the mix of skills required in the digital society (see below), are low for low-educated and older people (Figure 2.9). The lack of ICT related skills also hampers the benefits of technology diffusion in Spain (Cuadrado, Moral-Benito and Solera, 2020[15]). In this context, not only narrowly defined ICT specialists, who deploy and manage digital technologies, but also more broadly diffused generic ICT-related skills among people matter, in order to keep up with the changing technological environment. ICT skills among workers who use digital technologies on the ground are essential to reap the benefits from changing business practices and activities prompted by these technologies. ICT skills will be demanded more than ever, as the process of digital transformation and the associated reallocation of jobs are likely to accelerate following the COVID-19 crisis. This would require strengthening policy support in job training for the unemployed (see Chapter 1) and life-long learning (see below).

Figure 2.8. Investment in intangible assets is low

Investment in intangible assets as a percentage of business sector's GVA, 2015



Note: Intangible assets in National Accounts include intellectual property products, such as R&D, computer software and databases; other intangible assets include a range of knowledge assets that may have no intellectual property rights, such as organisational capital that is measured by means of the value of the inputs devoted to the building up of such assets.
Source: OECD Productivity Indicators (database), and OECD (2017), Science, Technology and Industry Scoreboard 2017: The digital transformation.

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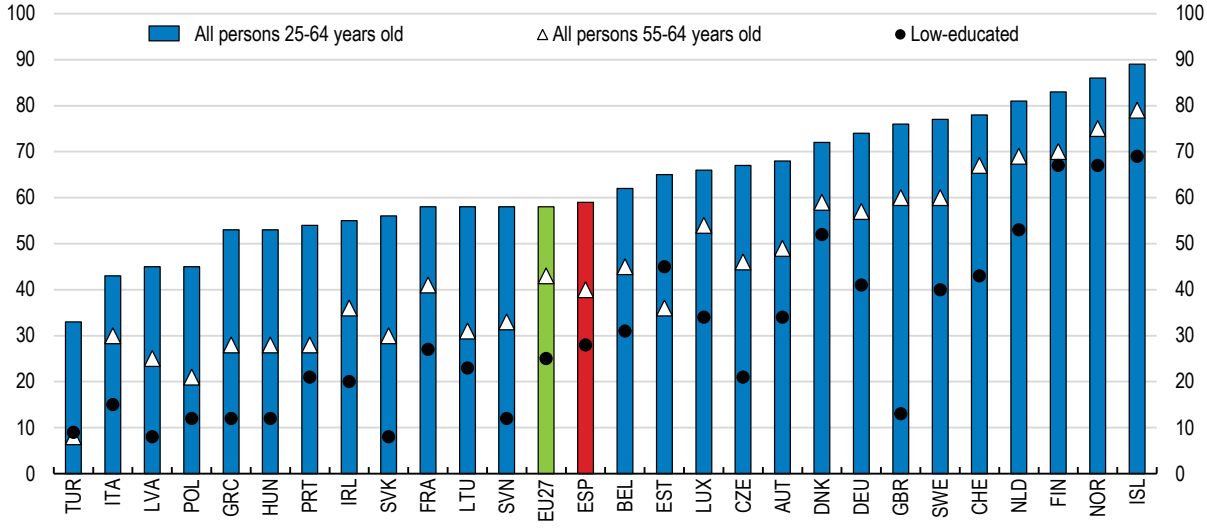
Figure 2.9. There is room to develop digital skills

Percentage of respondents claiming to have basic digital skills, 2019



Source: Eurostat, Digital skills (database).

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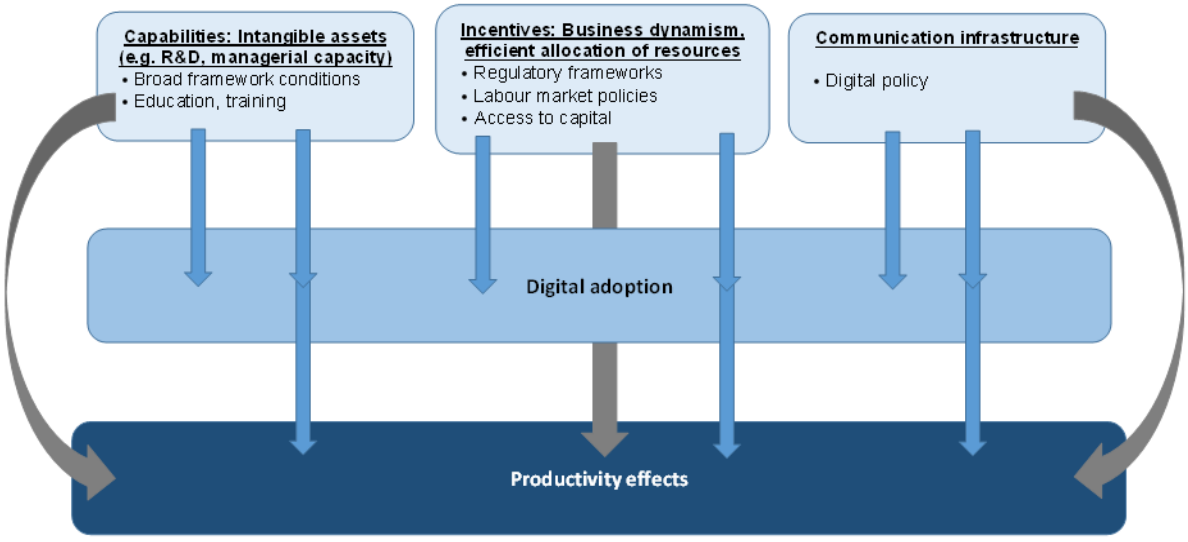
Policy reforms can boost productivity through digital diffusion

There are a number of identified drivers of technology diffusion (Figure 2.10; (Andrews, Nicoletti and Timiliotis, 2018[17])). Among such drivers, communications infrastructure is prerequisite to adopt and use digital technologies, which is more directly affected by policy through, for instance, outright broadband roll-out schemes. This should be supported by other policies, which raise competitive pressures and sharpen incentives to better use digital technologies, such as further regulatory reforms, including labour market policies, insolvency regimes, and better access to finance. These will strengthen firms' capabilities through improving managerial capacity and incentivising intangible investment. Finally, there are policy actions that can more directly enhance their capabilities, such as knowledge transfer and job training of workers.

Figure 2.10. Determinants of digital diffusion and productivity effects



Source: The Secretariat's elaboration based on Andrews et al. (2018), "Digital technology diffusion: a matter of capabilities, incentives or both?".

Against this background, this chapter explores the three driving forces to promote digitalisation, taking account of policy initiatives, such as the new digital strategy "*Digital Spain 2025*" and its associated plans (Box 2.4). First, it examines the coverage and quality of communication infrastructure, which the new digital strategy aims to enhance. Then, the chapter discusses the capabilities of firms and people to take full advantage of digitalisation, taking account of the simultaneous initiatives by the Spanish government, such as the new *Strategy for Science, Technology and Innovation*, *the National Plan for Digital Skills*, and the *Modernisation Plan for Vocational Training*. Finally, the chapter discusses the business environment, which has an influence on incentives for making use of digital technologies, taking stock of recent policy actions, such as comprehensive product market ("the Market Unity Law") and insolvency regime reforms.

Box 2.4. The new digital strategy: "Digital Spain 2025" and associated plans

The new strategy "Digital Spain 2025", which renews the previous Digital Agenda adopted in 2013, consists of a wide range of measures, reforms and investments, organised around 10 strategic axes. The actions contained in the strategy aim to promote a sustainable and inclusive form of growth, to reach the whole society and to reconcile new opportunities provided by digitalisation. Following this new strategy, new plans for the promotion of broadband connectivity and 5G will be adopted soon.

The 2025 goals are:

i) broadband coverage of all the population with a contract speed of 100Mbps or more;

ii) 100% of the radio spectrum for 5G to be assigned;

iii) 80% of people having basic digital skills;

iv) 20 000 new specialists in cybersecurity, artificial intelligence (AI) and data;

v) 50% of public services available on mobile apps;

vi) 25% of SME business volume generated by e-commerce;

vii) 10% reduction in CO_2 emissions through digitalisation;

viii) 30% increase in audio-visual production;

ix) 25% of firms using AI and big data; and

x) a national charter of digital rights.

This strategy is associated with a number of national plans with concrete priorities and investments to be made in the years to come. These include:

- The Plan for the Promotion of Broadband Connectivity and 5G;
- The National Strategy on Artificial Intelligence;
- The National Plan for the Digitalisation of Public Administrations;
- The National Plan for the Digitalisation of SMEs;
- The Audiovisual Sector Plan;
- The National Plan for Digital Skills.

Source: The Government of Spain.

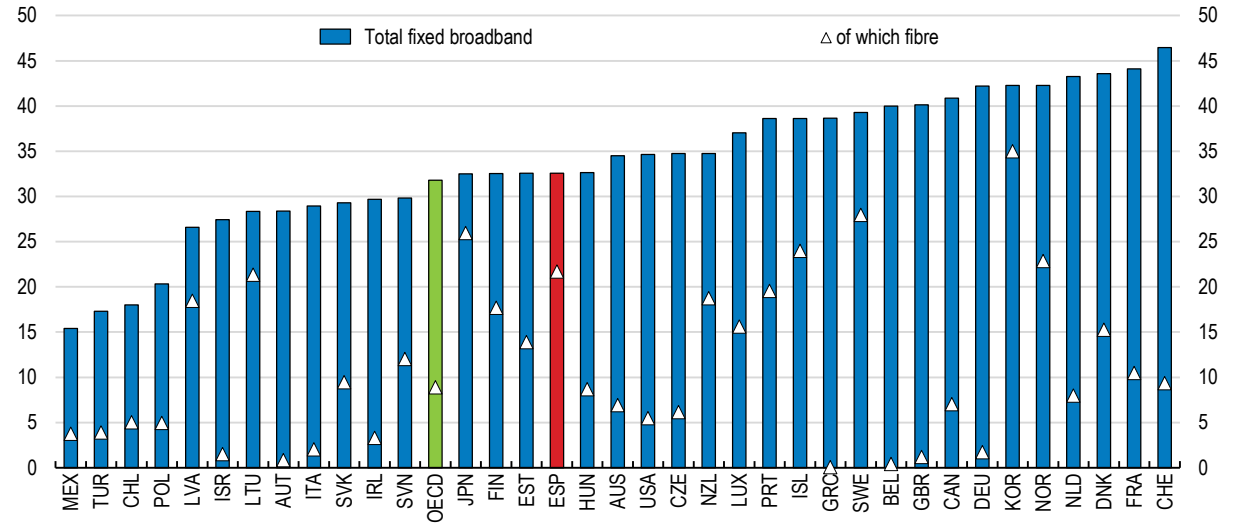
Ensuring communication infrastructure for all

Communication infrastructure underpins the adoption and use of digital technologies. Broadband has emerged as a modular general-purpose technology that supports a variety of traffic types, applications and devices, including transformative technologies like cloud computing and the Internet of Things (Box 2.1) (OECD, 2019[1]). Cross-country evidence finds a strongly significant and positive association of high-speed broadband penetration with the adoption rate of digital technologies (Andrews, Nicoletti and Timiliotis, 2018[17]). This underscores the need for ubiquitous broadband deployment, in order to ensure a level playing field for all. One of the major objectives of the new digital strategy "Digital Spain 2025" is to ensure high-quality broadband connectivity with a contract speed of 100Mbps or more for all the population by 2025. The national recovery plan allocates EUR 13 billion to promoting sustainable, safe and connected mobility.

Spain performs well in terms of connectivity, based on broadband developments, according to the Digital Economy and Society Index by the European Commission and OECD indicators. The number of broadband subscriptions in Spain is close to the OECD average, but the share of fibre networks in total broadband subscriptions is higher than in many other countries (Figure 2.11). Indeed, the deployment of high-speed broadband connections distinguishes Spanish communication infrastructures from other EU countries. The take-up rate of broadband connections of at least 100 Mbps among Spanish households has reached 52.9% in 2019, which is well above the EU average.

Figure 2.11. The share of fibre in total fixed broadband subscriptions is high

Fixed broadband subscriptions per 100 inhabitants by technology, 2019



Source: OECD Broadband Database.

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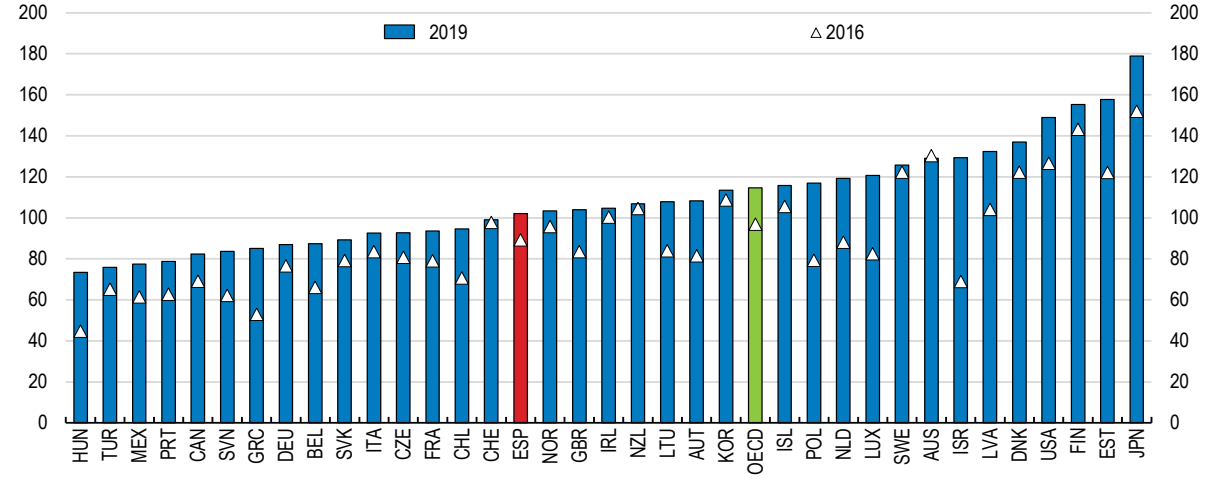
The number of mobile broadband subscriptions has increased over the past years so that it surpassed the number of inhabitants (Figure 2.12). Simultaneously, the deployment of 5G networks is currently underway, which enables new business cases to emerge. In Spain, the deployment of 5G networks is facilitated by the widespread fibre networks, which offload mobile traffics into fixed networks. For instance, around 60% of data uploaded and downloaded on devices such as smartphones used fixed networks through Wi-Fi (OECD, 2018[2]). Efficient spectrum management is also essential for the development of 5G wireless networks (OECD, 2019[3]). In Spain, 45% of the spectrum (which meets the technical conditions specified by EU law) has already been assigned for 5G use, which is well advanced compared with other EU countries (European Commission, 2020[18]). The four main communication operators (i.e. Vodafone, Telefónica, Orange and Másmóvil) are already offering 5G commercial services.

The share of individuals using the Internet is high in Spain (Figure 2.13), on the back of advanced broadband networks. The shares of Internet users performing relatively more complex activities, such as online purchases, e-banking, and use of government services, are close to the OECD average (OECD, 2020[19]). The extent to which people perform these activities depends on various factors, such as people's ICT skills and their trust in digital security. It also depends on the availability of services, underpinned by the development of high-quality communication infrastructures, such as the availability of digital government services and commercial products sold on-line. Policies to promote the use of digital technologies in households and by individuals are usually related to wider issues, such as ICT education, digital skills and literacy, communication infrastructure, cybersecurity and trust, and e-government efficiency (OECD, 2020[19]).

Figure 2.12. Mobile broadband subscriptions have increased

Mobile broadband subscriptions per 100 inhabitants



Source: OECD Broadband Database.

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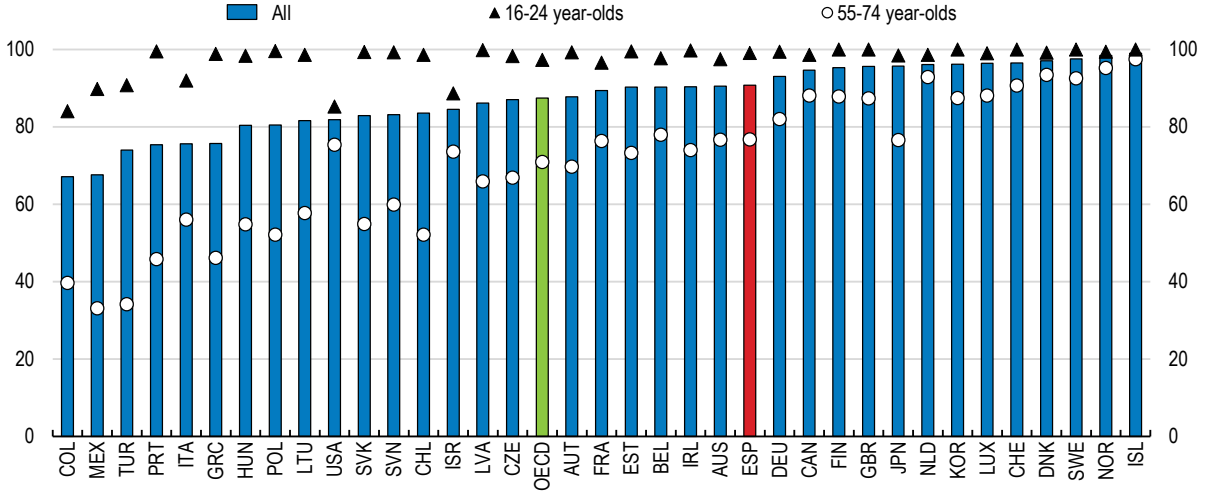
Figure 2.13. Internet usage is relatively widespread in Spain

Internet users by age as a percentage of the population in each age group, 2019



Note: Internet users are those having used the Internet in the last 3 months, except for Colombia and Japan (last 12 months) and the United States (any time). Data refer to 2019 except for Australia (the fiscal year ending 30 June 2017), Brazil, Canada, Colombia, Japan and Mexico (2018) and Chile, Israel, Switzerland and the United States (2017). Data refer to age groups 16-74, 16-24 and 55-74 except for Israel (20-74 and 20-24), Japan (15-74 and 55-74). OECD data figures are based on a simple average of the available countries.
Source: OECD (2020), ICT Access and Usage by Households and Individuals (database).

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The Spanish telecommunication sector performs well

Competition in the communication sector can positively influence investment and pricing decisions and can drive up the overall quality and speed of broadband offers. Laws or regulations in place have lowered barriers to entry to the communication market and have contributed to an expansion of fibre networks. In the case in which an operator has substantial market power in each segment of the market, appropriate

regulations are adopted. For instance, the operator with substantial market power is required to provide access to infrastructure to others and the prices of the related products are regulated. Finally, retail tariffs for all services are not regulated or approved by the public authorities. Fixed broadband prices for Spain are high, but this largely reflects the overall quality of services, such as the speed of connections and packages with multiple services (European Commission, 2020[18]). The take-up rate of broadband connections of at least 100 Mbps has grown significantly.

The Spanish telecommunication operators have been actively engaged in expanding their activity, including through infrastructure sharing. Infrastructure sharing (for instance, fibre, ducts and masts) is one way to promote competition in telecommunication markets, particularly where markets are characterised by a dominant player (OECD, 2019[1]). In Spain, such infrastructure sharing has helped to increase the deployment of fibre networks closer to the end user (OECD, 2019[1]).

Co-investment arrangements, whereby two or more operators co-invest in network deployment, can increase competition and coverage (OECD, 2019[1]). Some arrangements have emerged in Spain as a way to lower deployment costs and thus financing constraints. However, there is a risk that such arrangements could distort competition. The impacts of such arrangements and the ideal conditions for network access for third parties depend on local market conditions and factors, such as the number of operators and the areas of co-investment, and the overall effect is unclear at this stage (Godlovitch and Neumann, 2017[20]). The Spanish authorities welcome such arrangements insofar as they do not harm competition and should continue to monitor them closely.

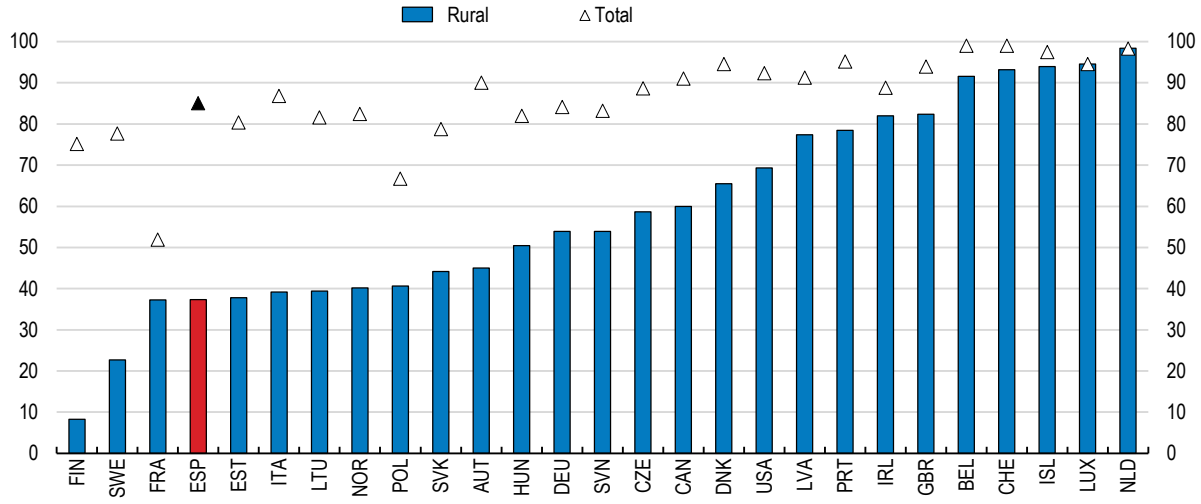
The digital divide between urban and rural areas should be reduced

There is a digital divide between urban and rural areas, with a large difference in the coverage of high-quality broadband access between them (Figure 2.14). The digital divide declined in the last two years, as the coverage of fibre networks in rural areas is 46%, which is well above that in other European countries (21%), but the gap between urban and rural areas in Spain remains. As in the majority of OECD countries, private investment is the largest source of investment in communication infrastructure in Spain. Rural and remote areas are less attractive for commercial operators given deployment costs, as core networks are typically located closer to densely populated areas, thus requiring further investment. As a result, there are some rural and remote areas, where there is no current or planned coverage by any private operator in the coming years. Against this situation, the latest calls for public financial support to develop broadband networks have targeted rural areas, in particular, towns with less than 1 000 inhabitants.

One effective way to ease infrastructure deployment is through a reduction of approval and construction times. Therefore, many OECD countries are aiming to streamline “rights of way” – digging up streets, laying cables, and installing masts, antennae and other infrastructure – (OECD, 2021[21]). The main areas of excessive regulation in Spain are local licencing requirements prior to the deployment of telecommunication antennas, power supply licence requirements prior to deployment works of radio stations, and planning permission requirements prior to the deployment and operation of antennas and radio stations. The current legal framework establishes a set of measures to reduce deployment costs, including permit exemptions for the installation of certain radio and cable infrastructure. To progress in this area, the authorities should reduce excessive regulatory burdens to “rights of way” to lower deployment costs and encourage investment.

Figure 2.14. High-speed broadband access is low in rural areas

Households in areas where fixed broadband with a speed of 30 Mbps or more is available, as a percentage of households in the total and rural categories, June 2017



Source: OECD (2019), Measuring the Digital Transformation.

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The access to "rights of way" differs across regions and municipalities, which creates barriers to infrastructure deployment. To avoid fragmentation of permits for infrastructure deployment, which do not conform to legislation, a coordination mechanism was adopted in the Spanish electronic communications legal framework. Within this framework, regions and municipalities are subject to the approval of the central government for their project of urban planning or other sorts of regulations, which relate to electronic communication networks deployment. The central government examines the content of such regulations and assesses whether they comply with the regulatory framework. Over the past years, regions and municipalities have modified their rules to conform to legislation. Such efforts to streamline the access to "rights of way" across different regions and municipalities need to be extended, with a view to establishing as uniform a practice as possible (OECD, 2018[22]).

The authorities can finance investments undertaken by private operators to solve critical bottlenecks in rural areas, as they are better placed to take a longer-term and broader view of returns. Indeed, as part of the National Broadband Plan, the authorities have provided financial support for the roll-out of broadband networks in underserved areas. The 2019 call awarded EUR 140 million in grants to fibre network deployment projects to provide coverage to half a million households. A new scheme, worth EUR 400 million to roll out infrastructure capable of providing speeds of 300 Mbps to more underserved areas in 2020-22, was declared as compatible with EU State aid rules in December 2019. While these will help lower the digital divide, there is a limit to these types of financial support as they can conflict with state aid rules.

The authorities can also undertake public investment directly in key communication networks could also help solve critical bottlenecks in rural areas, by complementing private investment. Across OECD countries, such public investment has been associated with open access policies so as not to encourage monopoly power in underserved areas (OECD, 2018[22]). Implementing open access arrangements is an increasingly common approach to avoid duplication of resources and focus on the timely expansion of services to reach the widest level of network coverage through optimised roll-out and investment plans (OECD, 2019[1]). In rural areas, where non-broadband infrastructures remain underdeveloped, adopting a "dig once" policy to leverage broadband infrastructure projects is advisable, as it reduces considerably the costs of broadband expansion (OECD, 2018[22]).

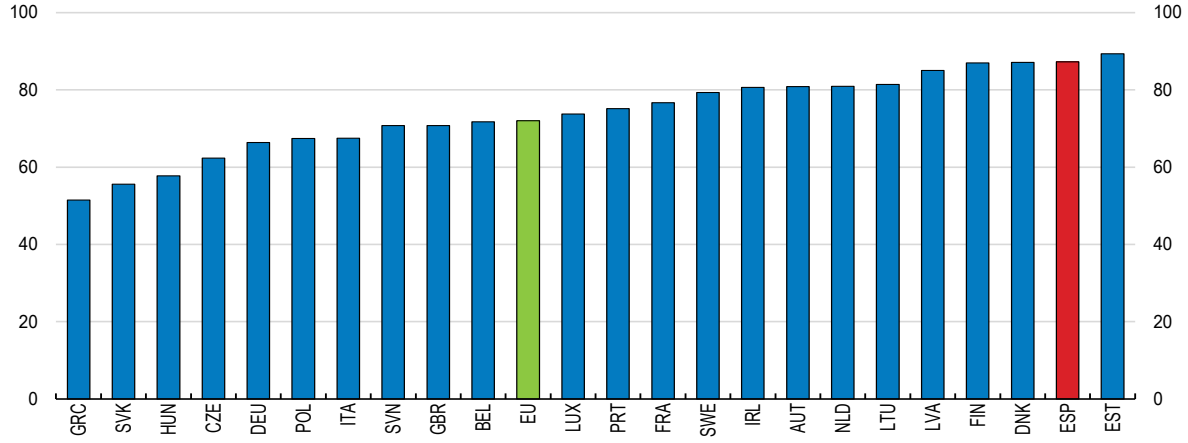
Providing information on the location of existing infrastructure and on planned construction work can also help investment, as it reduces search costs by operators. In 2019, the government approved a regulation on the "Single Information Point". In this platform, information on existing and planned physical infrastructures is provided by network operators, and access requests can be made by electronic communications operators. In addition, municipalities and other public bodies provide all the information concerning the required authorisation and processes in order to deploy electronic communication networks. The platform is currently operational, but few operators have signed up yet. The signing-up by operators can be made mandatory to ensure the full coverage of information.

Digital public services are an integral part of the digital transformation

To enable digital transformation across the economy and society, governments need to go digital themselves. Governments can digitise existing processes and offer public services online, while consumers and businesses increasingly become familiar with new digital forms of communication. Spain performs well in terms of digital public services, as it ranks second across EU countries (Figure 2.15), which measures the online interaction between public authorities, citizens and businesses. This reflects, in particular, the government's commitment to open data: over 98% of all services are digital-ready, due to the timely implementation of the 2015-20 ICT strategic plan and the well-developed ICT architecture. This also reflects the advancement in pre-filled forms, thanks to inter-connected registers, allowing users not to resubmit the same data to the public administration. Finally, the provision of on-line health services has advanced in Spain compared with other EU countries (Box 2.5).

Figure 2.15. Online services in public administration are advanced

Digital Economy and Society Index: Digital Public Services, score from 0 to 100, 2020



Note: "Digital Public Services" is one of the 5 dimensions in the Digital Economy and Society Index by the European Commission. This dimension measures both the demand and supply sides of digital public services as well as open data. Specifically, it measures: e-Government users, Pre-filled forms, Online service completion, Digital public services for businesses and open data. More details can be found in the Digital Economy and Society Index Report 2020.

Source: European Commission, Digital Economy and Society Index Report 2020.

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The authorities should complement these measures with policies to promote the utilisation of digital services among citizens effectively. The latter is high, when measured by the frequency of the submission of documents on-line according to the EU Digital Economy and Society Index. However, it is less frequent when a broader range of digital services are considered, such as consultation with the public administration on-line (OECD, 2020[19]). This may reflect the quality of digital services offered and digital security. Moreover, there is a marked difference in the share of those who use these services between high- and low-educated people (OECD, 2020[19]), which most likely reflects the lack of digital skills.

Box 2.5. E-health to make the health system efficient and resilient

The provision of on-line health services (e-health) can improve safety and cost-effectiveness, and can in some cases lead to better health outcomes than conventional face-to-face care (Oliveira Hashiguchi, 2020[23]). E-health turned out particularly beneficial in the context of the COVID-19 pandemic by allowing continuity of certain health care in times of social distancing while reducing infectious exposure (CDC, 2020[24]).

Spain ranks relatively well in the provision of e-health. According to the Digital Economy and Society Index (European Commission, 2019[25]), 29% of people in Spain have used online health care services without having to go to a hospital or a doctors surgery (for example, by getting a prescription or a consultation online), compared with 18% of people in the EU in 2017. 68% of general practitioners used electronic networks to exchange medical data with other healthcare providers and professionals, which compares with 43% in the EU in 2018. 74% of general practitioners have used electronic networks to transfer prescriptions to pharmacists (electronic prescriptions), while only about half of general practitioners have used such prescriptions in the EU in 2018.

The regional authorities have taken measures, such as the creation of comprehensive health web portals. Several of them have already implemented e-health mobile applications that allow patients access to information concerning them through their smartphones.

Source: Oliveira Hashiguchi, 2020; CDC, 2020; European Commission, 2019.

The new digital strategy, "Digital Spain 2025", promotes the digitisation of public administration, particularly in key areas, such as employment, justice, or social policies. The strategy is complemented by the National Plan for Digitalisation of Public Administration (Box 2.4). It aims to streamline the delivery of public services and promote investments and reforms foreseen in the strategy, which is welcome and should be fully rolled out. Currently, digital public services are not fully utilised in public administration in certain aspects. For instance, this is the case for public procurement, which is attributed to the lack of resources among contracting authorities. More human and material resources should be provided to these contracting authorities to expand digital services, which can make public procurement proceedings more competitive and transparent.

The National Strategy on Artificial Intelligence (AI) can also help, as it aims to boost the use of AI in public institutions and in national strategic missions. Its other pillars are to boost scientific research, technological development and innovation in AI, foster digital skills, attract international talent, develop data platforms and technological infrastructures that provide a support network for AI, integrate AI in the value chains to transform the economic structure and establish an ethical and regulatory framework that guarantees the protection of individual and collective rights.

Cybersecurity underpins the digital transformation of the society

Digital security ensures the smooth operation of digitalised activities and promotes digitalisation by earning people's trust. Digital security incidents harm businesses, governments and individuals by undermining the availability, integrity and/or confidentiality of their data, information systems and networks. For businesses, they can notably result in loss of reputation, theft of innovation assets, or disruption of operations. In 2019, 12% of firms in Spain experienced digital security incidents with implications for the availability of digital services, the destruction or corruption of data, or the disclosure of confidential data, close to the EU average of 13%, according to Eurostat.

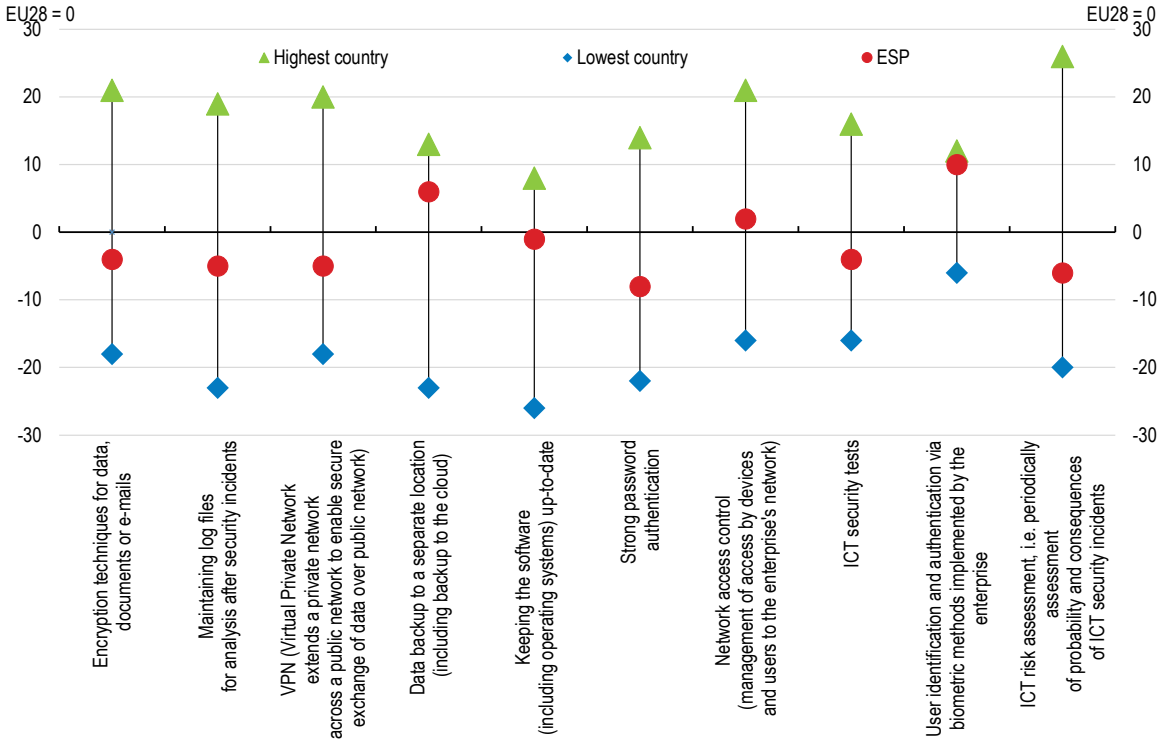
Overall, Spain is well committed to cybersecurity, as it ranks 7th out of 175 according to the Global Cybersecurity Index (which evaluates legal, technical, and organisational measures as well as cooperation and capacity building). Moreover, the new National Cybersecurity Strategy 2019 has guided Spain's actions in cybersecurity, in particular, regarding the evolution of digitalisation, new risks and threats, which was also adapted to new legal and strategic frameworks at the national and international level. The strategy created the National Cybersecurity Forum, and has promoted R&D in cybersecurity. Spain continues to make progress in improving cybersecurity capacities and promoting research through specific R&D programmes (see below).

One of the key challenges for policy makers is promoting digital security risk management as a priority for a digital security strategy (OECD, 2020[19]). There is some scope for Spanish firms to improve digital security risk management (Figure 2.16), in particular, digital security risk assessment. The regular assessment of the likelihood and potential severity of consequences of digital security incidents is at the core of digital security risk management (OECD, 2015[26]). It conditions which security measures are needed and in which context. In Spain, the National Institute of Cybersecurity (INCIBE) promotes awareness and training in digital security by offering a wide variety of services to cover the essential aspects of cybersecurity. Among them, the Awareness Kit is designed to understand the state of cybersecurity and what is needed to improve it, providing a self-diagnosis tool and specific plan for implementation. The National Cybersecurity Forum will also promote the improvement of digital security risk management.

Capacity building is usually one of the main pillars of the national digital strategies, ensuring a sufficient pool of practitioners for digital security risk management (OECD, 2020[19]). One of the objectives of the National Cybersecurity Strategy is to enhance the culture and commitment to cybersecurity and strengthen human and technological skills. The new digital strategy, "Digital Spain 2025", includes an objective to strengthen cybersecurity by increasing the number of cybersecurity, Artificial Intelligence and data specialists to 20 000 in 2025. This will require coordination with other ministries not often involved in digital security policy, but also complementing initiatives. This initiative should encompass, among others, the new vocational education and training (VET) plan, which aims to increase the pool of digital security talent. If implemented as planned, this would improve digital security risk management among Spanish firms.

Figure 2.16. Digital security measures can be strengthened further

Percentage of the enterprises (10+ employees) implementing digital security measures, 2019



Source: Eurostat, Security policy: measures, risks and staff awareness database.

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Enhancing capabilities to make full use of digital technologies

The capabilities of firms and people are crucial for the effective adoption and use of digital technologies and innovation that can result from it. Policies can promote investment in intangible assets through R&D support and partnerships between firms and research institutes for business-oriented research. Policies are particularly relevant in terms of developing people's skills through formal education and lifelong learning. These policies are found to raise the adoption of digital technologies (Andrews, Nicoletti and Timiliotis, 2018[17]) and boost productivity gains from digital adoption ((Gal et al., 2019[8]); Box 2.3). Taking account of these complementarities, training/skills policies and innovation/investment policies should be decided in greater connection to boost firms' investment and innovation activities.

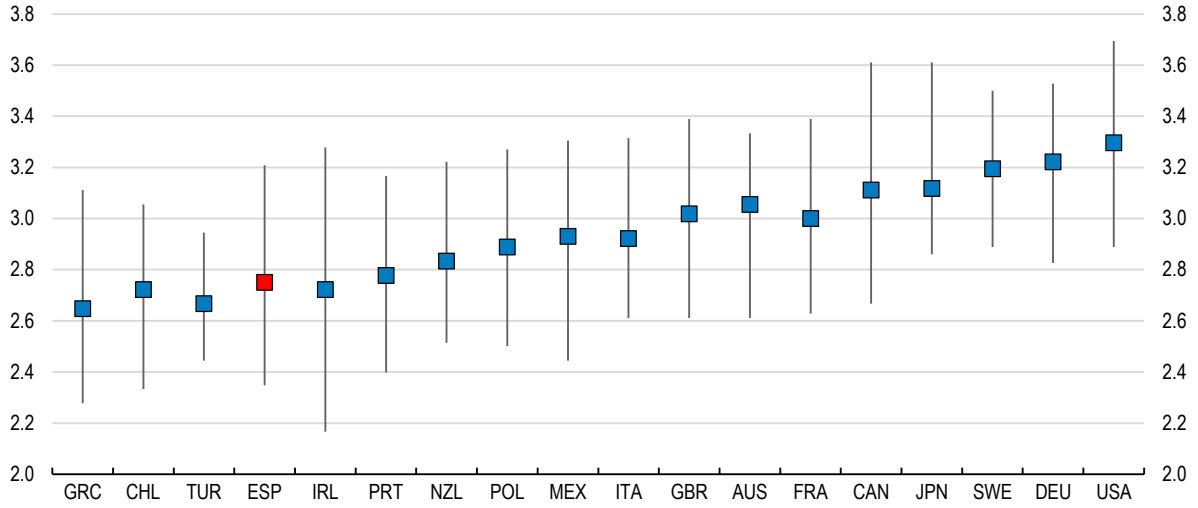
Some policies can directly promote the adoption of digital technologies. The national recovery plan allocates EUR 4 billion to the digitalisation of SMEs, mainly through the implementation of the National Plan for Digitalisation of SMEs. The Plan covers basic digitalisation for SMEs, business training for executives in digital skills, disruptive innovation and entrepreneurship, support for digitalisation in some specific sectors, such as tourism, and promotes coordination. The Plan aims to reach 1.5 million SMEs (equivalent to a half of all SMEs in Spain). While it is difficult to assess this plan yet, the authorities should ensure the measures reach those who need them most. Moreover, in order to boost productivity together with further developments in digitalisation, the Plan should be implemented, while addressing structural barriers to boost productivity simultaneously.

Intangible capital and innovation to foster digitalisation

Organisational capital, defined as knowledge, know-how and business practices, and embodied in a firm's management, is a fundamental condition to make the most use of new technologies within each firm. Digital adoption is found to be more widespread in environments characterised by high quality management (Andrews, Nicoletti and Timiliotis, 2018[17]). Organisational capital is low in Spain (Figure 2.17). This metric of organisational capital, which investigates management practices related to processes, monitoring, targets and incentives, is significantly associated with the degree of competition in product markets and the prevalence of family-owned firms (Bloom and Van Reenen, 2007[27]). Such managerial practices are chiefly a matter of businesses, but policies can influence them by strengthening business dynamism and market discipline (see below).

Figure 2.17. The quality of management practices is low

Scores from World Management Survey



Note: The figure shows the distribution of management scores across countries for randomly sampled medium-sized firms with 50 to 5000 employees in manufacturing from 2004 to 2014. The countries in the figure are ranked by country-level average management scores. The square indicates the country's median and the line indicates the country's 25th and 75th percentile and its median. Management scores are taken from (Bloom et al., 2014), and comprise average scores of all firms sampled from 2004 to 2014. Management scores reflect the simple average of 18 items of management practices, which have been scored from 1 (worst) to 5 (best) based on detailed surveys with the respective firm's managers. Items surveyed comprise managerial practices on target setting, monitoring and incentivizing.
Source: OECD calculations based on World Management Survey (Bloom et al., 2014).

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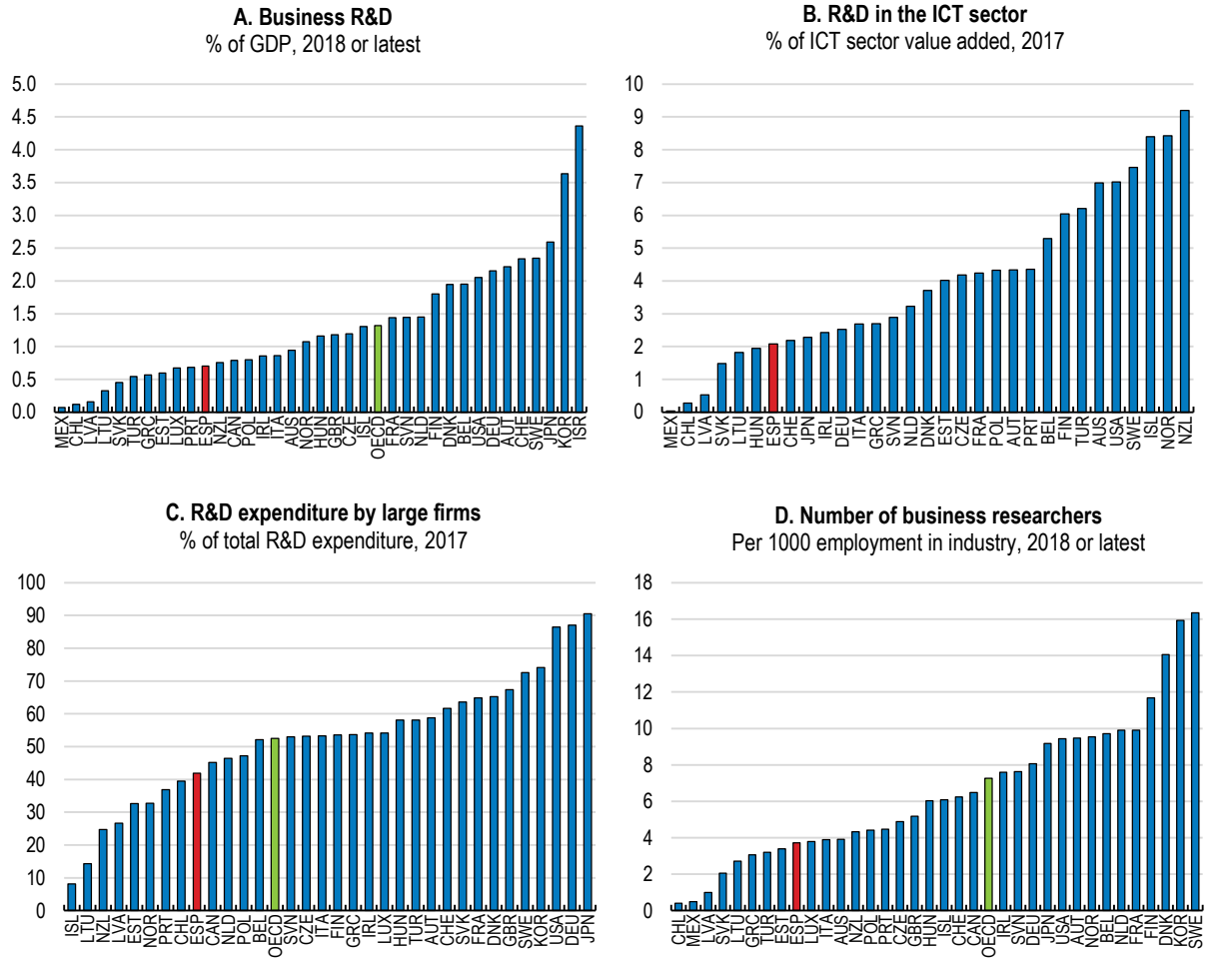
R&D activity raises the ability to experiment with business processes, new products, and thus business models made possible by digital technologies. However, business R&D investment remains low in Spain (Figure 2.18; Panel A). Business R&D in knowledge-intensive sectors, such as ICT, is low (Figure 2.18; Panel B), although digitalisation-related R&D also takes place in other sectors. Overall, large firms tend to invest more frequently in R&D and spend larger amounts in R&D investment in comparison with smaller firms in Spain (García-Posada, Menéndez and Mulino, 2020[28]). Nonetheless, the share of large firms in total business R&D is very low by international standards (Figure 2.18; Panel C). Finally, the number of R&D researchers in the business sector is significantly lower (Figure 2.18; Panel D), implying capacity constraints to conduct business R&D.

The new *Science, Technology and Innovation Strategy 2021-27* was introduced in 2020 to consolidate and reinforce the science, technology and innovation system in all fields, including digital technologies (Government of Spain, 2020[29]). The Research and Development State Plans 2021-23 will be introduced soon to support its implementation. The Strategy envisages to double the amount of public and private

R&D spending by 2027, and the budget of the Ministry of Science, Technology and Innovation has increased by around 60% to EUR 3.2 billion in the Budget 2021. This reflects the *Shock Plan* (EUR 1.06 billion), introduced in July 2020, which aims to respond to the need to promote and strengthen the public and private R&D as well as the innovation system. This also reflects the *Recovery, Transformation and Resilience Plan* (EUR 3.3 billion for the Science and Innovation part over the period 2021-23). The Strategy also aims to develop researchers who can be adapted to partnerships with business (see below).

Figure 2.18. Business R&D in Spain lags behind in a number of areas



Source: OECD Research and Development Statistics (database).

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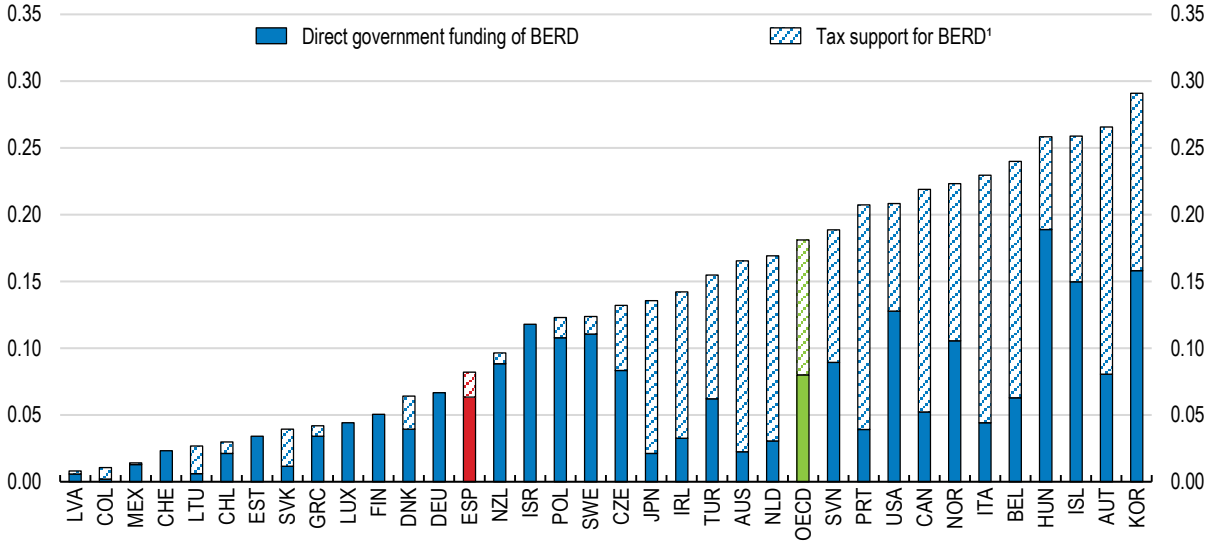
R&D tax incentives

Public support for business innovation can alleviate financial constraints and encourage R&D activities in firms. Overall, public R&D financial support is low in Spain, compared with other OECD countries (Figure 2.19). Some firms, in particular small businesses, face funding difficulties to undertake R&D effectively. Although equity finance is a significant determinant of R&D investment (García-Posada, Menéndez and Mulino, 2020[28]), as share investors value intangible assets more than bank creditors do, bank lending remains by far the most important source of external financing among most Spanish firms (see below). Excessive debt leverage can reduce R&D investment, while firms use cash holdings to smooth R&D investment (García-Posada, Menéndez and Mulino, 2020[28]), suggesting the importance of stable and sound financing to undertake R&D.

The use of R&D tax incentives is comparatively low in Spain (Figure 2.19), although it has one of the most generous tax credit systems in terms of the implied effective subsidy across the OECD (OECD, 2020[30]). The R&D tax credit is found to be effective in terms of promoting private R&D expenditure ((OECD, 2020[31]); (AIReF, 2020[32])). Nonetheless, the take-up rate of R&D tax credits remains low, partly because of the requirements to benefit from the R&D tax credit in the corporate tax system, which limits its appeal particularly for small businesses (AIReF, 2020[32]). These requirements, along with other administrative procedures for the application of R&D tax credit, should be reviewed, and the system should be streamlined to lower associated costs, as recommended in the *2018 Economic Survey of Spain*. The authorities intend to investigate the possible improvements pointed out by Fiscal Council (AIReF) in the design of the tax benefits, taking account of other policies, such as direct transfers and subsidies within the overall R&D support policy.

Figure 2.19. Public financial support to business R&D is low

Government support for business R&D, as % of GDP, 2018



1. Subnational tax support for BERD is included in tax support for BERD.
Source: OECD R&D Tax Incentives database (Last updated December 2020).

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R&D grants and loans

Government direct funding of business R&D, which is managed by various public bodies at both the central and regional government levels in Spain, can be more targeted to specific policy purposes. Among public bodies, the Centre for Technological and Industrial Development (CDTI) is the largest in terms of the amount of non-tax based support for business. The CDTI has decreased the share of grants in its business support over the past decade. CDTI loans are awarded with interest rates that are very close to private market financial rates, while requesting bank guarantees for the award, which makes those loans unattractive for the majority of SMEs and less adapted for newly started innovative firms (ERAC, 2014[33]).

Compared with loans, R&D grants are in principle better suited for young and innovative firms, as they lack the financial capacity against which decisions to award R&D loans are often made. R&D grants should be subject to evaluation in order to target them to those with high growth potential. When awarding R&D grants and loans, the public bodies, such as the CDTI, evaluate projects, taking account of, among others, the quality of projects, the capacity to undertake them, including human resources, and past performance, which seemingly conform to international standards. However, it is not clear how their evaluation is related to their decision making in granting direct funding, as there are cases in which such a decision is made in

a discretionary way (AIReF, 2018[34]), which should be addressed. In addition, the performance evaluation of projects needs to be implemented with rigorous approaches, which should condition the continuity of grants (AIReF, 2018[34]).

The CDTI launched two new programmes, the "*Cervera*" and "*Misiones*' programmes, aiming at the promotion of technology transfer to the business sector. The "*Cervera*" programme, launched in 2018, targets 11 priority areas, including those related to digitalisation, namely, artificial intelligence, advanced mobile networks and information protection. This programme also promotes partnerships between public research and businesses (see below). The programme granted EUR 72 million in 2019 (this compares with total R&D funding of EUR 853.2 million provided by the CDTI, accounting for 45.7% of total public funding for R&D projects, in 2017). The "*Misiones*" programme, launched in 2020, aims to support sectoral strategic R&D initiatives. The budget for the first call has been EUR 70 million. As part of the National Strategy on AI, which foresees four R&D grant programmes (amounting to EUR 214 million in total), EUR 109 million was allocated to the "Misiones I+D+I en AI programme". As the "*Cervera*" and "*Misiones*" programmes will be boosted by the Recovery, Transformation and Resilience Plan, these programmes should be subject to rigorous ex-post evaluation of projects, one of the weak areas in the R&D financing system in Spain.

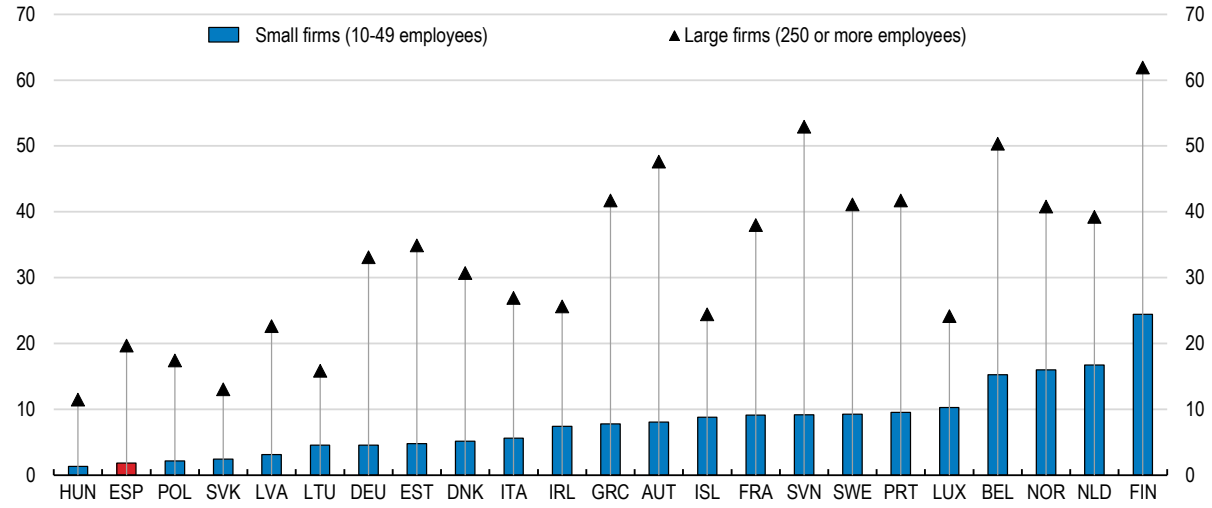
Partnerships between public research and business

Partnerships between public research and business spur innovation by sharing both the risks and rewards of digital innovation (OECD, 2019). In the digital age, such partnerships are important because a great deal of knowledge on digital technologies cannot be transmitted easily and require significant adaptation to each specific application (Guellec and Paunov, 2018[35]). The Spanish government is currently reforming the Law 14/2011 of Science, Technology and Innovation to facilitate the transfer of the results of the research activity. The OECD, in collaboration with the European Commission, is currently working with the Spanish government to develop a roadmap for enhancing collaboration between universities, public research organisations and businesses in Spain, to be published by the end of 2021 (https://community.oecd.org/community/cstp/roadmap-innova-es/).

In Spain, partnerships between public research and business remain limited, in particular among small businesses (Figure 2.20). It would be particularly helpful for Spanish firms to develop such partnerships further, as many of them are not engaged in innovative activities, leading to the development of new business processes and products, although the adoption of digital technologies is overall around the OECD average (Figure 2.4). Such partnerships are particularly important for small business which lack necessary equipment and skilled personnel readily engaging with technologies, and cooperation with partners are effectively found to be significant to result in producing new business models and products (López-Bazo and Motellón, 2018[36]). However, researchers find the lack of the absorption capacity of many SMEs as problematic in their partnership in Spain (University-Business Cooperation in Europe, 2020[37]). On the business side, firms tend to find the lack of adequate partners and the functioning of research institutes as structural impediments in Spain (University-Business Cooperation in Europe, 2020[38]).

Figure 2.20. Partnerships between public research and firms can be developed further

Share of firms which contracted out R&D, 2014-16



Source: Eurostat, the Community Innovation Survey (database).

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There is a wide range of platforms, which facilitate partnerships between firms and research centres, addressing the absorption capacity of SMEs. These include the Technology Centres, which have been mainly established by regional authorities. As a significant share of SMEs carry out R&D or innovation activities only occasionally, or tend to use only external R&D resources, Technology Centres can be key providers of R&D and innovation services for these SMEs (Martínez, Cruz-Castro and Sanz-Menéndez, 2016[39]). There are exemplary cases, such as *Tecnalia* (Box 2.6), in which firms successfully adopt new business processes and products based on digital technologies, while researchers have obtained patents out of partnerships with firms. However, little is known about the contribution of Technology Centres to knowledge-based development and the match between the services they deliver and the needs of SMEs (ERAC, 2014[33]).The authorities should evaluate the performance of Technology Centres systematically. Their capacity should continue to be strengthened to effectively conduct R&D through partnerships between firms, especially SMEs, and research institutes, by extending existing initiatives, such as the *"Cervera"* programme

Box 2.6. An example of technology transfer and ICT use: *Tecnalia*

Tecnalia is a Technology Centre based in the Basque Country, which was set up in 2011. Its mission is to "transform technology into GDP", promoting research and technological developments. It is funded by the private and public sectors, which amounts to EUR 110 million in 2018, and employs around 1 400 staff. It is deeply rooted in the business community as over 100 companies take part in its governing bodies. It had 7 400 client firms over the period 2011-19, of which 75% were small and medium enterprises (SMEs). It offers different models to work with firms, depending on their technological innovation degree, and adapts to the needs of firms.

Tecnalia develops, certifies and validates processes, systems and products that client firms need and develops customised R&D and innovation projects to generate impact on clients' business, along with various related supports. As a result of such partnerships, *Tecnalia* obtained 658 patents over the period up to 2018. Its activities vary in a wide range of sectors, such as energy and environment, ICT, industry and transport, health, etc.

Connected Industry 4.0: Digital Transformation of Industrial Companies is an example of how *Tecnalia* supported firms in terms of technology transfer in the area of ICT. *Tecnalia* has promoted the digital transformation of 15 companies based in the Basque Country, Navarre, Madrid and La Rioja. It carried out a diagnosis of the current situation and the transformation plan for each company. The main opportunities prioritised by the companies were as follows: transforming their product into a Smart product; developing a portfolio or digital services on a connected product; launching a cyber-security plan; implementing an integrated production planning tool; the digitalisation of processes which are still conducted in paper, for further interconnection with the other systems; and implementation of sensor systems in machines to collect process data which may be used to improve them and control production in real time.

Source: The Secretariat's adaptation from *Tecnalia*'s website: https://www.tecnalia.com/es/

Public research organisations are increasingly aware of the importance of partnerships with firms and a number of new initiatives have been launched. One example is the Interdisciplinary Thematic Platforms (PTIs) by the Spanish National Research Council (CSIC), launched in 2018. They cover a number of key areas, including digitalisation with a focus on quantum sciences and technology as well as 3D additive manufacturing. PTIs aim to tackle multidisciplinary challenges of high scientific, economic and social impact, associating different CSIC centres and firms, administrations, and other institutions. PTIs have mobilised more than 600 research groups in the CSIC centres, involving more than 80 firms and other institutions. As the programme has been in place for some time, it is important to evaluate them.

Knowledge transfer depends, in particular, on the availability of researchers in public research organisations, which is currently limited due to excessive regulations. It is important for researchers to have appropriate incentives (e.g. through performance evaluation) to collaborate with businesses. In most cases, researchers in Spain are civil servants in universities and public research organisations, and their performance evaluation depends heavily on the production of scientific papers. A career incentive premium (*sexenio*) for knowledge transfer activities has been introduced recently on a pilot basis. However, even with this career incentive premium, knowledge transfer activities with the private sector have not been well recognised in researchers' performance evaluation, which is one of the key obstacles for partnerships with firms (COTEC, 2019[40]). This highlights the scope to develop more flexible institutional arrangements within research centres, such as those adopted in Catalonia, which have enabled these organisations to engage more flexibly in collaborative projects. In addition, within public research centres, basically only 30% of proceeds from commercialisation is allocated to researchers from a contract with private companies.

The new *Science, Technology and Innovation Strategy 2021-27* envisages developing scientific careers and strengthening knowledge transfer activities. The reform of the Law of Science and Technology will introduce a new scientific and technological career pathway for young researchers to ensure career stability, while ensuring its quality standards. Some related programmes to support young researchers will be financed by the Recovery, Transformation and Resilience Plan (EUR 0.4 billion over the period 2021-23). The reform will also facilitate researchers to move between public research organisations and the business sector by securing their career within public research organisations. These reforms can make the management of research personnel more flexible in order to develop partnerships with firms further. The new system should ensure that knowledge transfer activities of researchers are an integral part of their performance evaluation.

The forthcoming reform also aims to improve the effectiveness of public research organisations. It plans to reorganise public research organisations within the remit of the central government to adapt them to the objectives of the Law. As the Law foresees developments of knowledge transfer activities, public research organisations themselves can also be more incentivised to undertake partnerships with firms, for instance, by developing a more rigorous framework for allocating funding, based on results and outcomes. This should be complemented with an increased managerial autonomy of public research organisations. They should be able to make choices and establish priorities related to functionality or performance, as they need to mobilise individual researchers in search of common strategies (Cruz-Castro and Sanz-Menéndez, 2016[41]).

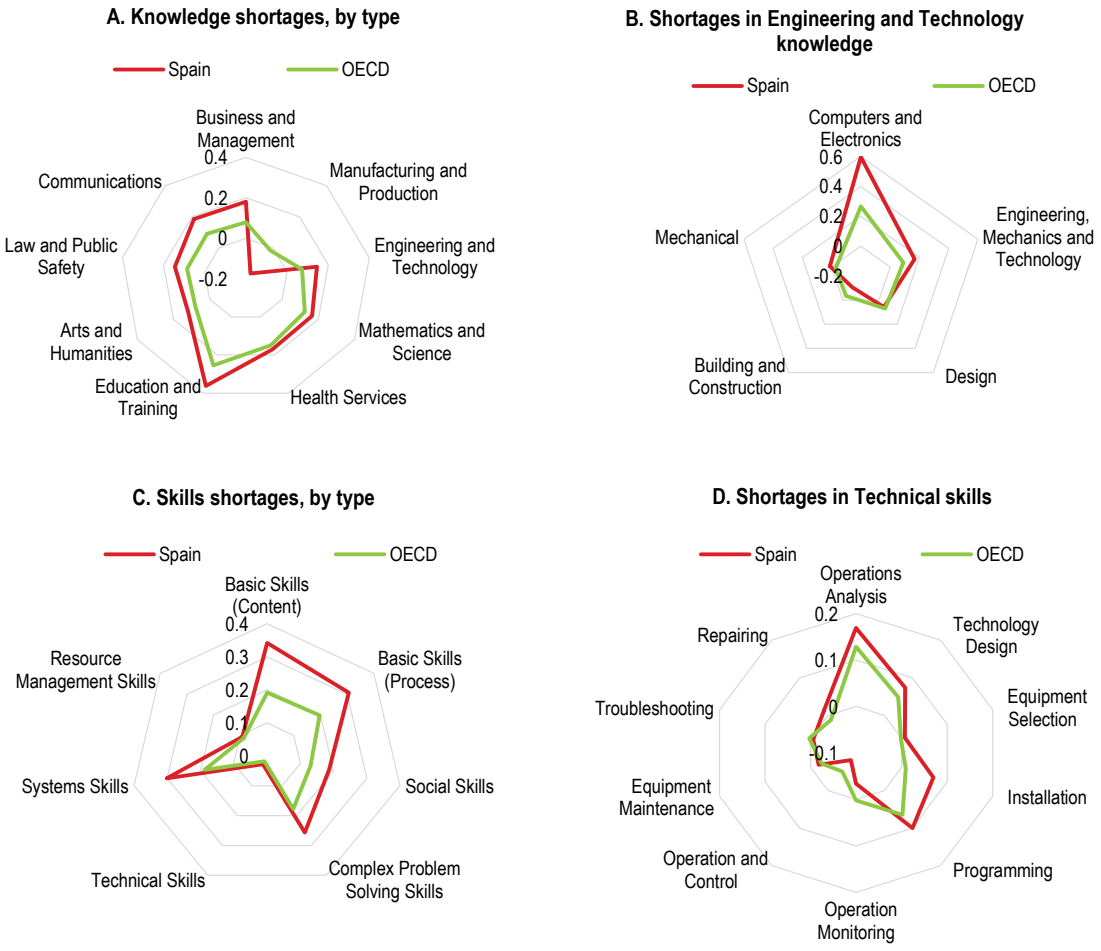
Adapting skills of workers to digitalisation and changing nature of work

Digital diffusion hinges on the skills of people to use digital technologies. ICT competences are found to affect the digital adoption rate (Andrews, Nicoletti and Timiliotis, 2018[17]). In addition, evidence suggests that worker skills boost productivity gains from ICT investment in Spain (Cuadrado, Moral-Benito and Solera, 2020[15]). The necessary pool of skills includes not only ICT specialists, whose expertise is fundamental to deploying and managing digital technologies, but also more broadly diffused generic ICT-related skills among workers to keep up with the changing technological environment. In this respect, there is scope to raise ICT related skills among Spanish people, in particular, among the low educated and older people (Figure 2.9). EUR 7.3 billion of the national recovery plan funds are allocated to the modernisation and digitalisation of the education system, which is welcome. One of the key components, the National Plan for Digital Skills (Box 2.4), is a broad plan to improve cross-cutting digital skills, the digital transformation of education, digital skills for employment and for professionals. This plan should also be fully reflected in labour market policies in order to provide the opportunity to develop digital skills for job seekers (see Chapter 1).

In Spain, some critical shortages of ICT-related skills exist (Figure 2.21). In terms of fields of skills (Panel A), shortages in engineering, technology and telecommunications are greater than in other OECD countries. At a more detailed level, shortages of computer and electronics stand out in Spain (Panel B). In terms of specific skill requirements (Panel C), shortages in ICT-related skills, such as complex problem solving skills and systems skills (e.g. judgment and decision making) are relatively high. Although there are no significant shortages in technical skills overall, there are important shortages in some areas, such as operation analysis (Panel D).

Figure 2.21. Skill shortages in some segments are significant

OECD Skills for jobs indicators



Note: Positive values indicate skill shortage while negative values point to skill surplus. The larger the absolute value, the larger the imbalance. The OECD Skill for Jobs indicators are constructed by an index of the labour market pressure on occupations, which is multiplied by an index of skill intensities. First, the labour market pressure (shortage/surplus) is identified at the occupation level from labour market data such as wage growth (measured in terms of deviation from the long-run trend of the whole economy). Then, this is used to map occupations that are in shortage or surplus into the underlying knowledge types/skills requirements (for e.g. computer and electronics) for these occupations. The underlying knowledge types/skills requirements for each occupation are defined in O*NET and measured in terms of a min-max scaling varying between 0 and 1. For more detail, see OECD (2017).
Source: OECD Skills for Jobs (database).

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ICT in formal education

Primary and secondary education

The mix of skills required in the digital society is wide-ranging, including among others, foundational numeracy and literacy skills, problem-solving skills and ICT skills. Solid foundational skills coupled with problem-solving skills are indispensable to use digital technologies effectively and to benefit from the opportunities of the digital transformation. Strong foundational skills are also the basis for continuous learning, such as job training and adult education more generally. Therefore, formal education should ensure the development of foundational skills, underpinned by well-designed curricula and teacher training

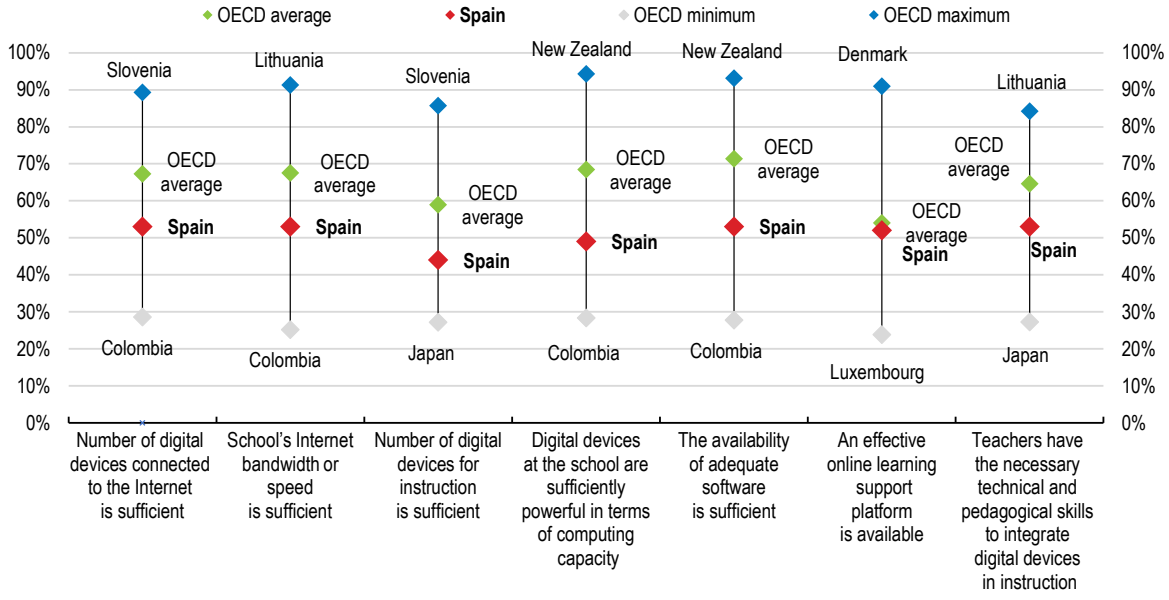
programmes, alongside early and targeted interventions to those facing barriers (see *2017 and 2018 Economic Surveys of Spain*; Chapter 1).

In terms of the digitalisation of the education system, Spain has adopted a number of initiatives over the past years. For example, the Ministry of Education has developed a distance education structure (the Centre for Innovation and Development in Distance Education) and *Aula Mentor*, an open free, Internet-based training system. However, Spain is lagging behind other OECD countries when it comes to the adequacy of ICT tools available in schools, and the skills of teachers in using them effectively (Figure 2.22). The COVID-19 crisis highlighted the problems of accessibility to digital resources, especially for the most vulnerable groups, such as low-income families, as around 1 million students were not connected. Regional authorities and schools adopted contingent measures to guarantee students' access to material and digital resources to pursue education at distance, to alleviate the adverse consequences and reduce the existing disparities.

Moreover, the authorities have approved the *Educa en Digital Program,* as part of the National Plan for Digital Skills to which the national recovery plan allocates EUR 3.5 billion. The *Educa en Digital Program* aims at several actions, including the provision of digital education resources both at school and at home as well as digital equipment to schools, and training of students and teachers. This programme should be fully rolled out so that adequate education at distance is ensured for all to prevent an increase in inequalities in human capital accumulation in digital skills.

Figure 2.22. Spain lags on the use of ICT tools in schools and teachers' preparedness

Percentage of students in schools whose principal agreed or strongly agreed with statements about the school's capacity to enhance learning and teaching using digital devices



Source: OECD calculations based on PISA (2018).

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Going forward, digital skills can be fostered in a more comprehensive approach rather than stand-alone ICT classes. In Spain, the new education law (LOMLOE) aims to develop students' digital competences. Digital skills are acquired through multiple learning areas, along with a broader range of skills, such as creativity, the ability to think critically and openly, and the ability to act ethically. The framework developed by the Australian Curriculum Assessment and Reporting Authority is an example to develop digital skills in this way. It consists of managing and operating ICT (e.g. managing data, selecting and using software);

communicating with ICT; creating with ICT (e.g. using ICT to generate ideas or manage digital solutions for issues arising in learning activities; investigating with ICT (e.g. finding and analysing information, verifying sources and reliability of digital data); and applying social and ethical protocols and practices when using ICT (e.g. recognising intellectual property, applying personal security protocols). Such an approach would facilitate students to prepare for navigating a complex world competently through critical thinking, resilience and the ability to learn throughout life.

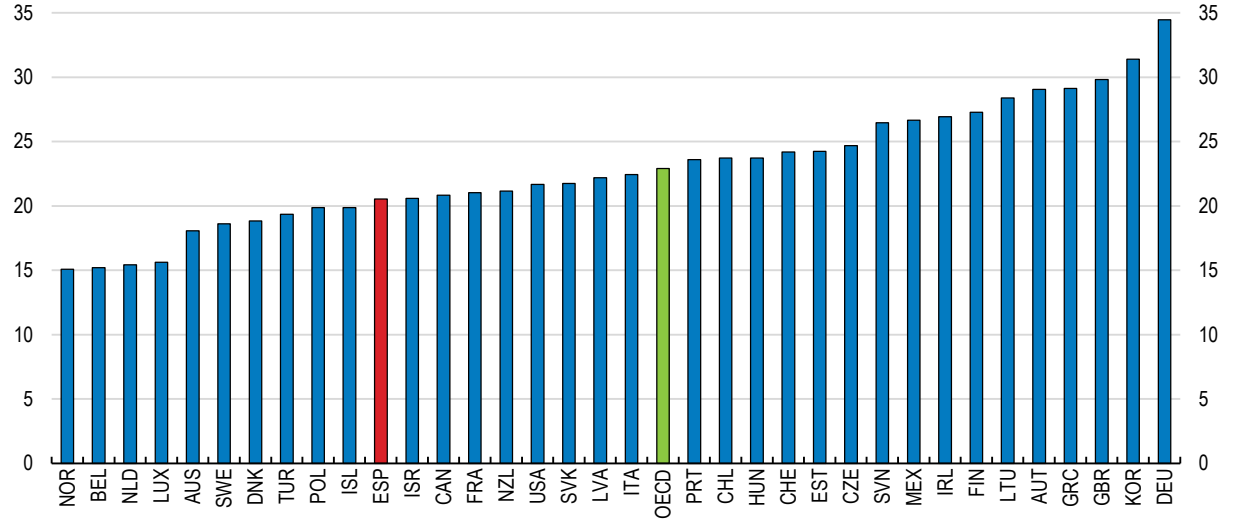
Universities

As required ICT skills become increasingly advanced, the role of tertiary education plays a prominent role. University students also need to be familiarised with constantly evolving ICT technologies. On-line teaching in traditional universities has been developed for some time, which accelerated with the COVID-19 crisis. There is no formal assessment on on-line teaching, but the authorities perceive needs for materials, such as computers to be provided to students, in order to develop this form of teaching further.

In terms of aligning university education to labour market needs, the field of study is a key determinant, which affects the subsequent working life for tertiary graduates. In Spain, the proportion of tertiary graduates in STEM courses, which are closely related to ICT skills, remains lower than the OECD average (Figure 2.23). Indeed, the ICT related skill shortages (Figure 2.21) point to the necessity to increase related degree courses further and improve quality of ICT related education in tertiary education, which does not meet labour market needs effectively, which is one of the aims of the Recovery, Transformation and Resilience Plan.

Figure 2.23. University graduates in STEM courses are relatively low

Share of university graduates in STEM courses, 2018



Note: "STEM" programmes include "Natural sciences, mathematics and statistics", "Information and Communication Technologies", and "Engineering, manufacturing and construction". The numbers refer to all educational programmes at the Bachelor's or equivalent level.
Source: OECD, Education at a Glance (database).

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The offering of degree courses remains rigid. Under current regulations, universities can determine freely the degree courses they offer, with some specific exceptions. In practice, however, they continue to offer a broad range of degree courses, although there are very few students enrolled in some degree courses. This could be related to the management of universities.

The improvement in the management of universities can raise the labour market relevance of programmes, facilitating them to eliminate programmes with limited demand and redirect funds to programmes with higher demand. Such a reform should be based on an incentive mechanism, as the 'imposed' autonomy within each university failed in the past (for example, an autonomous hiring and promotion system led to increased practices of internal recruitment and promotion (Cruz-Castro and Sanz-Menéndez, 2015[42])). Such an incentive mechanism can be introduced, for example, by modifying the funding formulas to increase competitive funding depending on the performance and outcomes of each university. This would require, in turn, a change in the way universities are evaluated. Currently they are evaluated at the level of each faculty, which needs to be at the level of each university, taking account of their overall strategies.

The improved management of universities would also raise their overall performance. For the incentive mechanism to function properly, it is important for the university board to have a solid strategic orientation. Currently, the selection of the board members, which is regulated by the central government, favours internal staff and reflects their professional backgrounds (OECD, 2015[43]). Board membership could be opened to those external to universities, in order to raise their relevance of research in the society. This would help facilitate better linkages between tertiary institutions and employers, and greater specialisation of universities. Greater specialisation could in turn raise the quality and relevance of skills. Such better linkages could also enable universities to better use the new career pathway for scientific and technology researchers and to conduct partnerships with firms more effectively (see above).

Vocational education and training

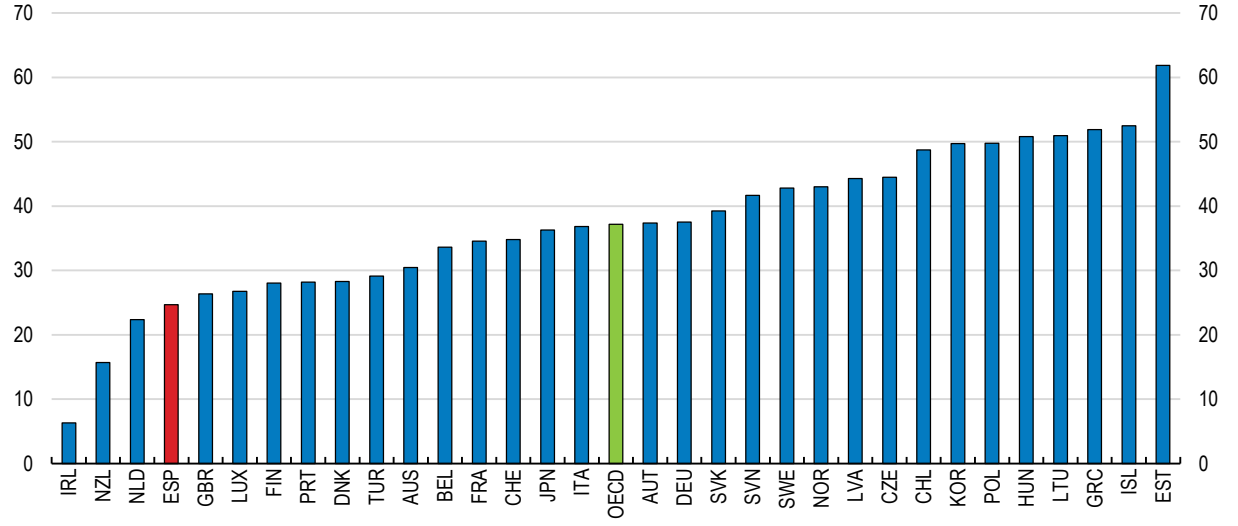
High quality vocational education and training (VET) can promote necessary work skills, including ICT-related skills. VET is particularly adapted to jobs that require a limited set of specific skills (e.g using automated machine tools), some of which are in shortage in Spain (Figure 2.21). Although increasing, the share of students enrolled in upper-secondary VET remains low in Spain (35.8% of total students at the upper secondary level versus the OECD average of 43.3%). This is particularly the case in the dual VET system, which provides students with school-based training and practical training in a company simultaneously and has been in place since 2012 (1% of total students at the upper secondary level).

VET as public policy should evolve with a long-term vision. While it is important to meet immediate labour market needs, occupation specific skills can quickly become obsolete. Thus, when meeting labour market needs, VET programmes should look at categories of skills which are considered to be increasingly in need and versatile across many occupations (Figure 2.21; Panel C). VET should also consider foundation skills to develop workers' applied skills over the course of their career life. The Organic Law for Improvement of the Quality of Education (LOMCE) introduced optional subjects related to general skills and facilitated transition to tertiary VET. Such efforts need to be extended since the shortage of basic skills stands out in Spain (Figure 2.21, Panel C), which can hamper continuous learning.

In 2020, the government introduced the Modernisation Plan for Vocational Training, with a budget of EUR 1.9 billion (0.15% of 2019 GDP) for four years. The plan will add 200 000 places in the VET offering by 2023, which correspond to training needs in the labour market. Currently, ICT-related VET programmes are limited (Figure 2.24), but the government plans to expand the range of degrees related to digitisation and new technologies, such as telecommunications, cybersecurity, 3D printing (additive manufacturing), implementation of 5G infrastructures, artificial intelligence and Big Data and BIM ('Building Information Modelling'). This is going in the right direction, as they broadly seem to correspond to skills needs (Figure 2.21).

Figure 2.24. STEM-related VET programmes should be developed further

Share of upper-secondary VET graduates in STEM courses, 2018



Note: "STEM" programmes include "Natural sciences, mathematics and statistics", "Information and Communication Technologies", and "Engineering, manufacturing and construction" The numbers refer to all educational programmes at the Bachelor's or equivalent level.
Source: OECD, Education at a Glance (database).

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In terms of the governance structure, the Plan has the objective of introducing a single VET system that integrates vocational training in the educational system with the one in companies through training and apprenticeship contracts. Streamlining all training activities in a single VET system can help citizens of any age and of any level of qualification to plan and design lifelong learning itineraries, and increase cost efficiency in terms of training centres. Furthermore, the National Plan for Digital Skills will reinforce the Modernisation Plan for Vocational Training to foster STEM vocational training at schools, with a focus on women, and the integration of a flexible digital vocational training programme oriented to re-skilling and up-skilling.

The Plan aims to strengthen public-private collaboration by raising the in-work training components of all types of VET. For example, the objective for the dual VET system (which is specifically designed for combining school and 'in-work' components and is not part of the single VET system) has an objective to raise the 'in-work' components to 80%. The targeted increase in the number of places in the VET offering will raise the need for training and apprenticeship contracts. This would require securing commitment from more firms to provide students with practical training opportunities, but the high prevalence of SMEs in Spain is an important obstacle to develop firms' engagement in VET further. About 90% of Spanish firms have five employees or less, which makes it difficult for them to identify training needs and provide a training tutor.

The co-operation with various stakeholders can be extended to overcome these constraints. To do so, some existing initiatives, such as Centres of Vocational Excellence (CoVEs), can be extended further. CoVEs typically develop and implement better quality VET programmes and are engaged in a range of cooperative activities, including the provision of placements for students by businesses (European Commission, 2019[44]). *Tknika* in the Basque Country is one such example of CoVE. *Tknika* has a network with firms, in particular with SMEs, allowing them access to services and infrastructure. Such initiatives can help facilitate engagement of SMEs and to identify their training needs accurately, which is the key to a successful VET training programme for SMEs (OECD, 2017[45]). They can also be helpful for the training of those already in employment (see below).

Lifelong learning and ICT

Widespread digital adoption also hinges on continuous enhancement of skills of workers to keep pace with the fast changing technological landscape. Participation in lifelong learning and on the job training is positively associated with the adoption of digital technologies by firms (Andrews, Nicoletti and Timiliotis, 2018[17]). ICT skill shortages in Spain (Figure 2.21) likely largely reflect the lack of skills of incumbent workers. Across OECD countries, shortages of key information-processing skills are related to the skills gap between older and younger workers (OECD, 2019[1]). Hence, adult training and lifelong learning is key to develop digitalisation further in Spain, in particular, in the context of demographic ageing (see Chapter 1). In addition, the percentage of workers in jobs at high risk of being automated in the next 15-20 years at 21% in Spain is higher than the OECD average of 14% (Nedelkoska and Quintini, 2018[46]), as discussed in the *2018 Economic Survey of Spain.* Lifelong learning can also address these risks, which can exacerbate inequalities.

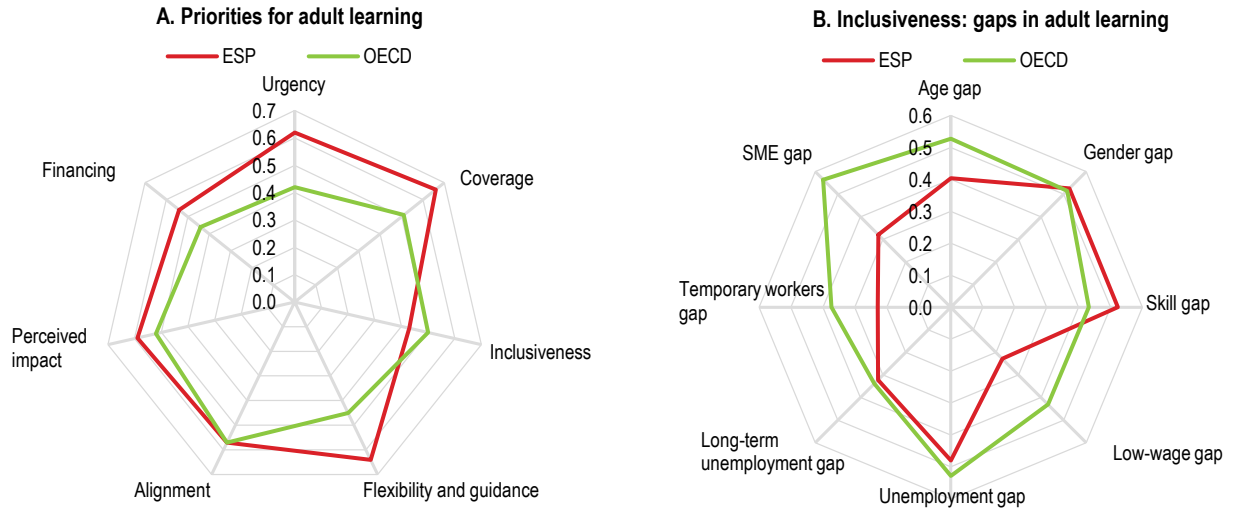
The impact of lifelong learning for low-skilled workers on digital adoption is stronger than that for those who are already highly skilled (Andrews, Nicoletti and Timiliotis, 2018[17]). Focusing on low-skilled workers is also cost efficient, since their training costs tend to be lower. The opportunity costs of training low-skilled workers due to absence from work for training are low (Andrieu et al., 2019[47]). Moreover, the probability for low-skilled workers to quit their firm who had borne training costs is low (Bechichi et al., 2018[48]). These findings argue for focusing particularly on low-skilled workers when strengthening the lifelong training system, as was recommended in the *2018 Economic Survey of Spain*.

In Spain, the overall adult learning system performs well, but there is high demand, reflecting low general skills among workers ("Urgency" in Figure 2.25). The coverage of adult training is high, and financing is not a major barrier, essentially due to the mandatory professional training levy (see below). Nonetheless, there are some important gaps in adult learning opportunities in terms of equal access ("Inclusiveness"), which stands out in particular for SMEs and low-wage workers. In terms of the alignment of adult learning courses to firms' needs, it is close to the OECD average, as the share of firms reporting their training provision in response to future skill needs is very high. However, the share of firms who assess their future skill needs precisely is lower than the OECD average, implying the challenge of aligning precise skill needs and training provided.

Professional training in Spain is financed mainly from the proceeds of the professional training levy. The professional training levy (*Cotización para formacion profesional)* is a contribution of 0.7% of a company's payroll. Out of these funds, firms are given training credits to finance training for their employees, which account for around a third of the professional training budget (the rest is used for other purposes, such as programmes for the unemployed). Employers are incentivised to provide training since their training credits expire after one year. In 2019, only 19.8% of firms that paid the levy provided training for their employees, which has declined from 27.4% in 2015 ((Fundación estatal, 2015[49]) (Fundación estatal, 2019[50])). The percentage varies greatly across firms: 91.6% among large firms and 15.1% among micro-enterprises.

The government introduced a legislation in 2015 to make professional training more responsive to firms' demand (*Ley 30/2015*). The previous system was exclusively managed by social partners (i.e. employer associations and trade unions) in terms of the design and delivery of training, and the quality of training provided in this system was relatively low (OECD, 2017[45]). The aim of the 2015 reform was to introduce more competition among training providers and change the management of training funds, by making it mandatory to base training on needs that are immediate and specific to the firm and its employees. The decline in the number of firms, which provide training, especially micro-enterprises, suggests that the lack of the capacity of SMEs to organise training themselves could have hampered their ability to take advantage of the reform.

Figure 2.25. There are some important gaps in adult learning opportunities



Note: Indicators normalised to 0-1, 1 = top OECD country and 0 = bottom OECD country. "Urgency" assesses how pressing the need for up- and reskilling is in different countries; "Coverage" assesses the extent to which individuals and employers are engaged in adult learning; "Inclusiveness" looks at how equitable participation in adult learning is across countries; "Flexibility and guidance" looks at how well countries do in providing information and guidance to adults on training opportunities and reducing barriers to their participation through flexible provision; "Alignment" dimension looks at how well adult learning systems take into account the changing skill needs of the labour market; "Perceived impact" measures such aspects of certification, monitoring and evaluation; and "Financing" assesses the extent to which adult learning systems are adequately financed by different actors.
Source: OECD Priorities for Adult Learning Dashboard; OECD calculations.

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Many employers, especially SMEs, also have difficulty in identifying their skill needs precisely, which can lead to a sub-optimal investment in training. While 85.4% of large firms (more than 500 employees) identified their training needs, only around 27.5% among small firms (5-9 employees) could identify such needs in 2018 (MITES, 2019[51]). This suggests that job training organised by employers often does not correspond to addressing skill needs. For example, even after the 2015 reform, the most common type of training activity is risk prevention in the workplace (Fundación estatal, 2015[49]) (Fundación estatal, 2019[50]), which is mandatory workplace training. Hence, firms continue to recoup levy funds by undertaking training which they would have been required to provide anyway (OECD, 2017[45]). As the professional training scheme has been in place for five years, the authorities should conduct an evaluation of this scheme to determine if it has succeeded in meeting specific and real training needs that the law mandates.

Given the circumstance of the job training by firms, subsidies for individuals could work better when targeting specific groups, such as low-skilled or older people. The 2015 legislation on the professional training system (*Ley 30/2015*) introduced two measures to promote lifelong learning for workers: training leave and individual training accounts (*Cuenta Formación*). As part of the training leave, workers are entitled to a 20-hour period of training leave per year. The individual training accounts (*Cuenta Formación*) are intended to keep track of training participation and qualifications of workers over the course of their careers, strengthening the signalling power of skills attained, which can leverage the new VET system made more flexible for lifelong learning (see above). However, no funding is tied to job training on an individual basis. Financial incentives for lifelong learning can be targeted to individuals, rather than to firms, as recommended in the *2018 Economic Survey of Spain*. It would help low-skilled workers in particular, as they need to keep up with skills, which is often not ensured by employer-based programmes. In doing so, it is important to have quality career guidance for individuals, in particular, for low-skilled workers (OECD, 2019[52]).

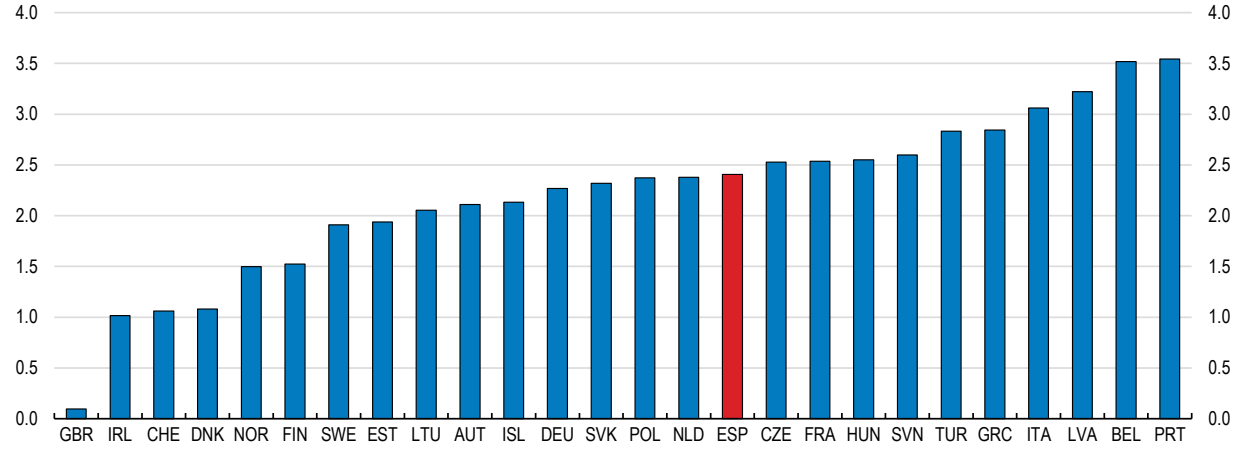
The authorities can also promote job training for low-skilled or older people more actively. According to *Ley 30/2015*, training needs that are not met by firms' training programmes are supposed to be covered by relevant public authorities, partly through the funds financed by the professional training levy. Given the difficulties faced by many firms, in particular SMEs, to identify training needs and organise training themselves, and the existence of a significant gap between high- and low-skilled workers in terms of training opportunities (Figure 2.25), there is scope to develop specific training programmes for low-skilled workers by public authorities. Such training programmes can target ICT-related skills, which is a key objective of the new VET Plan. These programmes then can benefit from the flexibility created by the introduction of the single VET system to accommodate people of any age and of any level of qualification to promote lifelong learning (see above).

Sharpening incentives to take advantage of digital technologies

Firms' incentives to take advantage of digital technologies are rooted in the business environment, which ensures the efficient entry, scaling up and exit of firms. Regulatory frameworks and insolvency regimes shape market discipline and affect incentives to adopt new forms of organisation, and new sources and processes of value creation. Such business dynamism is found to affect digital adoption (Andrews, Nicoletti and Timiliotis, 2018[17]) and boost productivity significantly ((Gal et al., 2019[8]); Figure 2.26). It also necessitates efficient allocation of capital and workers for innovative firms to grow unimpeded and strengthen firms' capabilities through raising managerial quality and intangible assets, such as R&D. Finally, labour markets should remain flexible to facilitate the reallocation of the necessary workforce, and thus boost ICT-related activities and radical innovation more generally (see Chapter 1).

Figure 2.26. Regulatory reforms matter for digital adoption and productivity gains

Effect after 3 years on productivity through digital adoption of closing half the gap relative to countries with the least strict regulation, %



Note: Estimated effect on multi-factor productivity of the average firm from reducing administrative burdens on start-ups (a subcomponent of the OECD PMR indicator), improving the insolvency regime as measured by the indicator in Adalet McGowan and Andrews (2018), and reducing employment protection legislation on regular contracts. For each of these indicators, it is assumed that half of the gap to the country with the least strict regulation in the sample is closed.

Source: Sorbe et al. (2019), "Digital dividend: Policies to harness the productivity potential of digital technologies", *OECD Economic Policy Papers*, No. 26, OECD Publishing, Paris.

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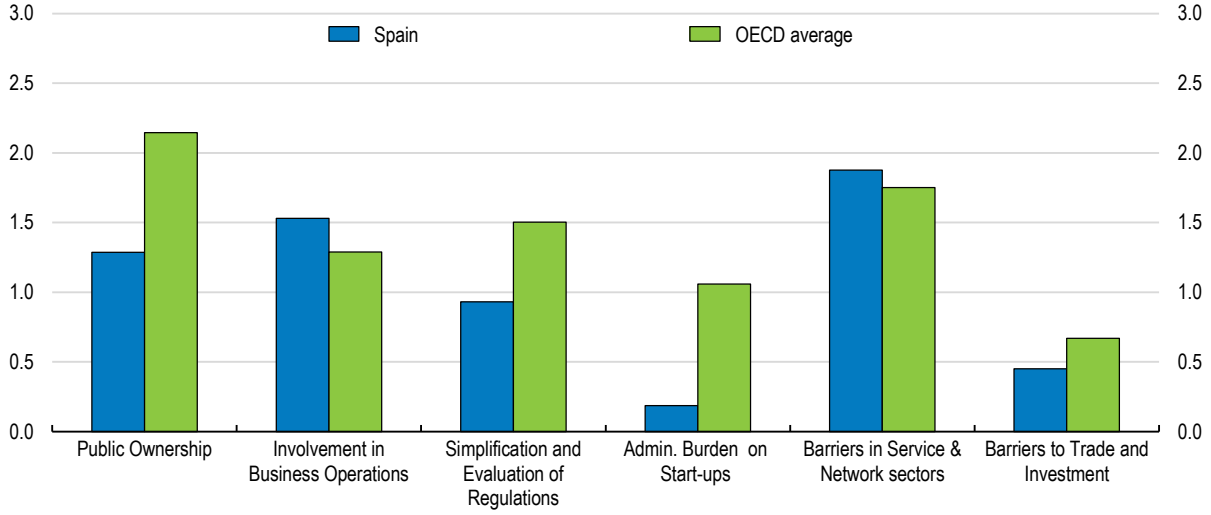
Market regulation should be revamped further to generate competitive pressures

Reducing anti-competitive regulations facilitates more entry of young firms, which tend to have a comparative advantage in commercialising and adopting new technologies (OECD, 2015[53]). It strengthens market discipline, as new entrants create competitive pressures for incumbents to adopt innovations and reduce business costs (OECD, 2015[53]). The stringency of product market regulation is lower than the OECD average, except for a few aspects, such as barriers in service sector and involvement in business operations (Figure 2.27). These restrictions, by raising costs and/or reducing the quantity of available services, indirectly affect other sectors through trade linkages ((Conway and Nicoletti, 2006[54]); (Bourlès et al., 2010[55])). This reflects somewhat stringent regulations in the retail and professional services sectors.

Perhaps more importantly, the volume of regulations matters, in particular, when these differ across regions, for business operations. In Spain, as local authorities have increasingly assumed competences, the total number of new regulations in a given year has increased by four folds since 1980, with the share of those introduced by local authorities reaching over 70% in 2018 (Mora-Sanguinetti and Pérez-Valls, 2020[56]). Moreover, firms perceive an increase in regulations to operate in different regions as of 2019 (INE, 2020[57]). The disparities in regulation across regions hamper the expansion of firms to take advantage of economies of scale. The size of limited liability companies is found to be significantly affected by the volume of local regulations, which is a source of market fragmentation (Mora-Sanguinetti and Pérez-Valls, 2020[56]).

Figure 2.27. Product market regulations are stringent in some respects

Index ranges from zero (least stringent) to six (most stringent), 2018



Note: The OECD Indicators of Product Market Regulation are a comprehensive and internationally-comparable set of indicators that measure the degree to which policies promote or inhibit competition. The indicator ranges from zero (least stringent) to six (most stringent).
Source: OECD Product Market Regulations Statistics (database).

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The Market Unity Law was adopted in 2013 as a framework for good regulation across regions to tackle market fragmentation. There is room to further improve its implementation, as a single market has not been achieved as the Law initially intended. The principle of "national effectiveness" foreseen by the Law ensures that firms would not be subject to any additional requirements in other regions than their own. In 2017, the Constitutional Court declared that this principle cannot be incorporated in national legislation due to the distribution of competences. This principle can still be achieved, if incorporated in regional legislation,

as recommended in the *2018 Economic Survey of Spain*. For example, the region of Madrid announced it would apply this principle to any entities established in other regions. In this case, firms would not be subject to further requirements in Madrid, if they are licensed or authorised in their region of origin. This is a welcome step, but it may be difficult to be adopt by all other regions.

An alternative to achieve a single market is through the effective implementation of the other principles, which remain valid. According to the "necessity" and "proportionality" principles, activity licenses should be grounded on general interests and be proportional to guarantee general interests. If all the regions adopt relevant regulations on activity licenses complying with these principles, common standards across regions can be achieved spontaneously. If such common standards are recognised mutually by all regions, it would create a single market *de facto*, ensuring a level playing field across regions. To achieve this, the existing coordination instruments should be fully exploited, such as sectoral conferences, which bring together regional and central government representatives to discuss and define approaches to improve regulation and overcome fragmentation (European Commission, 2020[58]).

The new digital strategy, "Digital Spain 2025", introduces a number of initiatives to improve the business environment in the context of digital transformation. Among others, the Start-up Support Law will be adopted to create a regulatory framework facilitating the creation of new start-ups and boosting their growth, and thereby promoting a strong digital entrepreneurship ecosystem. It will be supported by measures relating to tax and social security aimed at both the start-ups and investors. It is part of the National Recovery, Transformation and Resilience Plan.

Insolvency regimes could be reformed further to encourage risk taking activities

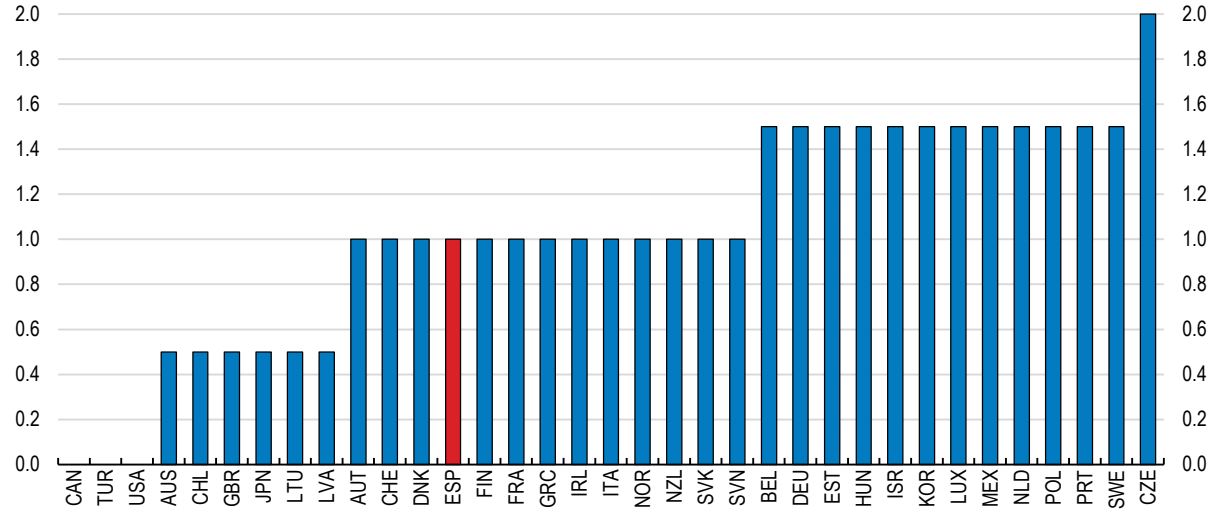
High exit costs disproportionately affect firms with riskier business strategies, which entail a high risk of failure (Bartelsman, Perotti and Scarpetta, 2008[59]). This holds true for digital adoption and innovation as the payoffs from investments in new technologies are often highly uncertain. An effective insolvency regime, which reduces barriers and costs to firm restructuring or exit, encourages risk taking activities and facilitates technological experimentation (Adalet McGowan, Andrews and Millot, 2017[60]). According to the OECD insolvency indicator, the Spanish corporate insolvency regime is considered to be effective, in terms of low overall barriers to restructuring of viable firms, but some gaps in insolvency regimes remain.

The penalties for failed entrepreneurs remain somewhat strong in the Spanish bankruptcy law (Figure 2.28), although having been reduced by the series of reforms over the past decade. In particular, the time to discharge (the period over which the bankrupt person is legally required to repay debt) is basically 5 years (see *2017 Economic Survey* for further details), which remains high in international perspective (Carpus Carcea et al., 2015[61]). The 2013 reform made the time to discharge immediate for some types of debt (unsecured and subordinated debt), if certain conditions are fulfilled, including repayment of a certain percentage of debt (e.g. 25% for unsecured debt, see *2017 Economic Survey* for further details). Although there are no official data, the number of those who benefited from this provision is reported to be limited. The authorities are currently working to transpose the *2019 EU Directive Insolvency and Second Chance*, which would reduce the time to discharge to 3 years, which should be implemented without delay.

The treatment of the liabilities to public authorities (tax and social security contributions, among others) is often an important obstacle during bankruptcy proceedings in Spain ((IMF, 2017[62]); (García-Posada Gómez, 2020[63])). These liabilities are generally not dischargeable and therefore make the debtors often unwilling to start proceedings. The repayment of such liabilities is one of the conditions to benefit from the immediate discharge of other debt and they cannot be exempted even after the bankruptcy sentence. Indeed, individual entrepreneurs facing insolvency often owe a large amount of liabilities to public authorities.

Figure 2.28. Penalties for failed entrepreneurs remain strong

Treatment of failed entrepreneurs, 2016



Note: The indicator is constructed based on the OECD questionnaire on insolvency regimes. It ranges from zero (least stringent) to one (most stringent) for each aspect. "Treatment of failed entrepreneurs" takes into account the following 2 aspects: time to discharge; and bankruptcy exemptions.

Source: Adalet McGowan and Andrews (2018), "Design of insolvency regimes across countries", *OECD Economics Department Working Papers,* No. 1504, OECD Publishing, Paris.

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SMEs need different treatments in a debt restructuring process, as they often cannot deal with complex, lengthy and rigid procedures. The adoption of special insolvency procedures for SMEs, such as simplified or pre-packaged proceedings targeting them, could help (Adalet McGowan, Andrews and Millot, 2017[60]). Spain has an out-of-court restructuring process specific for the self-employed and SMEs ("*Acuerdo Extrajudicial de Pagos*, *OCAP*"). This mechanism is designed for small claim cases (e.g. with a threshold of debt up to EUR 5 million). This process has been used to some extent, mainly by individual entrepreneurs: 1 364 cases between 2015 and 2019 which compares with 1 553 in-court bankruptcy proceedings by the self-employed during the same period. In the case of SMEs, the OCAPs have been very rarely used. One of the main reasons is that the OCAPs cannot deal with liabilities to public authorities, which account for a significant part of their debt. The OCAP can be extended so that it covers liabilities to public authorities (IMF, 2017[62]). The authorities are planning to facilitate the restructuring of liabilities as part of the transposition of the above-mentioned EU Directive.

While the OCAP essentially envisages firm restructuring, out-of-court mechanisms for the resolution of non-viable firms should also be strengthened, either within the OCAP or by introducing a separate process. Such a pre-packaged process for firm resolution can be done on a voluntary basis, with adequate incentives. The aim of such a process should be the smooth exit of unviable firms, while avoiding the stigma of business failure. The case of the Guideline for Personal Guarantee Provided by Business Owners, an out-of-court process in Japan, can illustrate how such an out-of-court process works (OECD, 2017[64]); Box 2.7). In some other countries, such as France and the United Kingdom, there are low-cost fast bankruptcy procedures for individuals, including failed entrepreneurs.

Box 2.7. Out-of-court proceedings: the case of Japan

The Guidelines for Personal Guarantees Provided by Business Owners in Japan

The orderly exit of non-viable firms can be facilitated by greater co-operation among the parties concerned. The Guidelines for Personal Guarantees Provided by Business Owners introduced in 2014 provides a common set of voluntary standards for self-regulation by SME groups and financial institution associations regarding guarantees by SME owners. The Guidelines expedite out-of-court settlements for debt resolution within a framework of institutionalised procedures, such as intervention by SME Revitalisation Support Councils.

According to the Guidelines:

The financial state of the firm should be made transparent, allowing the parties concerned to correctly evaluate the true value of the firm, which often reveals hidden assets of the debtor.

Launching debt resolution at early stages prevents the deterioration of the firm's financial status and the obsolescence of its assets, and raises the amount of assets collected by the creditor.

As the amount of collectable assets is increased, it can be shared with the debtor, allowing him or her to retain more assets, including private dwellings, than in the case of personal bankruptcy.

As the debtor avoids personal bankruptcy, no information is transmitted to the credit registers, allowing him or her to retain access to lending.

It is important to note that the proceedings following the Guidelines are characterised by incentive mechanisms: both the debtor and creditors can be better off than in the situation in which the debtor goes bankrupt. The creditors are further incentivised as they are allowed to deduct losses incurred as part of this debt resolution process from their corporate taxes.

Source: OECD (2017), *OECD Economic Surveys: Japan*.

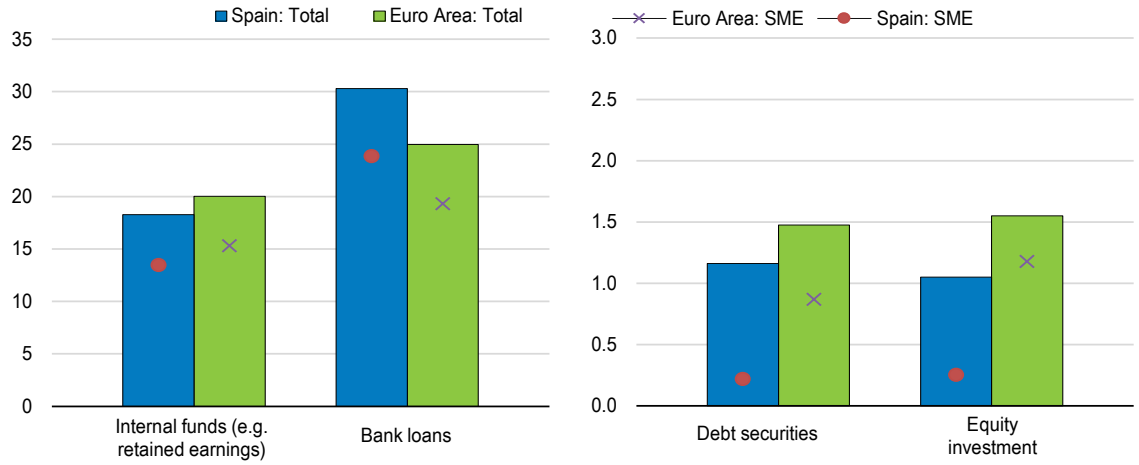
Access to capital is key to diffusion of technologies

Well-functioning capital markets ensure the efficient allocation of capital. They facilitate the entry and expansion of high-potential businesses, by supporting their capital investments, for example in digital technologies. Financing transactions are in general affected by market failures, such as information asymmetry, which is particularly the case for those involved in innovation processes with uncertain outcomes (Calvino, Criscuolo and Menon, 2016[65]). The problem becomes acute when it comes to assets, whose nature is intangible and difficult to evaluate, such as patents. In Spain, the entry and expansion of new, high-potential businesses is likely to be limited, in particular if financing conditions become tighter after the COVID-19 crisis (Albert, Caggese and González, 2020[66]).

Bank loans remain by far the most important source of financing for Spanish firms (Figure 2.29), although their reliance on bank loans has decreased since the global financial crisis. The Spanish banking sector went through structural changes over the past decade (see past Economic Surveys of Spain). These efforts need to be extended, since banks are not fully adapted to financing high-risk businesses, which can be a barrier to developing digitalisation further.

Figure 2.29. Spanish firms rely more frequently on bank loans than on capital markets

Percentage of firms which used each financial instrument, 2019H2



Source: ECB, Survey on Access to Finance of Enterprises (database)

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In order to support high growth potential firms with high risks, public loan guarantee schemes are particularly useful as public authorities assume the potential losses (OECD, 2019[67]). In Spain, the latter schemes have been ensured by Mutual Guarantee Companies (SGRs) owned by SMEs, as well as local authorities, banks and chambers of commerce that guarantee bank loans. The guarantee scheme has been significantly strengthened following the COVID-19 crisis in 2020, by increasing the coverage of SGR guarantees of bank loans up to 100% under certain conditions. When the economy will be on the recovery path, the scheme needs to increasingly target its beneficiaries. The OECD countries that have strengthened public guarantees and direct lending schemes increasingly have targeted young, innovative firms that lack credit history and tangible assets, over the past decade (OECD, 2019[67]). While at the moment initial SGR guarantees cover 100% of the loan, any renewal of the guarantee and its coverage should be subject to assessment on financing constraints still faced by firms when reaching the end of their initial contract.

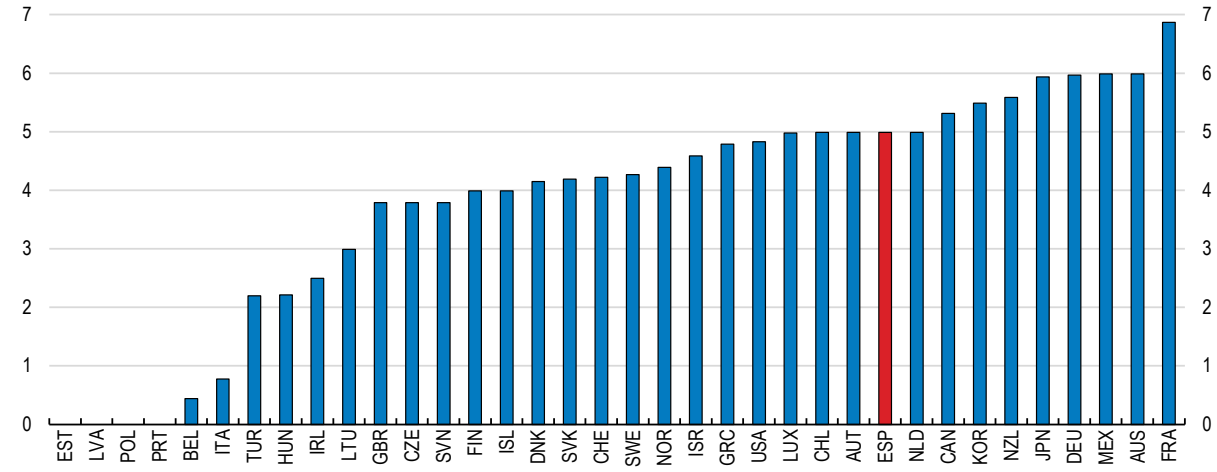
Equity Financing

Equity finance is particularly important for firms with a high risk-return profile, such as new, innovative and high-growth firms. Spanish firms rely less on equity finance (Figure 2.29), while the value of listed shares at 31% of GDP in the first quarter of 2020 is lower than the euro area average of 42%. The asymmetric tax treatment of debt and equity hampers the developments of equity finance. While interest expenses are deductible, equity finance is not considered as a deductible cost, making equity financing comparatively costly (Figure 2.30). This in turn favours certain business types that are more suited to debt than equity financing, which can bias capital allocation away from innovative new investments (OECD, 2017[68]).

Currently there are some specific measures in the corporate income tax system to support equity finance. The so-called 'capitalisation reserve' allows firms to reduce their tax base up to 10% of the equity increase between one year and the previous one if their profits are used to buttress their capital. The so-called 'equalisation reserve' allows SMEs to reduce their tax base by up to 10% if they raise funds by equity finance. With a view to generalising support for equity finance, as recommended in the *2017 Economic Survey of Spain*, Spain can consider introducing an allowance for new equity (to avoid windfall gains for the investment undertaken before its introduction) while carefully designing it (to avoid strategic tax planning by multinational enterprises) (OECD, 2017[68]). Such a change could also be useful in addressing the rising solvency needs as a result of the COVID-19 crisis (Demmou et al., 2021[69]).

Figure 2.30. Debt bias in the Spanish corporate tax system is strong

Estimate of the debt-equity bias at the corporate level, percentage points, 2019



Source: OECD Corporate Tax Statistics.

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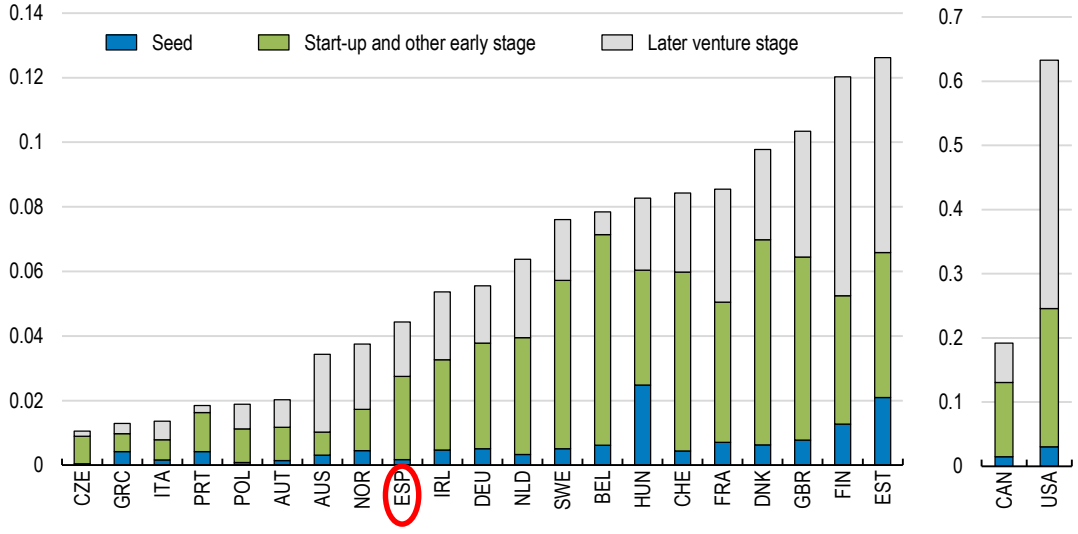
Venture Capital

Venture capital is particularly suited for high-potential firms, which can spur diffusion of digital technologies. Venture capitalists are formally organised funds meeting retail investors' requirements. They target companies with the capacity to yield high returns in a short time frame, and intervene at a later stage, after a business idea or product has been successfully test-marketed, to finance full-scale marketing and production (OECD, 2015[70]). Venture capital financing in Spain remains relatively limited (Figure 2.31), in particular, for early stages. However, venture capital financing in a broader sense (i.e. when other private equity institutions are taken into account) is more developed in Spain (0.69% of GDP) than in other European countries (0.53% of GDP on average). The information and technology sector is the largest beneficiary of venture capital (40.2% of total), followed by consumer products, industrial services, and medicine and health (ASCRI, 2020[71]).

In order to develop venture capital financing, the government has introduced a series of policy initiatives. These include a reduction in the corporate tax rate for venture capital companies and exemptions from capital gains for those investing in smaller, younger and unlisted firms. In addition, a public venture capital fund*, Fond-ICO Global*, was set up to boost private venture capital by investing in private venture capital funds. In this "fund-of-funds" scheme, private venture capital funds finance firms based on their own commercial investment decisions. Although this is considered a good practice, public support in this scheme is concentrated in a limited segment of the economy, such as the digital economy, where most venture capital funds invest and those at later stages of development.

Figure 2.31. Venture capital can be developed further

Total venture capital investment as a percentage of GDP, 2019



Source: OECD Enterprise Statistics (database).

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In the latest call launched recently, *Fond-ICO-Global* focuses on promoting digitalisation and sustainability. This call is the largest since the creation of the fund, both in terms of the amount (EUR 430 million, which compares with EUR 2 billion funded by *Fond-ICO-Global* to date) and the number of funds which it invests in. While it focuses on such topics as AI and cybersecurity in terms of digitalisation, specific criteria are not clear, in contrast with the domain of sustainability where a series of criteria are specified. As there are many potential beneficiary firms financed by private venture capital funds, specifying such criteria would help increasing accountability and conducting *ex-post* evaluation. *Fond-ICO-Global* aims at targeting firms at early development stages, through private venture capital funds' commitments during the tendering process. The fulfilment of such commitments should be monitored, and strengthened if necessary, as venture capital financing is currently concentrated in those at middle or later stages (Figure 2.31).

Venture capital financing can be developed further to reach a wider segment of the economy. Another public venture capital fund, *Fond-ICO PYME*, aims to invest in those with expansion plans and a long-term business vision. It adopts the "fund-of-funds" model (investing in business angels, for example) or the co-investment model in which private-sector fund managers make their own commercial investment decisions in the context of an agreed investment strategy with a public entity to finance firms jointly. As a public fund, *Fond-ICO PYME* should better target those at earlier stages, where market failures are most pronounced. This would fill crucial financing gaps as most private venture capital funds concentrate on firms at later stages. This would also help avoid the risk of crowding out private funds from the comparatively limited venture capital market. Finally, *Fond-ICO PYME* should target a wider range of sectors, as long as young firms have a high potential to grow.

MAIN FINDINGS	RECOMMENDATIONS (key recommendations in bold)
Ensuring communication infrastructure for all	
Although communication infrastructure is fairly well developed, there are many rural and dispersed areas where there is no current or planned coverage by any private operator in the coming years.	Consider complementing through public investment the extension of communication networks in rural areas when private operators are absent.
Barriers to "rights of way" (permission to install necessary equipment) are excessive in some regions and municipalities, hampering further development of communication infrastructure.	**Continue to reduce excessive regulatory burdens to develop communication infrastructure while reducing regulatory differences across regions, through the consultation mechanism in place**.
Information on the location of existing infrastructure and on planned construction work is not sufficiently disseminated, making cost estimates difficult.	Fully develop the Single Information Point and make its use mandatory for all private operators.
Digital services by public administration are fairly developed. However, there is scope to develop them further, such as the provision of e-procurement by regional contracting authorities.	**Fully roll out the National Plan for Digitalisation of Public Administration.**
Digital security risk assessment and security measures are not sufficiently undertaken among firms.	Increase cybersecurity experts, by ensuring the increased offering of related education and training courses.
Enhancing capabilities to make full use of digitalisation	
The ex-post evaluation of projects benefitting from R&D grants and loans is not widespread and rarely taken into account for renewal of projects. The importance of ex-post evaluation is higher for more radical technologies and innovation.	Promote the ex-post evaluation of R&D grants and loans and take them into account for the renewal of grants, including for the Cervera programme, which promotes digitalisation.
Many small businesses lack the capacity to conduct R&D and do not know how to access the newest technologies.	**Strengthen Technology Centres' capacity to effectively conduct R&D through partnerships between firms, especially SMEs, and research institutes.**
Researchers lack incentives to collaborate with businesses, which are not considered in their performance evaluation.	Ensure that collaboration with businesses is duly taken into account in performance evaluation. Apply such performance evaluation in existing programmes, such as Interdisciplinary Thematic Platforms, which promotes digitalisation.
The COVID-19 crisis highlighted the problems of access to digital resources, especially for the most vulnerable groups in formal education.	Fully roll out the *Educa en Digital* Program so that adequate education at distance can be ensured for all.
The management of universities, including the offering of degree courses and the funding formula, remains rigid. University boards consist mostly of internal members and are not very diverse.	Enhance incentive mechanisms by increasing universities' competitive funding based on performance, which can help align their strategies to labour market needs, in particular, ICT skills. Include external members from the private sector and civil societies in university boards.
Engagement of firms in 'in-work' components of vocational education and training (VET) remains limited.	Promote co-operation with firms, by developing such initiatives as Centres of Vocational Excellence, to help identify skill needs and place VET students in firms.
Training needs are often not well identified and do not reach workers that need it the most, such as low-skilled and older workers.	**Shift job training subsidies to individuals at least partially, or develop public job training programmes targeted to low-skilled and older workers for specific purposes, such as promoting ICT skills.**
Sharpening incentives to take advantage of digitalisation	
Regulations are stringent and differ across regions in some sectors, such as professional services and trade, weighing on the expansion of prospective firms.	Foster the implementation of the Market Unity Law using available instruments to reduce regulatory differences across regions.
Some aspects of the Bankruptcy Law remains stringent, such as high penalties for business failures, discouraging risk taking. Debt restructuring in formal proceedings is complex and uncertain, and is often hampered by the treatment of liabilities to public authorities.	**Promote out-of-court insolvency proceedings, especially for small and medium-sized enterprises.** Consider including liabilities to public authorities in out-of-court insolvency proceedings.
Young and innovative firms without collateral can have difficulty accessing bank loans, which remain the more important source of financing.	Strengthen targeted support to new and high-potential firms through public guarantee schemes, while making their renewal conditional on an updated assessment of the performance of the firm.
Venture capital financing is not ample and concentrated in a limited segment of the economy, such as firms at middle or later stages of development.	Monitor and, if necessary, strengthen the requirements to support firms at earlier stages by private venture capital funds financed by Fond-ICO Global in the latest call to promote digitalisation.

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OECD Economic Surveys

SPAIN

The Spanish economy entered a deep recession in 2020 due to the COVID-19 pandemic. A strong government response has protected jobs and firms. However, the crisis has exacerbated long-standing structural challenges, such as high unemployment, inequalities and regional disparities. The national recovery plan will help the near-term recovery and should also be used to promote long-term growth potential. A durable and inclusive recovery will require improving the quality of jobs via lower labour market segmentation, better skills and enhanced support for job seekers. Reforms to secure the pension system's sustainability will be key to address medium-term fiscal challenges. Spain is improving on digitalisation, but there is room to improve the uptake and use of digital technologies to boost productivity growth.Enhancing digital diffusion requires addressing remaining gaps in digital infrastructure and enhancing capabilities of firms and people to take full advantage of digitalisation *via* higher investment in innovation and skills.

SPECIAL FEATURE: ENHANCING DIGITAL DIFFUSION FOR HIGHER PRODUCTIVITY

PRINT ISBN 978-92-64-88239-3
PDF ISBN 978-92-64-55580-8

ISSN 0376-6438
2021 SUBSCRIPTION
(18 ISSUES)

Volume 2021/6
May 2021