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THE SPANISH ECONOMY POST-COVID-19: STRUCTURAL CHALLENGES AND POLICIES TO ADDRESS THEM

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1 Introduction

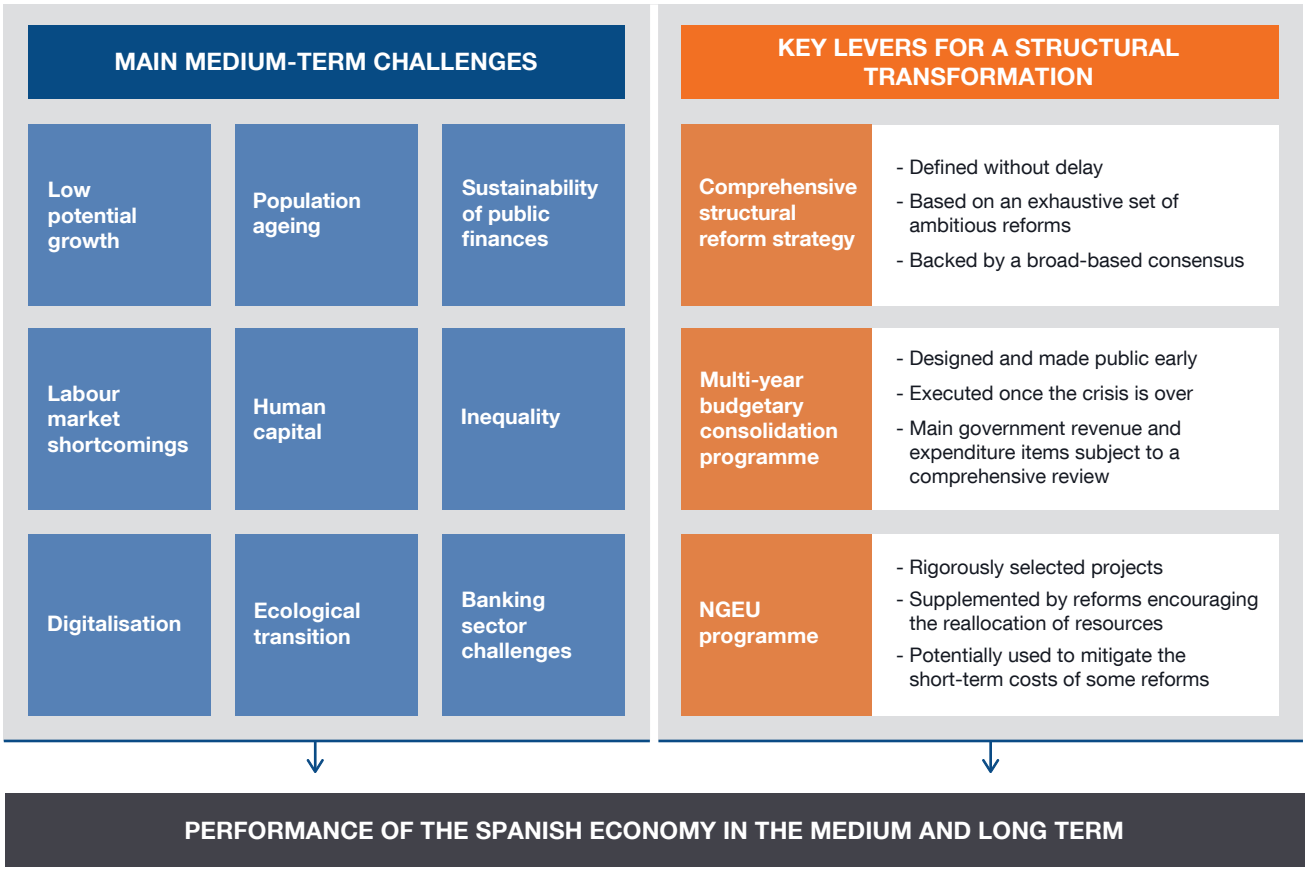
The medium and long-term outlook for the Spanish economy hinges not only on overcoming the present health crisis but also on addressing a series of key structural challenges. Chapter 1 of this Report describes the different dimensions of the profound impact of the COVID-19 pandemic on the Spanish economy, and suggests various factors that may shape Spanish and global economic momentum in the coming quarters. However, on a broader time scale, the future performance of the Spanish economy will depend essentially on the way in which Spain addresses, in the coming years, a series of structural challenges that are of enormous relevance for economic momentum.

Many of the challenges that the Spanish economy will have to face in the coming years existed before the outbreak of the pandemic. As analysed in depth in the Banco de España's 2019 Annual Report, before the present health crisis began, the Spanish economy already faced the need to increase growth potential, correct dysfunctions in several goods and factor markets (including the labour market), enhance the sustainability of public finances and address important challenges linked to population ageing, inequality and climate change.

However, the pandemic has magnified some of these challenges and has also posed some new ones (see Section 2). In particular, the present crisis has led to a further substantial deterioration in public finances, it has highlighted again some of the main shortcomings of the Spanish labour market, it has had an adverse impact on the already fragile outlook for the banking sector and, although it is still early to offer a precise assessment, it will probably also adversely affect economic growth potential and inequality. At the same time, the pandemic has posed new challenges, the most obvious of which relate to the major changes in the behaviour patterns of households and firms brought about, in a very short space of time, by the health crisis. Some of these changes, for example those linked to greater digitalisation of economic activity, could have important structural consequences, and swift and efficient adaptation will be essential. In addition, certain international trade disruptions in the early stages of the pandemic, although apparently only temporary, could give rise to a series of profound changes in the trade globalisation process.

The Spanish economy has three main levers with which to address these challenges (see Section 3 and Figure 2.1). The scale and complexity of the challenges that will shape the future of the Spanish economy in the medium and long-term demand a profound structural transformation in the coming years. Broadly speaking,

Figure 2.1
THE MAIN MEDIUM-TERM CHALLENGES FACING THE SPANISH ECONOMY AND THE KEY LEVERS FOR ADDRESSING THEM



SOURCE: Banco de España.

the Spanish economy has three essential and closely interconnected tools to undertake this transformation: the design and approval of an ambitious structural reform agenda, the definition and execution of a multi-year budgetary consolidation programme once the present crisis is over, and the implementation of various public investment programmes and initiatives linked to the Next Generation EU (NGEU) European recovery programme.

It is essential that an ambitious, comprehensive structural reform strategy be defined and implemented without delay, backed by a broad-based consensus to ensure that it is a strategy designed to last (see Section 3.1). Within this overall growth strategy certain essential lines of action stand out. In particular, to boost productivity, policies should be rolled out that encourage both business growth and human and technological capital accumulation. The structural shortcomings of the Spanish labour market must be corrected, reducing the high duality between workers with temporary and permanent employment contracts and undertaking an in-depth review of active labour market policies. In addition, the numerous economic implications of population ageing should be addressed with decisive action in

various spheres, for example, promoting longer working lives for older workers and analysing the reasons for Spain's low fertility rate. The financial sustainability of the public pension system must also be reinforced, based on a rigorous debate that includes an assessment of the level of benefits to be provided by the system and the resources committed to fund them. Moreover, to mitigate the adverse effects of high levels of inequality, public policy measures across a wide range of areas must be rolled out and continuously assessed. These include income policies, regulatory reform of the labour market and measures to encourage a sustained increase in the supply of rental housing. Also, moving towards a more sustainable growth model and mitigating the effects of climate change will require a profound economic and technological transformation. In this respect, it is essential that the numerous implications of each economic policy initiative adopted be rigorously assessed and that the highest possible level of international coordination be sought.

Once the ongoing recovery takes hold, a rigorous process of restructuring public finances is needed, to rebuild fiscal space and reduce the financial and macroeconomic vulnerability stemming from persistently high levels of government indebtedness (see Section 3.2). To enhance the credibility of this process, early definition and communication of its main characteristics would be desirable, along with the active participation of all tiers of general government with budgetary powers, accompanied by the implementation of an exhaustive set of structural reforms. The consolidation process must also be based on a comprehensive review of all budget items, including an assessment of the efficiency of expenditure outturn and public revenue-raising, and a detailed analysis of the different possible implications of any budgetary intervention, both in terms of economic growth and redistribution.

In view of its scale and structural approach, the NGEU programme is a unique opportunity to drive the transformation of the Spanish economy, for the medium and long term, especially in the digital and environmental fields (see Section 3.3). To maximise the positive effects of this programme, the reforms contemplated in the Recovery, Transformation and Resilience Plan approved by the Spanish government on 27 April – many of which have implications in the areas mentioned above – will have to be properly defined and decisively implemented, and the different expenditure projects within the ten major areas of action established in the Plan carefully selected. In this respect, three aspects are particularly important. First, the projects should be selected under an appropriate public procurement framework and according to an appropriate design of methodologies for assessment of the different initiatives. Second, insofar as the funds from the NGEU programme should give rise to a far-reaching structural change in the economy, which will probably require a reallocation of resources among firms and among sectors, it should be ensured that there are no obstacles in the Spanish institutional framework that will hinder that process. This could require, in particular, making it easier for firms to enter and leave the market, and for established firms to grow, redesigning the incentives to encourage investment in R&D&I, and reformulating active labour market policies so as to facilitate the

transition of workers from firms and economic sectors in decline to other more dynamic sectors. Third, to encourage the introduction of certain structural reforms, it would be desirable to consider using part of the funds of the NGEU programme to ease the costs that these reforms, although beneficial in the medium and long term, may have for certain groups in the short term.

2 Some effects of the pandemic with potentially lasting implications

2.1 Impact on households

2.1.1 Changes in households' daily activity patterns: mobility, remote working and consumption habits

Since the start of the pandemic, the Spanish population's mobility patterns have changed in accordance with the different lockdown measures imposed at the national and regional level (see Figure 2.2). Google search data, according to mobile phone location data, show a sharp increase in persons remaining in their home and a lower level of travel to workplaces, retail outlets or transport hubs during the lockdown imposed in mid-March 2020. With the subsequent easing of the restrictions and the start of the return to normal, mobility was resumed and was virtually fully restored in the summer months. However, after the summer, mobility decreased again, especially after various measures were introduced by the different authorities to curb the second wave of the pandemic and the second state of alert was announced at the end of October. The indicators underline that the third wave, which occurred after the Christmas period, led to a further significant fall in the mobility indicator.[1]

The increase in remote working has contributed to the lower level of mobility during the working day. According to the Spanish Labour Force Survey (EPA), in 2020 Q2 16% of the population was working from home for more than half their working hours, compared with 4.5% in 2019. However, when the most stringent lockdown measures were eased, remote working declined again, to steady at around 11% of the population (11.2% in 2021 Q1), still distant from its potential level, which has been estimated at slightly over 30% of all workers.[2] By region, the growth in remote working in 2021 Q1 compared with the 2019 average was widespread, albeit significantly higher in Madrid and Catalonia (16 pp and 11 pp higher, respectively), while in all the other regions the increases were below 5 pp.[3] By sociodemographic group (see Chart 2.1), the increase in remote working among workers with a university education is notable. Lastly, in early 2021, only 6.7% of younger workers, between the age of 16 and 24, were working from home.

1 See Ghirelli et al. (2021), forthcoming.
2 See Anghel et al. (2020).
3 See Anghel and Lacuesta (2021).

Figure 2.2
SOME EFFECTS OF THE PANDEMIC WITH POSSIBLE LASTING IMPLICATIONS

SOURCE: Banco de España.

In any event, Spain's relatively small cities, small firm size, high ratio of temporary employment and low intangible investment are all elements that could limit the growth of remote working in Spain. According to the Banco de España Business Activity Survey (EBAE), within the same economic sector remote working is most common in urban areas, in large corporations that have few workers on temporary contracts and a higher proportion of intangible investment.[4]

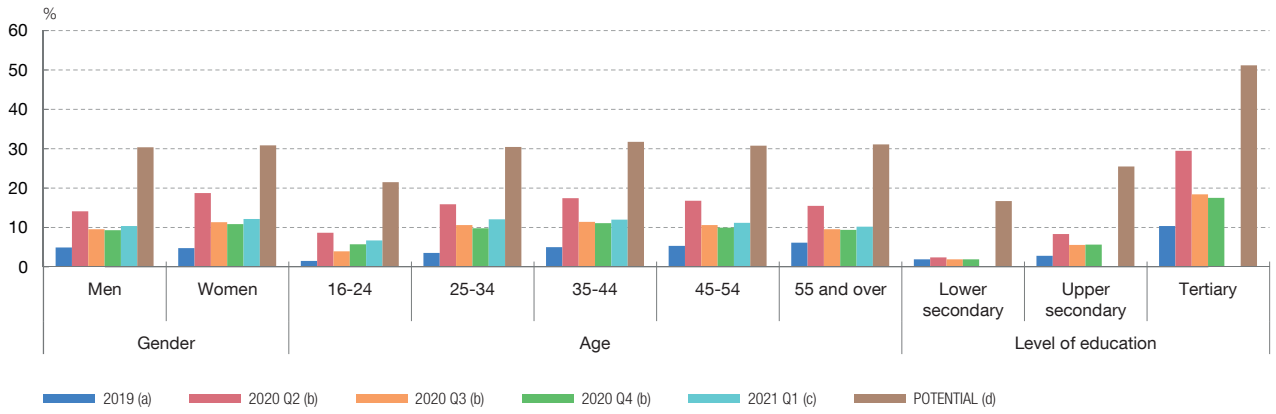
4 See Fernández-Cerezo et al. (2021).

Chart 2.1

REMOTE WORKING IS STILL FAR FROM REACHING ITS POTENTIAL

Spain's relatively small cities, small firm size, high ratio of temporary employment and low intangible investment are all elements that could limit the growth of remote working in Spain. Albeit limited, these changes could affect the recovery in demand for certain products, especially in the big cities.

PROPORTION OF PEOPLE WORKING REMOTELY AT LEAST HALF OF THE WORKING WEEK, BY SOCIODEMOGRAPHIC GROUP



SOURCE: INE (EPA, microdata from the 2019 annual sub-sample and the 2020 living conditions module).

a Using the EPA definition of remote working, based on the question "Did you work from home in the last four weeks (possibility envisaged in your employment contract)?". Possible responses are: "More than half the days I worked"; "Occasionally"; and "No". The chart includes the figures for workers who answer "More than half the days I worked".
b Using data from the working conditions module that has included an identical question to (a) in the EPA since 2020 Q2.
c Education-level data not publicly available provided by the INE bilaterally to 2020 Q4.
d Using the method in Dingel and Neiman (2020). The application of this method to Spain can be found in Anghel et al. (2020).

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These changes in remote working, albeit limited, could affect the recovery in demand for certain products, especially in the big cities. Drawing on data from metropolitan areas in the United States, it has been estimated that working from home could reduce spending in city centres by between 5% and 10%.[5] In the case of Spain (see Box 2.1), certain changes are already being observed in the real estate market as a result of these behaviour patterns. In particular, in terms of house purchases, demand is shifting from the big cities to less densely populated municipalities with lower housing prices. This trend had already been observed before the pandemic but it has quickened with the crisis. In the commercial real estate market demand has declined across the board, most notably in the office sub-segment and in the major city centres.

As people have spent more time in the home, e-commerce has surged, and it will continue to grow in the future as digital skills become more widespread. According to the INE's survey on ITC equipment and its use in households, conducted between March and September 2020, 53.8% of the population between the ages of 16 and 74 had made online purchases for personal reasons in the last three months, compared with 46.9% in the survey conducted between February and May 2019.

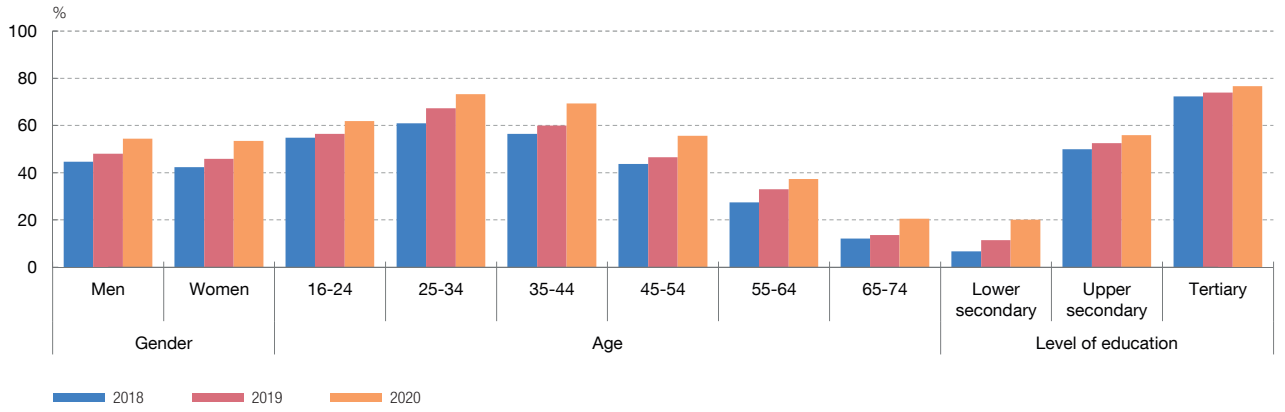
5 See Barrero et al. (2020).

Chart 2.2

E-COMMERCE WILL CONTINUE TO GROW IN THE FUTURE AS THE POPULATION'S DIGITAL SKILLS IMPROVE

The relatively lower use by young people was because they had no card for online payment, whereas in the case of the older population and those with a lower level of education it was on account of a lack of skills and knowledge. The greater use of e-commerce should encourage competition among firms and reduce demand for the products of less competitive firms.

PERCENTAGE OF THE POPULATION THAT HAS MADE AN ONLINE PURCHASE IN THE LAST THREE MONTHS, BY SOCIODEMOGRAPHIC CHARACTERISTICS



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SOURCE: INE (Survey on ITC equipment and its use in households, 2018-2020).

The survey also shows an – albeit more moderate – increase in the average number of purchases in the last three months (4.9 in 2020 compared with 4.4 in 2019) and in the estimated average expenditure per purchaser (€273.8, up 3% on the previous year's survey). There are significant demographic differences in the use of e-commerce by age and level of education (see Chart 2.2). In particular, the level of use is lower among those under 24 and, especially, among those over 55, and also among groups that have less than upper secondary education. According to a question included in the INE's 2019 survey, the relatively lower use by young people was because they had no card for online payment, whereas in the case of the older population and those with a lower level of education it was on account of a lack of skills and knowledge. In 2020, the highest rate of growth was recorded among those groups who had previously made less use of e-commerce, thus narrowing the gap between the different population groups. This dynamism may be expected to continue in the future, on account of the generational change and increasing knowledge of new technologies.

The greater use of e-commerce should encourage competition among firms and reduce demand for the products of less competitive firms. The EBAE also provides information on the type of outlets that are selling their products online. In this case, the use of e-commerce among firms in the same economic sector is similar, once productivity is taken into account. In fact, this is the most determinant factor in the differences observed in the extent to which firms use e-commerce. In the future, this may lead to a shift of sales from less competitive

to more competitive firms, with the consequent benefit for consumers in terms of lower product prices.[6]

Electricity consumption permits analysis not only of mobility during the working day, but also of changes in households' behaviour as regards recreational activities and also sleep patterns. [7] Up to the end of the summer (see Charts 2.3.1 and 2.3.2), Spanish households' electricity consumption between 07:00 and 09:00 was lower, partly because schools were closed and fewer people were travelling to work. However, when schools reopened in September, this lower than usual electricity consumption in the early morning disappeared (see Charts 2.3.3 and 2.3.4). In the summer, electricity consumption between 21:00 and 23:00 was very similar to the pre-pandemic pattern, despite the low levels of both domestic and international travel (see Chart 2.3.2). Yet during the second and third waves of the pandemic, household electricity consumption was abnormally high between 21:00 and 23:00. This would appear to denote more time spent in the home and, therefore, less time spent on recreational activities outside the home in this time band (see Charts 2.3.3 and 2.3.4). The increase in electricity consumption in the evenings was particularly acute in the latter part of October, when some regional governments had ordered the closure of bars and restaurants and following the imposition of a nationwide curfew at 23:00. But this increase in consumption was already noticeable in September and early October, when these restrictions were not yet in force.[8] This voluntary behaviour could be due to a greater awareness of the risks of mobility as from the second wave, by contrast to the behaviour observed in the summer. If this pattern continues, when the restrictions on hospitality and recreational services are withdrawn the consumption recovery could be slower if by that time Spain has not achieved widespread population immunity.[9]

2.1.2 Employment

The adverse impact of the pandemic on employment is being felt most acutely by the most vulnerable workers. As described in Section 3.1 of Chapter 1, at the

6 See Goldmanis et al. (2010) for different examples in the United States from three industries: travel agencies, bookstores and new car dealers. In the case of Spain, Lacuesta et al. (2020) present aggregate-level evidence on the effect that the use of e-commerce has had on mark-ups and profit that is consistent with this assumption.

7 Drawing on Bover et al. (2020). The following analysis draws on information on the hourly electricity consumption of households that pay the regulated rate for small consumers published on the website of Red Eléctrica de España (REE, the Spanish electricity grid operator). At present, around 40% of all Spanish households pay this rate. However, it could be assumed that the behaviour of these households is representative of the sector overall, since in accordance with Fabra et al. (2021), households' characteristics are similar, whether they pay this rate or the free-market rate. In addition, according to the National Commission on Markets and Competition (CNMC) (2019), 80% of consumers are not aware of the differences between this rate and a free-market rate.

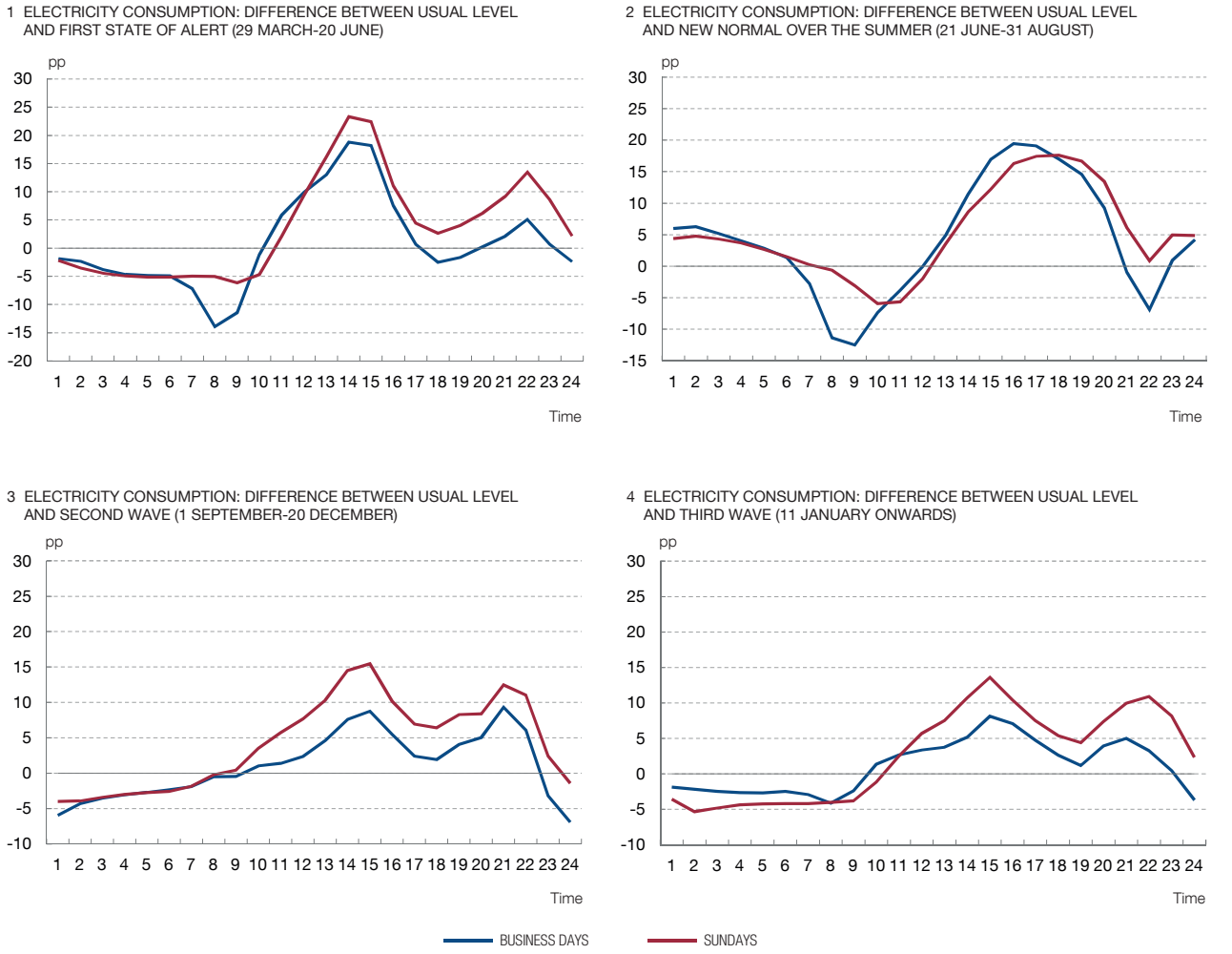
8 See Goolsbe and Syverson (2020) and Gupta et al. (2020).

9 Different articles suggest, using different identification strategies based on regional variations, that a large part of the decrease in mobility was voluntary. See Carvalho et al. (2020) for Spain, Baker et al. (2020) and Cavallo (2020) for the United States, Andersen et al. (2020) for Denmark, Bounie et al. (2020) for France and Seiler (2020) for Switzerland.

Chart 2.3

THE PANDEMIC HAS RESULTED IN FEWER RECREATIONAL ACTIVITIES OUTSIDE THE HOME AND CHANGES IN SLEEP PATTERNS (a)

The increase in electricity consumption in the evenings as from the second wave could be due to a greater awareness of the risks of mobility. Should this pattern continue in the future, when the restrictions on hospitality and recreational services are withdrawn, the recovery in consumption of these services could be slower if by that time Spain has not achieved widespread population immunity.



SOURCE: Banco de España calculations, drawing on REE data.

a See Bover et al. (2020) for details on the methodology. The first step is to extrapolate the electricity consumption of all households from REE data on consumers that pay the regulated rate for small consumers. The usual consumption between 2015 and 2019 is then calculated for each hour of each day of the week (Monday, Tuesday, etc.) as the residual of a regression of the log electricity consumption on dummy month, year, public holiday, temperature and temperature squared variables. For each period and hour, the charts show the average difference between the electricity consumption of all households and its usual value factoring in the day of the week.

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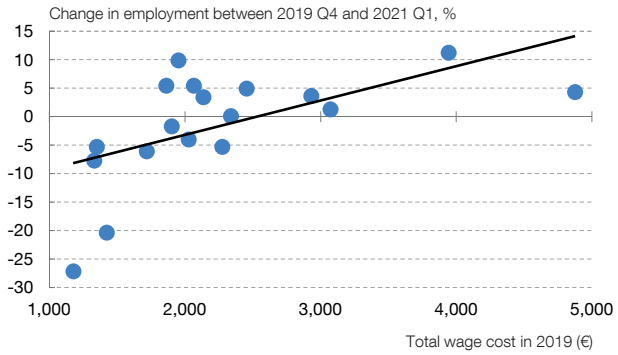
start of the health crisis there was a sharp slump in the Spanish labour market which has reversed only partially in recent quarters. Apart from the scale of this aggregate impact, the fact that it is the most vulnerable groups of workers who have again, as in previous downturns, been the most affected by this crisis stands out. In particular, comparing the EPA data for 2021 Q1 with the pre-pandemic data (2019 Q4), it can be seen that the health crisis has had most impact on employment in those areas of activity that employ a larger proportion of workers who command lower wages (see Chart 2.4.1). In addition, over this period, labour market deterioration was especially

Chart 2.4

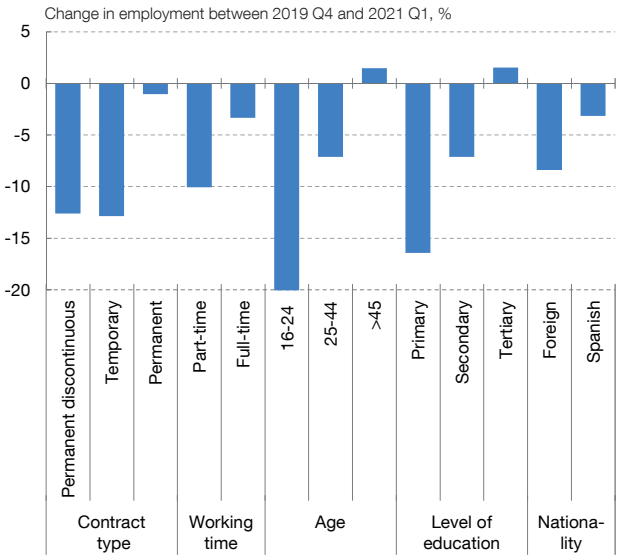
THE PANDEMIC HAS HAD A GREATER IMPACT ON THE EMPLOYMENT OF THE MOST VULNERABLE GROUPS OF WORKERS

Apart from the marked adverse impact that the COVID-19 pandemic is having on aggregate employment, the most vulnerable groups of workers are, as in previous recessions, the hardest hit in this crisis. Specifically, employment has worsened significantly more in low-wage sectors and, by group of workers, for employees with temporary or part-time contracts, the youngest workers and those with a lower level of education. Should these labour market dynamics persist, they could heighten inequality in Spain and hamper the economy's growth potential.

1 CHANGE IN EMPLOYMENT AND WAGE LEVEL, BY SECTOR



2 IMPACT OF THE CRISIS, BY GROUP OF WORKERS



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SOURCE: INE (EPA and quarterly labour costs survey).

acute for employees with temporary contracts – for whom employment fell by 12.9%, much higher than the drop of 1.1% for employees with permanent contracts – and for those who work fewer hours, either with part-time or permanent discontinuous contracts (for whom employment fell by 10.1% and 12.6%, respectively) (see Chart 2.4.2). The decline in employment was also concentrated among younger workers, with a fall of 20% for those in the 16 to 24 age group, and among those with a lower level of education and foreign workers (for whom employment fell by 8.4% during the period analysed, compared with the decline of 3.2% for Spanish nationals).

Overall, these groups of workers predominate in the economic sectors that require a high degree of social interaction and whose future recovery prospects are more uncertain. In this respect, if these labour market dynamics were to persist, they could heighten inequality in Spain and hamper economic growth potential, insofar as there could be a persistent adverse impact on the future employability of these more vulnerable workers.

The pandemic may quicken the process of automation of certain occupations and the need to reallocate workers to other tasks. The fact that a more intensive

use of new technologies has reduced the risk of spread of the virus would seem conducive to this kind of investment. This could accelerate the phasing-out of certain jobs that are mainly devoted to performing automatable tasks.[10] This would be in addition to the lower rate of creation of employment in routine tasks that has been observed at the global level in expansionary periods over the last 30 years.[11] In any event, automation of certain tasks does not necessarily imply a fall in the aggregate employment rate, but rather an increased need for certain groups of workers to change the type of tasks they perform. In consequence, certain innovations may give rise to high productivity growth or even to the creation of new tasks which, in short, would boost employment demand.[12]

This reallocation of tasks could be significant in Spain, especially in occupations that are currently primarily held by women and by workers with a low level of education. Although it is not easy to measure either the risk of automation or the risk of infection at work, various studies point to Spain as one of the OECD countries where both risks could affect a higher proportion of the population.[13] Considering the demographic characteristics of the workers who would be most affected by both risks, it seems this process would have a particularly harsh impact on occupations that are currently primarily held by women and by workers with a low level of education.[14]

2.1.3 Education

The pandemic has posed a fresh challenge for human capital among the new generations, whose level of education is still distant from the levels observed in other European countries. The real estate boom of 1995-2007 drove up the expected relative wages of young adults in work that required little education. As a result, many of the members of the generations born between 1976 and 1990 were early school leavers.[15] Accordingly, even though the education of the following generations was extended on account of the financial crisis that began in 2008, the percentage of young Spanish adults in the 25 to 29 age group who had not completed any post-compulsory education in 2019 was 32% for men and 23% for women, very far from the euro area average (17% and 14%, respectively).

Against this backdrop, the closure of schools and universities during the last term of the 2019/2020 academic year replaced face-to-face teaching with digital online home learning. When the state of alert was declared on 14 March

10 See Caselli et al. (2020).
11 See Jaimovich and Siu (2020).
12 See Acemoglu and Restrepo (2018) and Bessen (2020).
13 See Chernoff and Warman (2020) and OECD (2019).
14 See Chernoff and Warman (2020) and Blanas et al. (2020).
15 See Abramitzky and Lavy (2014), Aparicio-Fenoll (2016) and Lacuesta et al. (2020).

2020, all schools and universities in Spain were temporarily closed. In consequence, pupils and students alike had to complete their last academic term from home and schools and families had to adapt to online education. Access to digital educational resources soared across the country. However, when these data are matched with municipal-level tax data, it seems that although the increase in the use of online tools was widespread, it was higher in lower income per capita municipalities.[16] This could reflect the effort made by schools in rural areas to adjust, bringing them into line with the more habitual use of these tools in schools in urban areas.

This change in teaching methods in 2020 Q2 may have had an adverse impact on academic achievement in the short term, especially among the most disadvantaged groups. There is a host of literature which shows that fewer school days, as a result of legislative changes, length of summer holidays, extreme weather or strikes, negatively affect academic achievement.[17] The extent to which the use of digital resources at home may offset part of this loss must be analysed. To date, the post-pandemic evidence is not very encouraging. For example, in the United States it has been observed that, in schools with a higher proportion of low-income pupils, at the end of the year academic achievement in the digital math program Zearn had fallen by 50%.[18] Also, in the Flemish schools in Belgium, in 2020 pupils in the last year of primary school obtained significantly worse results in mathematics and language in the standardised tests conducted every year in June.[19]

To date there are no analytical studies on this issue for Spain, but as yet it seems that the pandemic has not accelerated early school leaving. Both the central government and the regional governments approved measures aimed at ensuring that the impact of the change in the education system would be minimal. Specifically, the central government adapted the criteria for assessment, moving up grades and qualifications in schools owing to the pandemic. In addition, the regional governments approved various measures that could improve achievement for pupils and students. In particular, they undertook to take on 38,525 new teachers, which will considerably boost the teacher/pupil ratio. For the 2020/2021 academic year, these measures should ease the adverse effects of the pandemic, provided that pupils remain in school. In addition, as was the case in the last financial crisis, the economic crisis has helped keep young people in formal education in view of the fewer economic opportunities available (see Charts 2.5.1 and 2.5.2). In any event, analysis is required of whether this longer time in the classroom is widespread and whether it includes lower income per capita areas. It is also too soon to know whether it will be reflected in higher skills being acquired and a higher probability of pupils obtaining better grades.

16 See Sanz et al. (2021).

17 Regarding each of these factors, see, for example, Pishke (2007), McEachin and Atteberry (2017), Goodman (2014) and Baker (2013), respectively.

18 See Chetty et al. (2020).

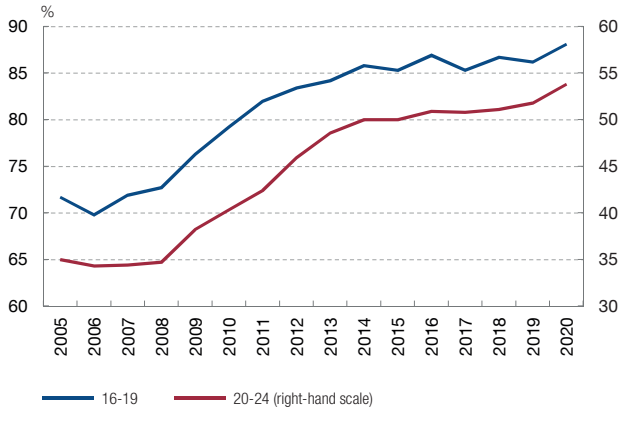
19 See Maldonado and de Witte (2020).

Chart 2.5

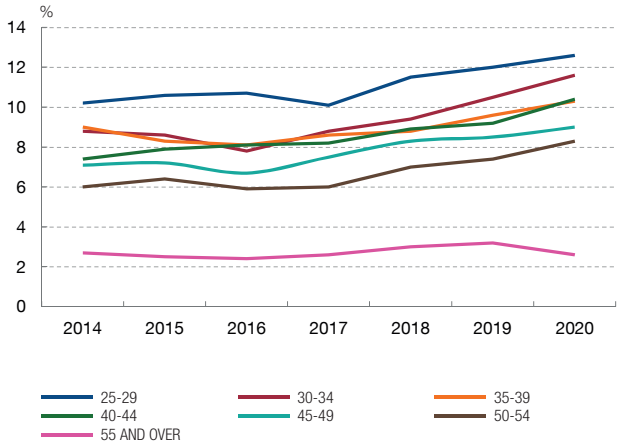
THE PANDEMIC HAS NOT ACCELERATED EARLY SCHOOL LEAVING

Despite the change in teaching methods, young people have remained in formal education in view of the fewer economic opportunities available. The over-55s reduced their participation in non-formal training, possibly because they prefer the face-to-face format.

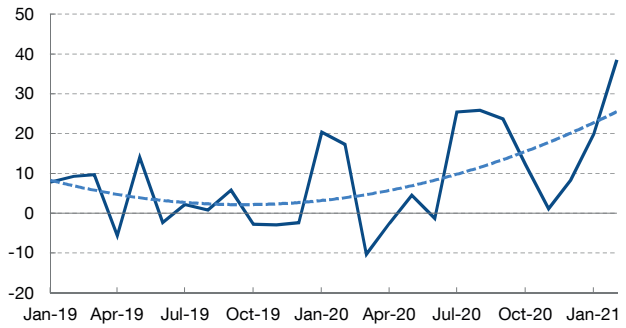
1 PROPORTION OF POPULATION IN FORMAL EDUCATION, BY AGE GROUP (a)



2 PROPORTION OF POPULATION IN NON-FORMAL TRAINING, BY AGE GROUP (a)



3 INTEREST IN VOCATIONAL TRAINING OVER TIME (b)



4 PROPORTION OF DAILY SEARCHES FOR FACE-TO-FACE COURSES (c)

SOURCES: INE (EPA), Google and Observatorio Educaedu.

a Fourth quarter data for each year.
b Weekly data, from Google Trends, on interest in web searches for "vocational training", in the education and employment field, in Spain over the last five years. The interest is measured as an index from 0 to 100, where 0 denotes very few searches and 100 is the most popular search in the specific region and period. The chart depicts the result of a regression of the most interest in each month compared with the same month in other years between 2016 and 2018.
c Requests for information on online or face-to-face courses on the Educaedu portals.

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In the case of non-formal training, the pandemic seems to have had no impact on the slight upward trend observed among the over-25s. On EPA data, participation in non-formal training courses increased among all groups between 25 and 55 years of age, in keeping with the pattern observed in recent years. Only the over-55s reduced their participation in this type of training course. However, in terms of demand, a slight pick-up in interest in Google searches for "vocational training" was observed, especially after the summer of 2020. This interest increased in the opening months of 2021. According to Observatorio Educaedu, a large number of the searches for non-formal training courses are for face-to-face courses, and

this may have caused a certain lag between the search for the information and the decision to take the course, especially among older age groups. In any event, apart from a specific change during lockdown, there appears to have been no permanent increase in the desire to take online courses (see Charts 2.5.3 and 2.5.4). A further point to consider is that the economic transformation associated with the pandemic may have increased doubts as to which course subject to choose.[20]

2.1.4 Health

The distribution of the effects of the pandemic on people's health depends on their previous health status. The COVID-19 pandemic has triggered an unprecedented health crisis, with major implications for people's health, which is in turn an essential determinant of their well-being. Individuals' pre-pandemic health status is crucial, since the risk of mortality or severe illness associated with COVID-19 is related to age and to the presence of pre-existing health problems.[21]

The incidence of health problems among the older population varies considerably across European countries. It is useful to compare the health status of the European population, especially for the age ranges with the highest incidence of health problems. Various indicators show that the proportion of the older population who are in poor health in Spain is higher than in other countries.[22] For example, in 2015 some 33% of the over-70s in Spain had at least two chronic diseases and one in two had limited mobility[23] (see Chart 2.6). As a point of reference, the incidence of chronic diseases in Spain is higher than that observed in countries such as Denmark, Sweden and Switzerland (between 15% and 25%) and lower than that observed in eastern European countries such as the Czech Republic and Poland (40%). Similar patterns are observed, in general, for the 70-84 and the 60-70 age groups.

Limitations in daily living activities, limited mobility and depression are more prevalent among women and among those with a lower level of education. In general, health problems are more prevalent among women than among men.[24] For

20 See Observatorio Educaedu (2020).

21 For instance, evidence for China, Italy, Spain and other countries (Ma et al. (2020), World Health Organization (2020), Istituto Superiore di Sanità (2020), Rodríguez-González et al. (2021)) shows that the risk of severe illness is associated with the existence of chronic diseases such as hypertension, cardiovascular or respiratory disease and diabetes, among others.

22 Mackenbach et al. (2005)

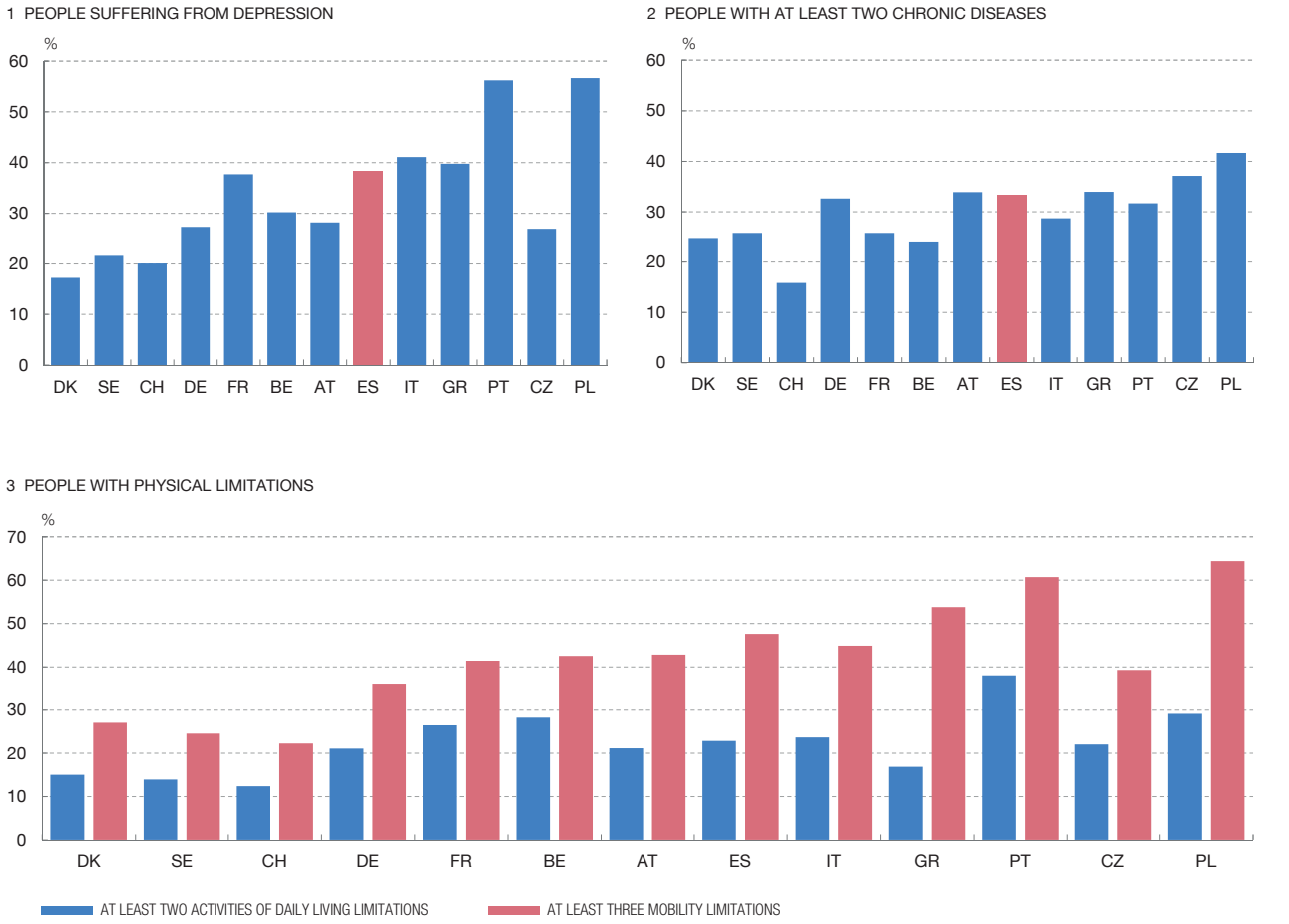
23 Chronic diseases refer to hypertension, diabetes, dementia, cancer and cardiovascular, respiratory and neurological diseases. Limited mobility refers to people who have problems walking 100 metres, sitting in a chair for more than two hours, getting up from a chair after being seated for a long time, climbing stairs, kneeling, raising their arms or lifting heavy objects. See Börsch-Supan (2020a) and here for a more complete reference to the Survey of Health, Ageing and Retirement in Europe (SHARE).

24 Conversely, men are more prone to other potentially fatal diseases such as heart or respiratory disease or diabetes; see Lahelma et al. (1999), Avendano et al. (2005).

Chart 2.6

THE INCIDENCE OF HEALTH PROBLEMS AMONG THE OLDER POPULATION VARIES SIGNIFICANTLY ACROSS EUROPEAN COUNTRIES (a)

Various health indicators show that the proportion of the older population who are in poor health in Spain is higher than in other European countries. A person's previous health status is crucial, since the risk of mortality or severe illness associated with COVID-19 is related to age and to the presence of pre-existing health problems.



SOURCE: SHARE wave 6 (2015).

a Older population means those who are 70 or over.

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example, among the Spanish population over 50, a higher proportion of women have limitations in their daily living activities and, especially, limited mobility (see Chart 2.7).[25] The incidence of depression increases with age for both men and women, but it is substantially higher for women in all age ranges.[26] In addition to the differences by gender, there is a positive correlation between a person's health status and their

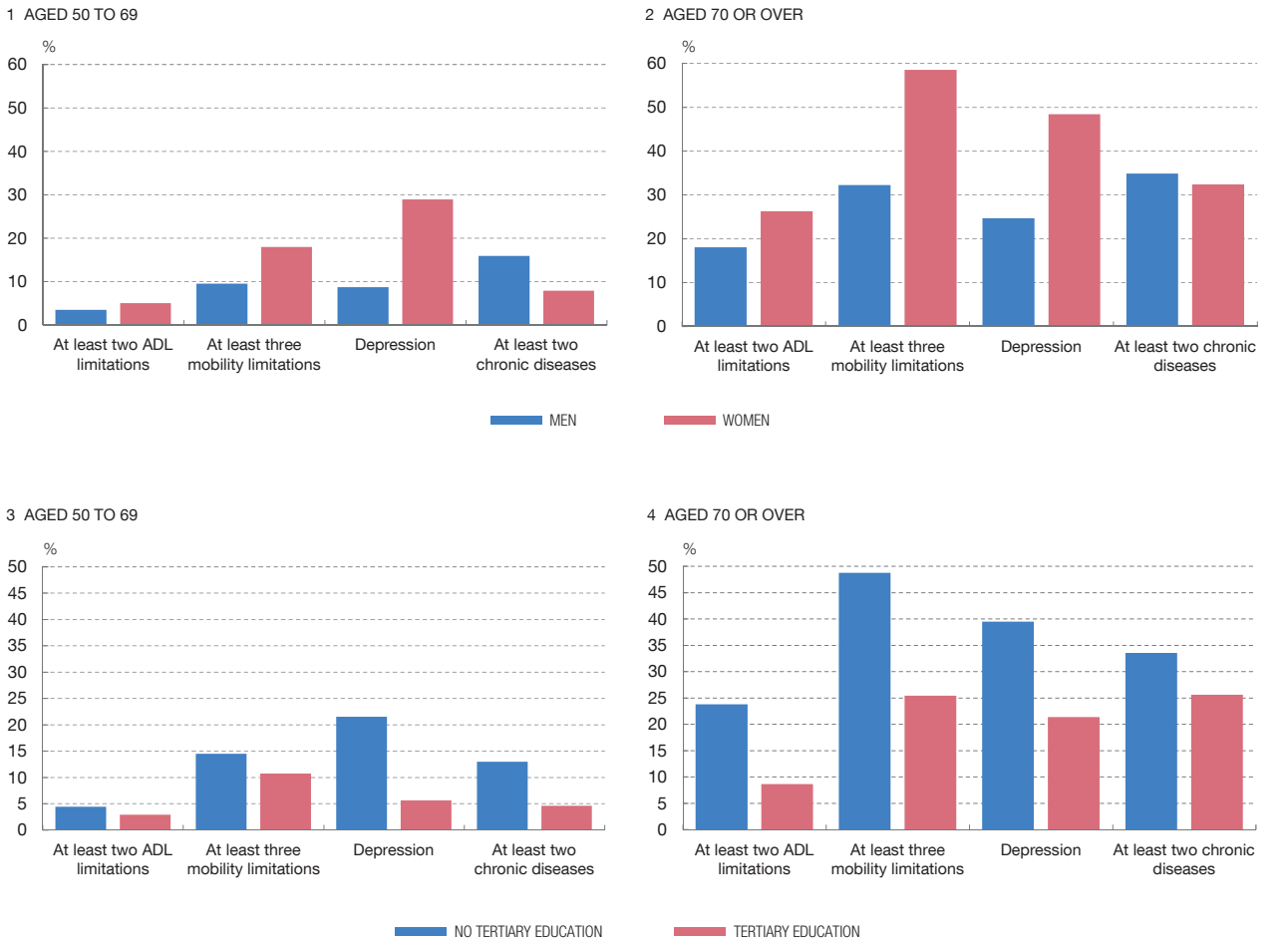
25 The "2+ADLs" (activities of daily living) indicator measures whether the person has limitations with two or more daily living activities, such as dressing, walking, showering, eating, putting themselves to bed or going to the toilet. The "3+mobility limitations" indicator refers to persons with three or more mobility limitations.

26 Depression is defined as having a score of more than 3 on the EURO-D scale. This scale is based on a list of 12 questions that detect the presence of a range of problems – such as depression, pessimism, suicidal feelings, guilt, sleeping problems, lack of interest, irritability, loss of appetite, fatigue, lack of concentration, lack of enjoyment and tearfulness – in the last month before the interview.

Chart 2.7

PERCENTAGE OF OVER-50s WITH HEALTH PROBLEMS, BY GENDER AND EDUCATION LEVEL

Activities of daily living (ADL) limitations, mobility problems and depression are all health problems that are more prevalent among women than among men. In addition, there is a positive correlation – which increases with age – between a person's health status and their education level.



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SOURCE: SHARE wave 6 (2015).

income or education level.[27] Thus, at any age, the incidence of all the health problems considered is higher among those who do not have tertiary education. Moreover, for most of these conditions, these differences increase with age.

Higher excess mortality and greater health deterioration during the pandemic are observed among the older population with poorer health at the outset. Given the different pre-pandemic health status of the different population groups, the pandemic can be expected to have had more impact on the groups whose previous health status was worse. Thus, excess mortality[28] is highest among the

27 See Avendano et al. (2005).

28 Excess mortality has been calculated as the difference between the number of deaths occurring in a specific period in 2020 and the deaths occurring in the same period in 2019, drawing on data from the INE's EDeS project.

oldest population groups; this was especially the case in the first wave of the pandemic. Also, according to the SHARE-COVID19 study,[29] in Spain around 17% of men and women over 50 whose health was poor before the pandemic report that it has worsened during the pandemic. These percentages fall to 3% (men) and 5% (women) among those whose previous health was good.

The incidence of mental health problems, such as depression, anxiety and social isolation, has increased for all population groups, but especially among women. Many of the events of 2020 – fall in income, loss of employment, loss of loved ones, difficulties accessing care or health care, limited personal contact – are generally associated with mental health problems such as depression, stress and social isolation.[30] These problems have worsened for all population groups, although the incidence has been higher among women and persons with chronic diseases or psychiatric problems.[31] In addition, the duration and severity of these adverse circumstances may mean that this deterioration in mental health will persist, which could in turn have long-lasting consequences in other dimensions, such as physical health, mortality, emotional satisfaction or well-being, the ability to work or study, or personal income.[32] Thus, for the over-50s and in all the European countries participating in the SHARE-COVID19 study considered, the probability of suffering anxiety and depression in the early months of the pandemic was higher among women, with the highest rates recorded in countries such as Spain, Italy and Portugal. Specifically, in Spain, 47% of women had experienced anxiety in the month previous to the survey and 38% had experienced greater anxiety than before the onset of the pandemic. These percentages are some 22 pp and 17 pp lower, respectively, for men. The results are qualitatively similar for depression and loneliness: 40% of women over 50 felt depressed and 30% felt lonely. These percentages are almost double those for men. In addition, the incidence of all three mental problems, especially loneliness, increases with age.

Most of the people whose emotional well-being had suffered during the pandemic reported "uncertainty about the future" as the main reason. Taking the Spanish population overall, substantial deterioration is detected[33] in the level of emotional well-being compared with the pre-pandemic level for all population groups, but especially among women and among those aged 35 to 54. Moreover, this deterioration has increased over time (see Charts 2.8.1 and 2.8.2). Between May 2020 and January 2021, 80% of persons whose emotional well-being had declined

29 See Börsch-Supan (2020b).

30 See Panchal et al. (2021).

31 See Leung et al. (2020).

32 See Banks et al. (2020), Fergusson et al. (2002), Janke et al. (2020), Kivimäki et al. (2018), Layard (2013), Peng et al. (2013), Shankar et al. (2011) and Steptoe et al. (2013).

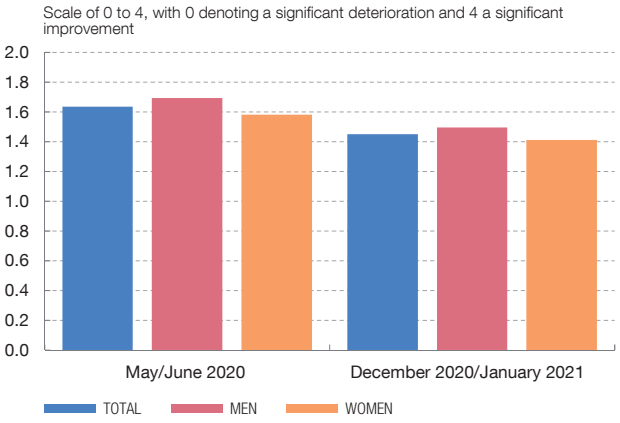
33 Data from the online survey conducted by Martinez-Bravo and Sanz (2021) in June 2020 and January 2021 on a representative sample of individuals by gender, age, region and education level for Spain. The survey contains extensive and detailed information on demographic characteristics, political orientation and values, employment, income and incidence and possible consequences of COVID-19.

Chart 2.8

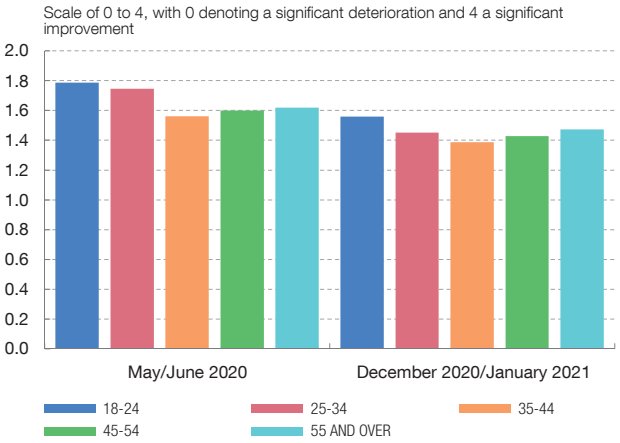
EMOTIONAL WELL-BEING HAS DETERIORATED COMPARED WITH PRE-PANDEMIC LEVELS

Particularly significant declines are reported among women and persons aged 35 to 54. Moreover, the deterioration has worsened over time. Between May 2020 and January 2021, 80% of persons whose emotional well-being had declined compared with their pre-pandemic level reported "uncertainty about the future" as the main reason.

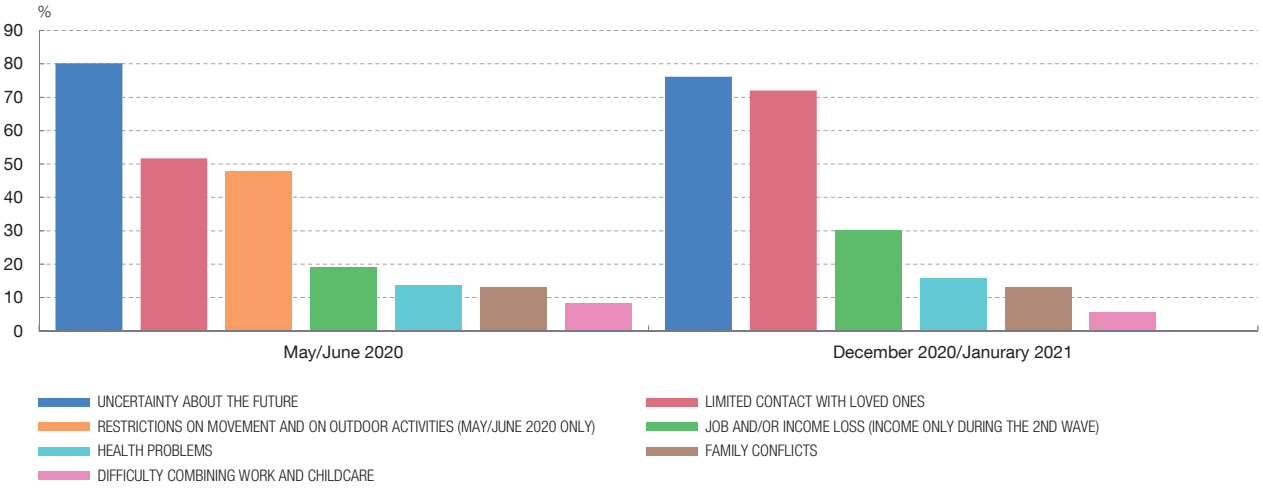
1 BY GENDER: "HOW MUCH HAS YOUR EMOTIONAL WELL-BEING CHANGED SINCE 14 MARCH?"



2 BY AGE GROUP: "HOW MUCH HAS YOUR EMOTIONAL WELL-BEING CHANGED SINCE 14 MARCH?"



3 MAIN REASON FOR DETERIORATION IN EMOTIONAL WELL-BEING (FOR THE ENTIRE POPULATION)



SOURCE: "*Encuesta sobre los efectos económicos y políticos de la COVID-19 en España*", Martinez-Bravo and Sanz (2021).

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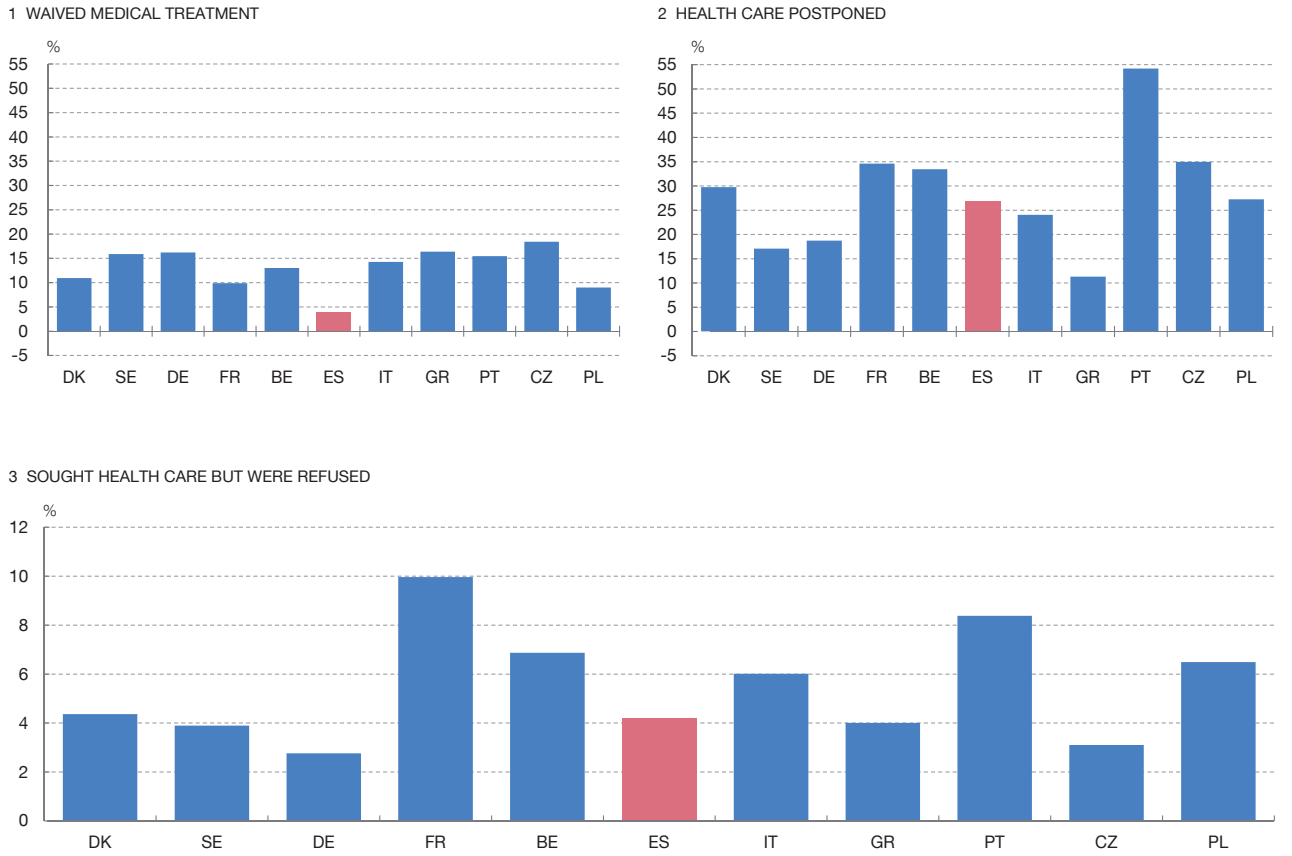
reported "uncertainty about the future" as the main reason. Also, while in May 2020, one out of two persons interviewed indicated that "limited contact with loved ones" was a reason for their emotional deterioration, in January 2021 almost three out of four respondents (72%) mentioned this reason (see Chart 2.8.3). Lastly, around 30% of those interviewed in January 2021 reported that unsteady earnings or income was a reason for their emotional deterioration (40% among the self-employed and workers with temporary employment contracts).

Chart 2.9

RESTRICTIONS ON AND DELAYED ACCESS TO HEALTH CARE MAY HAVE LONG-TERM HEALTH CONSEQUENCES

Considerable percentages of the over-50s in various European countries report having suffered delays in certain types of health care owing to the COVID-19 crisis. In addition, in most countries approximately 10% of people have voluntarily waived health care.



SOURCE: SHARE-COVID-19.

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In some European countries there have been considerable restrictions on and delays in access to health care; this may have long-term consequences for the health of the population. Lastly, restrictions on access to health care have also contributed to a decline in the health of the population and may have long-term consequences. In several European countries where data are available, between 25% and 45% of the over-50s report having suffered delays in certain types of health care owing to the COVID-19 crisis (in Denmark, France, Belgium, Spain, Italy, Portugal and Poland; see Chart 2.9). In Spain, of the 27% who report having had some type of health care postponed in the early months of the pandemic, 73% refer to delays in appointments with specialists and 34% to delays in appointments with their general practitioner. In addition, in most countries approximately 10% of people have voluntarily waived health care; in Spain the figure is under 5%. Regarding care

for the elderly, 24% of persons aged 70 or over who received care at home before the pandemic report that they had more difficulties receiving the amount of care they needed during the early months, mainly because their carers were not able to make home visits.

In late 2020 and early 2021, a very significant decline in the number of births was observed. The short-term effect of the harshest months of the pandemic in the spring of 2020 has been a sharp decrease in the year-on-year rate of births in recent months, with falls of 20% and 21.3% in December 2020 and January 2021, respectively, according to the INE's provisional estimates.[34] This is also being observed in other European countries (-14% in France and -6.4% in Sweden in January 2021 and -21.6% in Italy in December 2020)[35] and could be reflecting the heightened uncertainty in different areas, including medical care during pregnancy, due to the pandemic. Subsequently, a smaller decline was observed in February (-7.7%), which could indicate a slight recovery of the birth rate following the abrupt drop of the previous two months. In any event, it is still too early to infer what the long-term effects of the pandemic may be on Spain's birth rate, which was already low compared to other European countries.

2.1.5 Inequality

Concern about increased income inequality in many OECD countries was recently reflected in the research priorities of various national authorities and international organisations.[36] Apart from other important social considerations, inequality can affect economic growth through various channels. Some wage differentiation between workers with different productivity levels is needed to generate incentives for investment in human capital and, therefore, for economic growth.[37] Yet a high level of inequality can also affect social cohesion and foment social conflict, reducing the level of investment security[38] and also the incentive to work for certain groups.[39]

Spain's relative position internationally varies according to the inequality dimension considered.[40] In terms of the different dimensions of monetary inequality, Spain's position may be summarised as follows:

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34 See Monthly estimates of births, INE.

35 See Financial Times, 10 March 2021.

36 See, for example, Banco de España (2019b).

37 See Welch (1999) and Mueller et al. (2017).

38 See Grossman (1991) and Dijkstra et al. (2020).

39 See Persson and Tabellini (1994) and Alesina and Rodrik (1994).

40 See Anghel et al. (2018). This study covers the time period up to 2014. The time period of the analysis is currently being extended, in the framework of the IFS Deaton Review of Inequalities. See About the review for more details.

— Hourly wage dispersion in Spain is similar to the average of the EU countries.

— When hours and days worked are taken into account, labour income inequality increases in Spain compared with other countries, since groups with lower wages tend to work fewer hours per day and fewer days per year.

— Compared with other European countries, per capita income inequality is high in Spain, associated with the high unemployment rate. The larger average household size and high public pension replacement rates tend to reduce total income inequality.

— Direct taxes reduce income inequality between households, although less so than in other EU countries.

— Although wealth inequality is higher than income inequality, the high proportion of home ownership means that wealth inequality is lower in Spain than in other European countries.

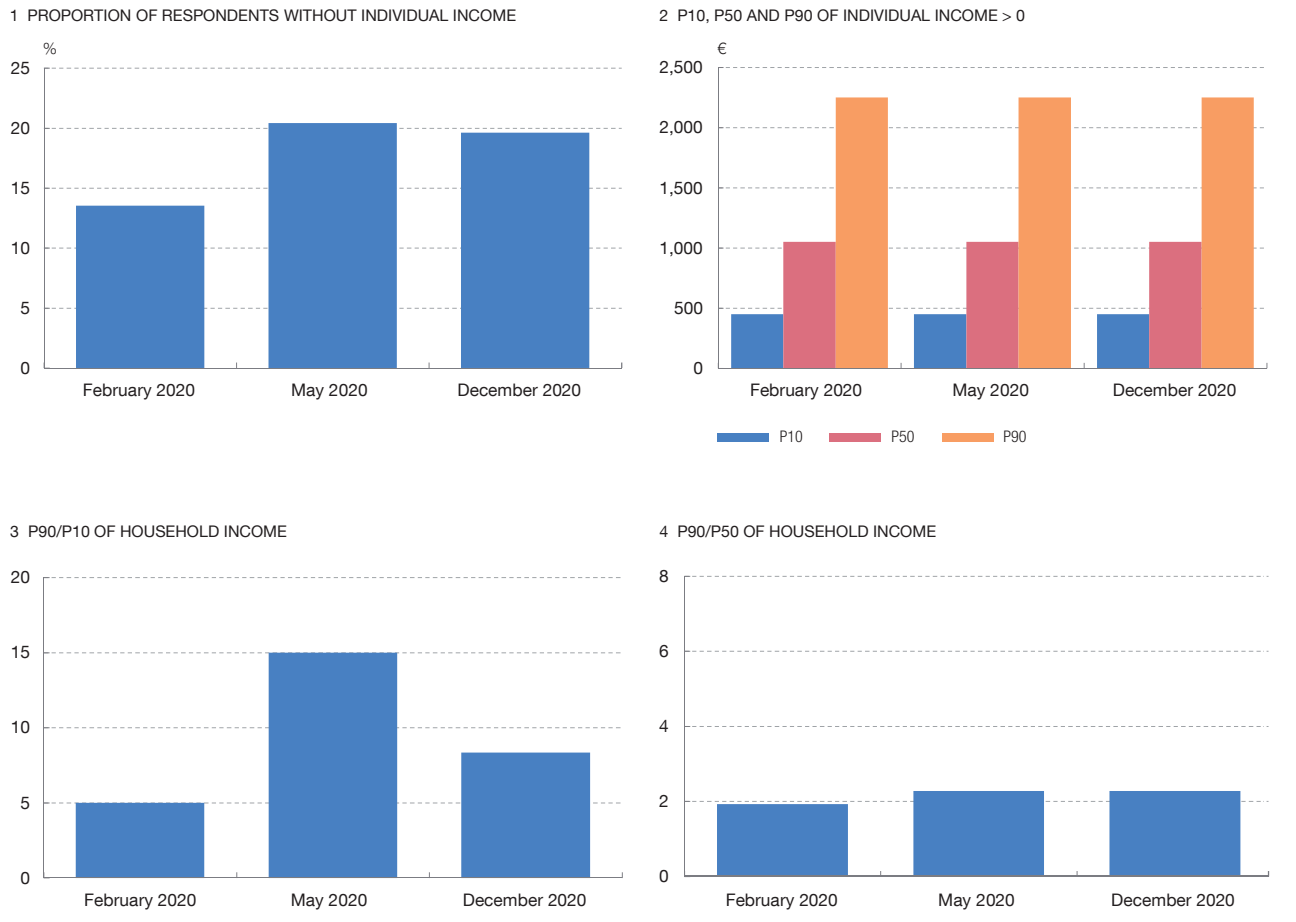
After several years of declining labour income inequality, owing to the favourable employment performance in the last upturn, the pandemic has reversed the path of the indicators once again. A survey on the economic and political impact of COVID-19 in Spain *(Encuesta sobre los efectos económicos y políticos de la COVID-19 en España)* offers a first approximation to these changes.[41] The study calculates net monthly income at the individual and household level at three different points of time in 2020: before the onset of the pandemic (February), in the early weeks of the state of alert (May) and at year-end. In the case of individual income, the biggest change was in the percentage of respondents who ceased to receive income; the changes in income distribution for those who continued to receive income are negligible (see Charts 2.10.1 and 2.10.2). In the case of household income, the ratio of household income in the top 10% of the distribution to household income in the bottom 10% (P90/P10) rose considerably during the first weeks of the state of alert, from 5 to 15 times (see Chart 2.10.3), reflecting an increase from 2.6 to 6.6 times in the ratio of median household income to that of the 10% of households with the lowest income (see Charts 2.10.3 and 2.10.4). At year-end, household income inequality was lower than in May (down from 15 to 8.3 times), but it was still above the pre-pandemic level.

41 See Martinez-Bravo and Sanz (2021). The study collects data, in income brackets, on individuals' and households' average net monthly income in 2019, the change in this income during the early weeks of the state of alert (15 March to 31 May 2020), and the change in income between pre-pandemic and current levels (December 2020/January 2021 compared with February 2020). The questions refer to all types of income, not just labour income.

Chart 2.10

THE PANDEMIC APPEARS TO HAVE INCREASED THE LEVEL OF INCOME INEQUALITY

The biggest change arose in the percentage of respondents who ceased to receive income, since the changes in individual income distribution for those who continued to receive it are negligible. The ratio of household income in the top 10% of the distribution to household income in the bottom 10% (P90/P10) rose during the first weeks of the state of alert. It was lower in December 2020 than in May, but remained above the pre-pandemic level.



SOURCE: "*Encuesta sobre los efectos económicos y políticos de la COVID-19 en España*", Martinez-Bravo and Sanz (2021).

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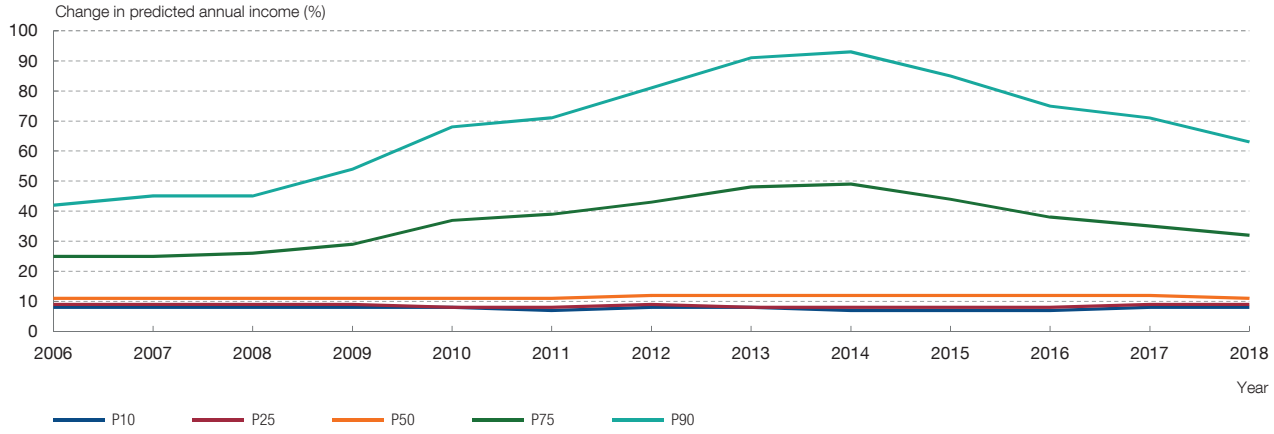
Another relevant dimension to changes in labour income inequality is inequality in uncertainty about future income. This dimension of monetary inequality is interesting because a secure income flow usually provides more well-being than an uncertain income flow, even if the income flows are expected to be similar. Thus, an increase in income risk inequality may per se generate asymmetrical losses in well-being between different individuals. In addition, it may either mitigate or exacerbate income inequality, according to its level by income segment. It is also interesting to see how income risk inequality varies over the economic cycle. There is a well-known close correlation between

Chart 2.11

INCOME UNCERTAINTY COULD HAVE INCREASED SIGNIFICANTLY SINCE THE ONSET OF THE PANDEMIC (a)

For the period 2005-2018 it is estimated that less than half of 25- to 54-year-olds had an almost perfect level of certainty regarding their following year's income. For the remainder, the level of uncertainty is exacerbated during downturns. By population group, uncertainty levels are higher among young adults (the under-35s), workers with temporary employment contracts and persons whose income lies in the lower quartile of the distribution.



SOURCE: Arellano et al. (2021).

a The chart depicts the change over time in the percentiles of the distribution of the coefficients of variation (CVs) which measure the following: persons with expected income of €50,000 and a CV of 10% would expect a deviation from their average income of ±€5,000 in the following year, while a CV of 50% would denote an expected deviation from their average income of ±€25,000 in the following year.

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employment and labour income inequality,[42] but its correlation with income security inequality is less well known.

In Spain, income risk inequality amplifies income inequality, increases in downturns and has most impact on the younger population. Specifically, drawing on data from the period 2005-2018, it is estimated that less than half of 25- to 54-year-olds have a very high level of certainty regarding their future income over a one-year horizon, compared with the remainder who face considerable uncertainty.[43] By income level, uncertainty is higher for lower income groups; moreover, this higher uncertainty accentuates during downturns, while for those for whom uncertainty is not very relevant there is very little change. In consequence, inequality in uncertainty about future income is countercyclical (see Chart 2.11), increasing in downturns and decreasing in growth periods. By population group, the health crisis is expected to have increased uncertainty about future income, especially among young adults (the under-35s), workers with temporary employment contracts and persons whose income lies in the lower quartile of the distribution.

42 See Bonhomme and Hospido (2016).

43 See Arellano et al. (2021).

2.2 Impact on potential economic growth

Assessing the effects of the crisis on potential output presents notable challenges, not only in terms of their quantification, but also their sign. The problems that usually arise when measuring potential output, owing to its status as an unobservable variable, are exacerbated in such a highly uncertain situation as the present one. Moreover, only a very imperfect prediction can be made of the numerous channels through which potential output could be affected in the medium and long term during a crisis such as the present one.

The economic literature has sought to determine the extent to which the long-term effects of a shock hinge on its nature, but the evidence is not conclusive. Specifically, part of the literature argues that the impact on potential output is more pronounced in endogenous crises, such as those triggered by the build-up of imbalances or other previous vulnerabilities, especially if their origin is financial.[44] However, the exogenous shocks of the two oil price rises in the 1970s also had a very long-lasting impact on GDP growth rates.[45] In the specific case of a pandemic (exogenous shock), the historical evidence tends to support the effects being fundamentally transitory.[46] Yet extreme events of this kind have also had persistent effects.[47]

Ultimately, the scale and persistence of the effects on potential output will crucially depend on the duration of the shock. Protracted and sharp recessions have historically had an adverse impact on the trend component of activity, giving rise to what are known as hysteresis episodes.[48] A large part of this effect is channelled through the labour market, insofar as the duration of an episode of unemployment tends to feed back into itself. One possible channel for this is through the loss of workers' human capital as the period of unemployment persists, posing ever-greater obstacles to the emergence of job opportunities.[49] In addition, enduring unemployment can have a discouragement effect, reducing the incentive to seek work. Thus, persistently high long-term unemployment rates can have adverse effects on potential growth. Similarly, the longer a crisis lasts, the greater the impact on total factor productivity and, consequently, on potential growth, as a result of the lower R&D expenditure that is typically associated with recessions.[50]

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44 Martín-Fuentes and Moder (2020) find that the main source of the adverse effects of financial crises on potential growth stems from the persistent effects on the capital stock, while the impacts on the labour input and on total factor productivity, although also significant, are more transitory.

45 See Bodnár et al. (2020) and Blinder and Rudd (2013).

46 The evidence in Bodnár et al. (2020) and Barro et al. (2020) points in this direction.

47 Jordá et al. (2020) analyse 15 major pandemics since the Middle Ages and identify severe long-run consequences.

48 See Cerra et al. (2020).

49 The initial contribution to this literature is Blanchard and Summers (1986). Fatás and Summers (2017) provide evidence for episodes of fiscal consolidation that are maintained over time.

50 See Anzoategui et al. (2019).

The nature of the jobs lost as a result of the crisis suggests it could have an adverse effect on the labour input contribution to potential output by pushing up structural unemployment. The distinctive characteristics of this crisis may have specific effects on the accumulation of the two factors of production (labour and capital) in the long term. In the case of the labour input, its contribution to potential growth once the health crisis has ended will depend on the characteristics of the individuals who have lost their jobs and on the possibility of permanent, pandemic-induced changes in the relative demand for different goods and services that, in turn, would call for a transformation of the productive system. In particular, if the crisis were to prompt a permanent reduction in demand for the sectors that have been hit hardest to date, reallocating workers to other activities could be complex, because those who have lost their jobs have relatively lower skill levels and, therefore, may also be less employable. In addition, the COVID-19 crisis is driving digitalisation and task automation processes. These require higher skilled jobs and, consequently, represent an additional source of potential mismatch between workers' skills and those sought by employers. This reaffirms the desirability of shoring up the income protection and employment safeguard elements of the short-time work schemes (ERTEs) with active policies that broaden the skills of the workers concerned.

The crisis could also affect the labour input contribution to potential output through other additional channels. Immigrant labour accounts for a relatively higher share in the services most affected by the containment measures than in the overall economy. Consequently, any permanent decrease in the demand for such services would tend to have a negative impact on immigrant flows, thereby dampening growth of the working-age population.[51] By age group, younger workers have been particularly hit by job losses. Given that it is relatively unlikely these workers will leave the labour market, this age composition of job losses is less harmful to the labour supply than if older workers had been the most affected cohort, as the likelihood of their leaving the labour market is higher.

The idiosyncratic effects of the pandemic on capital stock in the long term are likely to be predominantly negative, although some public policies will help preserve and modernise the Spanish economy's productive capital. First, as analysed in detail in Chapter 3 of this Report, the crisis has severely affected the liquidity of a high proportion of firms, particularly those operating in the hardest hit sectors. Although liquidity needs have been partly alleviated by the public measures adopted, these firms will emerge from the crisis with notably higher debt levels than before the pandemic. This will undermine their investment capacity for some time and, in some cases, may even jeopardise their viability.[52,53] The suspension of activity

51 Obviously, the sign of the flows would also depend on the economic situation in the countries of origin.

52 See Chapter 3 of this Report and Blanco et al. (2020).

53 To address this problem, Royal Decree-Law 5/2021 of 12 March 2021 on extraordinary measures to support business solvency in response to the COVID-19 pandemic sets up a €1 billion recapitalisation fund for firms affected by the pandemic, a direct assistance facility totalling €7 billion for firms and the self-employed to reduce

in some sectors owing to the containment measures also appears to have contributed to extending the useful life of certain productive assets, which would reduce future investment needs.[54] By contrast, the public measures to support firms' survival is helping preserve existing capital stock. Lastly, as analysed below, the NGEU programme will contribute to expanding the physical capital stock, on account of the increase in public investment and its spillover effect on investment by non-financial corporations.

The channels through which the crisis could affect total factor productivity are numerous, although the net impact is uncertain. One significant channel is business demography. Since the crisis began, it has been accompanied by significant changes in the patterns of business births and deaths. The evidence from various sources suggests that, since the onset of the pandemic, there has been a marked decline in the number of firms in Spain, associated with a simultaneous decrease in business births and deaths. These features have been more severe in the sectors hardest hit by the measures taken to contain the pandemic.[55] The reduction in business deaths – which, a priori, is opposite to what might be expected in a recession – reflects the impact of the package of measures rolled out by the authorities to mitigate the effects of the crisis on firms' liquidity flows and also that of the insolvency moratoria, exempting debtors from the obligation to apply for insolvency proceedings and rejecting the filings initiated by creditors.

In the future, it is essential that public policies foster an appropriate balance between ensuring the survival of viable firms with solvency problems and facilitating the efficient exit of non-viable firms from the market. An inefficiently high level of corporate liquidations would undermine economic growth possibilities in the medium and long term. While some of the factors of production released could be used in other firms or sectors, the consequences for the economy's productivity are likely to be negative, especially in the short and medium term. This would be attributable to the disappearance of specific high-value worker-firm matches, the loss of customer-supplier relationships, and the impairment of intangible assets during the liquidation process.[56] Conversely, public policies should not hamper the liquidation of non-viable firms in sectors that face a permanent decrease in demand, especially if the subsequent reallocation of activity entails a shift from low-productivity firms to more efficient ones. Reallocating resources to more productive firms would have positive effects on aggregate productivity, owing to a composition effect similar to that observed in the wake of the financial crisis.[57] In this context, maintaining

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debt arranged from March 2020, and another facility of €3 billion for restructuring State-backed financial debt for these groups.

54 See Bodnár et al. (2020).

55 See Izquierdo (2021b).

56 See Di Mauro and Syverson (2020).

57 See Banco de España (2015). Also, based on data from the Decision Maker Panel survey of UK firms, Bloom et al. (2021) consider that the reallocation of resources from firms in low-productivity sectors and, in particular, from

favourable financial conditions will be a prerequisite for fostering momentum in business births after the pandemic, particularly as regards more innovative firms.[58]

The pandemic appears to have accelerated the take-up of new technologies. The containment measures have accelerated transformations that were already being observed in how work is organised and in product distribution channels. Once firms have incurred the fixed costs to adopt such changes, they are likely to be maintained, at least in part, in the future, which should result in productivity gains in the medium term. This is reflected in the two waves of the EBAE conducted to date, which show that investment in new technologies, adaptation to e-commerce and the adoption of remote working are the activities that the highest proportion of Spanish firms report they intend to step up in the future.[59] This evidence therefore appears to support the existence of a potential positive effect on intra-firm productivity, compared with the greater uncertainty as regards the impact on productivity of the reallocation of resources among firms.[60]

In the euro area, the projects associated with the NGEU programme should also generate productivity gains. Some advanced economies have announced public investment plans (such as the American Jobs Plan in the United States) aimed at strengthening potential growth. In the European Union, this role is to be fulfilled by the NGEU. As further described in Section 3.3 and Box 2.3, this programme should focus on projects that foster the economy's structural transformation towards sectors whose weight will increase after the crisis. Depending on the projects financed, these funds have the ability to give a significant boost to the economy's potential output, not only through productivity gains but also, as indicated, through an increase in productive capital.

In the opposite direction, a hypothetical brake on world trade could adversely affect total factor productivity. It has been suggested that the crisis could lead to a shortening of global value chains, using fewer inputs from other geographical areas, thus reversing part of the productivity gains from globalisation. However, to date, there is scant evidence of this (see Section 2.5).

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the least productive firms within these sectors to higher-productivity sectors will increase the economy's total factor productivity by 1%.

58 Albert et al. (2020) also find that the sharp decline in entries of new innovative firms owing to a modest worsening of financial conditions could have very severe long-run consequences in terms of employment. This evidence suggests the importance of developing specific policies aimed at promoting the creation of new firms and supporting them while they are young. Benedetti-Fasil et al. (2020) find that the adverse effect of the exit of innovative young firms on employment is particularly high in the services sector.

59 See Izquierdo (2021a), Fernández-Cerezo et al. (2021) and Riom and Valero (2020). The latter sets out the findings of a survey in the United Kingdom indicating that businesses in that country have rapidly adopted new technologies and new ways of working in response to the pandemic. The respondents reported that they even intend to step up these processes after the pandemic.

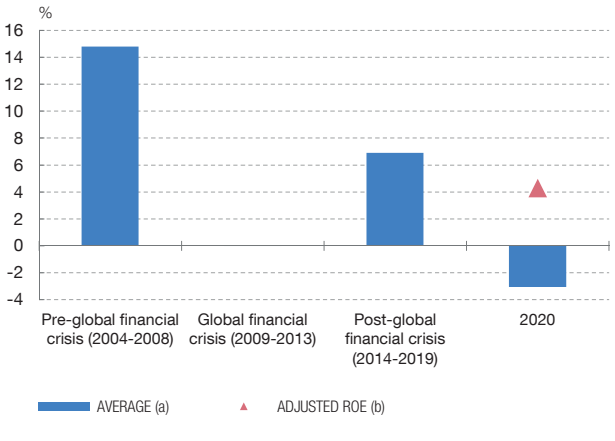
60 Bloom et al (2021) consider that, based on the Decision Maker Panel survey, the pandemic has led to a significant decline in 'within firm' total factor productivity in the United Kingdom, attributable to the increase in the cost of inputs prompted by the containment measures. However, this effect would be largely restricted to the duration of the health crisis, disappearing practically in full once it is over.

Chart 2.12

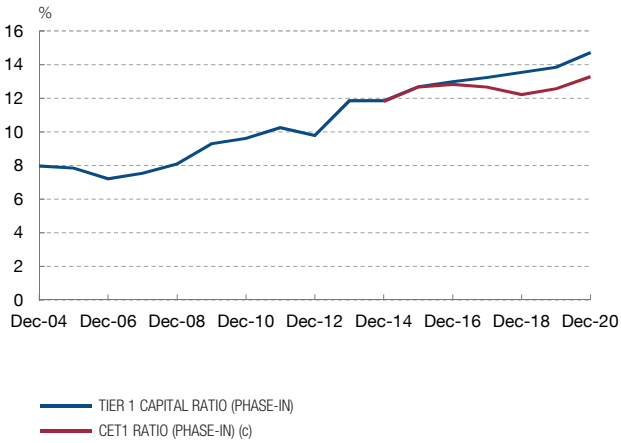
THE PROFITABILITY OF THE SPANISH BANKING SYSTEM WAS NEGATIVE IN 2020, OWING IN PART TO EXTRAORDINARY ADJUSTMENTS

Prior to the outbreak of the COVID-19 pandemic, the return on equity (ROE) of the Spanish banking system stood at around 7%, still far below pre-global financial crisis levels. In 2020 the health crisis and some extraordinary adjustments – for instance, to goodwill of some foreign subsidiaries – drove ROE into negative territory. Even so, capital ratios continued to rise, helped in part by some of the measures adopted by the authorities in response to the pandemic.

1 PROFITABILITY (ROE) OF THE SPANISH BANKING SYSTEM PRE- AND POST-PANDEMIC



2 TIER 1 CAPITAL RATIOS



SOURCE: Banco de España.

a Average ROE of the Spanish banking system for each period.
b ROE of the Spanish banking system in 2020, stripping out extraordinary negative adjustments (goodwill, DTAs and impairment of a bank due to a valuation adjustment) and positive adjustments (business sales).
c The CET1 time series starts in 2014 because this is when the prudential solvency standards commonly known as "Basel III", which include CET1 as a more stringent measurement of capital, were first applied.

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2.3 Banking sector

The economic crisis triggered by the COVID-19 pandemic and certain extraordinary adjustments drove the profitability of the Spanish banking system into negative territory in 2020. Specifically, return on assets (ROA) stood at -0.21% and return on equity (ROE) at -3.1% in 2020, down 0.72 pp and 10 pp, respectively, on 2019 (see Chart 2.12.1). Part of this decrease was due to non-recurring adjustments in the accounts of three significant institutions: in two cases owing to a decrease in goodwill and, in the third, to a correction of fair value, in accordance with the accounting standards, as a consequence of its participation in a merger. Stripping out these extraordinary items, the profitability of the Spanish banking system would have been positive in 2020 (ROA of 0.3% and ROE of 4.3%), albeit slightly less so than in 2019. The decline in profitability that was not linked to extraordinary items was a result of the decrease in net interest income and, especially, of the increase in provisions for financial asset impairment. The lower operating expenses and the gains on financial transactions were not sufficient to fully offset this impact. In addition, the appreciation of the euro against other currencies over the year shaped the income and expenses of business abroad, reducing their equivalent value in euro.

However, banks' average CET1 solvency ratio rose by 71 basis points (bp) to 13.3% (see Chart 2.12.2). The extraordinary factors that shaped banks' average negative profitability in 2020 affect balance sheet items that are not included in the calculation of prudential capital and, therefore, had no impact on the performance of this variable. Rather, solvency ratios benefited from some of the measures adopted by the authorities in response to the pandemic, which aimed to ensure that the banking sector continued to provide funding to the private sector. In this respect, in the case of the numerator of these capital ratios, the recommendation not to distribute dividend, together with the European Union's "quick fix" amending prudential regulations (in particular, the exemption from deduction of investment in software), led to an increase in banks' capital levels. In addition, regarding the denominator of these capital ratios, risk-weighted assets fell, among other reasons as a consequence of the State-backed loan guarantee schemes and the "quick fix" package (for example, the SME support factor).

Overall, the prudential and accounting measures adopted by the various financial authorities helped sustain the momentum of the flow of credit to the private sector throughout 2020. The empirical evidence available shows that banks with higher solvency levels are able to provide more funding to the private sector – especially, as in the current crisis, amid very high uncertainty – and also to participate more extensively in State-backed credit support programmes.[61] In any event, even though solvency ratios rose in 2020 and are above prudential requirements, in this respect the Spanish banking system still lags behind the average of the rest of the European banking sector.

Bank credit to the Spanish non-financial private sector picked up again in 2020. After more than a decade of gradual deleveraging, bank lending to households and non-financial corporations rose by 3.5% in 2020. However, while bank lending to business quickened significantly, growing by 8.9%, lending to households fell again, albeit only moderately (-0.5%). These lending patterns would probably have been very different had the authorities not introduced a broad set of measures to mitigate the adverse effects of the pandemic on the income and liquidity of households and firms. Specifically, the public guarantee scheme to encourage lending to business accounted for 34% of new credit drawn in 2020, and allowed some firms operating in the sectors hardest hit by the crisis to meet a significant part of their liquidity needs. In addition, the loan moratoria schemes for individuals, which in December 2020 accounted for some 3% of credit to the non-financial private sector, have temporarily released households particularly affected by the crisis from part of their financial obligations. This will probably have prevented these agents from having to make even greater adjustments to their current expenditure.

61 See Martínez-Miera and Vegas (2021).

Credit risk is one of the major challenges for the banking system in the coming years. Considering the fall in GDP in 2020, the fact that NPL ratios not only did not increase but fell in 2020 could be considered an anomaly in historical terms. Among other factors, this aggregate behaviour could be explained, at least in part, by the nature of the shock that triggered the – eminently temporary – present crisis, the absence of previous financial imbalances and the effectiveness of the economic policy measures adopted to ease the impact of the pandemic. In any event, at a more disaggregated level, some increases in NPLs have been observed in certain portfolios, such as consumer loans, and in certain economic sectors that were hardest hit by the crisis in the last stretch of the year. Loans with a significant increase in credit risk since initial recognition have also grown and could be seen as a forward indicator of potential deterioration in the credit quality of loans. In this respect, it is noteworthy that the signs of credit impairment in the guaranteed loan and moratoria portfolios are significantly higher than in the other portfolios, as is to be expected given the especially vulnerable situation of the groups targeted by these measures. Looking ahead, although at the cut-off date for this Report the rate of credit risk provisioning appears to be appropriate at the aggregate level – albeit rather heterogeneous across banks – this provisioning effort will probably have to be maintained in the coming years, or even increased if the economic recovery proves to be slower than expected.

On a broader time horizon, the low interest rate environment, climate change and the digitalisation of the economy are key challenges for the banking sector. The present low interest rate environment places a constraint on the banking sector's ability to increase its net interest income and also incentivises risk-taking. As regards climate change, it is essential that banks correctly include climate change-related risks in their decision-taking processes. In the case of the process of digitalisation of the economy, not only does it require higher investment in technology in the banking sector, but it also poses major new challenges for the sector, such as those related to cybersecurity and the growing competition from BigTechs.

The banking sector has very low greenhouse gas emissions, but it may be significantly affected by climate change-related risks through their impact on the creditworthiness of households and firms. Climate change poses physical risks, stemming from the associated environmental imbalances, and also transition risks, linked to the impact on activity of the economic policies rolled out to mitigate its effects. Insofar as these risks may affect the creditworthiness of households and firms, they could also have a significant impact on expected profitability and on the credit risk the banking sector assumes in its lending to these agents. These aspects must be correctly included in banking sector risk management, so that credit institutions can contribute, briskly and efficiently, to the far-reaching process of reallocation of resources between economic sectors and firms that the transition towards a more sustainable economy requires. Indeed, bank lending policy could

have a decisive influence on the speed of this transition, for example, to the extent that it facilitates the green investments needed in the different sectors of activity.

Deposit institutions, together with regulatory and supervisory authorities, need to identify the direct and indirect channels through which they are exposed to climate change-related risks and the transition towards a more sustainable economy. This analysis is not straightforward. First, owing to the inherent complexity of defining climate change-related risks, which have long-term horizons and are subject to a high degree of uncertainty. This task is also hindered by the current lack of information available and, despite recent progress, by the lack of consolidated international standards in this field.[62] Deposit institutions will have to exploit and expand their databases to include these new elements in their risk management. To allow them to correctly assess climate change-related risks and include them in their portfolio management, supervisors can play a complementary role, by developing appropriate supervisory databases and reporting requirements and by including these risks in financial stability analyses, for example, in the form of environmental stress tests that are currently being developed by the Banco de España and the central banks of other European economies.[63] In this respect, it should be noted that the draft Climate Change and Energy Transition bill envisages that the Banco de España, the National Securities Market Commission and the Directorate General of Insurance and Pension Funds must jointly draw up, every two years, a report assessing the risk for the Spanish financial system derived from climate change and the policies to combat it.

The challenges associated with cybersecurity and the growing competition from BigTechs makes it even more important for the banking sector to increase its efficiency, particularly through greater digitalisation. Competition from BigTechs exerts further downward pressure on banking sector profitability, which as indicated above has been weakened by the pandemic and which also faced certain challenges – such as excess capacity, despite the significant reduction in recent years – before the onset of the health crisis. BigTechs have a huge volume of data on their customers and they use these data efficiently to meet their needs. Accordingly, in sectors where they have gained a presence in recent years, BigTechs have taken over the most profitable business segments, in many cases driving out the traditional operators. To address the – potentially highly disruptive – challenge that BigTechs pose for the banking sector, it is essential that banks continue to enhance efficiency, cut costs and step up their use of new technologies. To achieve these goals, they need to make significant investment in digitalisation and to incorporate new data processing technologies that will allow them to alter their business model while, at the same time, controlling their risk profile.

62 See, for example, European Commission (2020a), Deschryver and de Mariz (2020) and Task Force on Climate-related Financial Disclosures (2020).

63 See Hernández de Cos (2021c).

The growing digitalisation of economic activity entails both risks and opportunities for the banking sector. According to whether opportunities or risks predominate, the banking sector's ability to provide credit to non-financial agents could be either enhanced or marred. If the latter were the case, it is difficult to foresee whether the new financial sector entrants could fully make up for an eventual reduction in the bank lending supply. For example, the new entrants might focus only on certain segments of the financial business, such as payment services, but this would impair the overall profitability of the traditional banking sector and could thus hinder investment in new technologies in other economic sectors. Against this backdrop, it is key to ensure that the banking sector strengthens its technological renovation efforts, and that appropriate financial regulation is uniformly applied to comparable financial services, thus avoiding regulatory arbitrage.

2.4 Public finances

Before the onset of the COVID-19 pandemic, the Spanish economy had managed to recover only part of its fiscal space, which had deteriorated sharply following the global financial crisis and the European sovereign debt crisis. Despite the relatively robust growth path followed since 2014, at end-2019, before the onset of the health crisis, the Spanish economy still had a budget deficit equivalent to 2.9% of GDP, the second-highest budgetary imbalance in the euro area behind France, and a public debt-to-GDP ratio of 95.5%, just 5.2 pp below the previous all-time high recorded in 2014 and well above the debt-to-GDP ratio recorded before the 2008-2013 recession (35.8%). Indeed, stripping out the economic cycle effect, in 2019 Spain's structural public finance deficit still stood around 3% of GDP, with no decrease since 2015.

Since the start of the health crisis, fiscal policy has remained clearly expansionary. As described in Chapter 1, in Spain and in most European countries, the scale of the economic contraction caused by the COVID-19 pandemic made it necessary to roll out a swift and ambitious fiscal policy response. The aim of this response was to mitigate, in the short term, the adverse impact of the crisis on the most vulnerable households and firms, and to avoid, in the medium and long term, persistent damage to economic growth capacity. This fiscal policy stance was endorsed and facilitated in March 2020 when the Council of the European Union activated the Stability and Growth Pact's escape clause, temporarily suspending the deficit and debt requirements envisaged in European fiscal rules, and temporarily relaxed State aid restrictions.

The impact of the measures approved in 2020 on the budget balance is estimated at around 4.5 pp of GDP. Most of this impact is related to the roll-out of measures primarily aimed at addressing the health, social and economic consequences of the pandemic. These measures included, in particular: higher

Table 2.1
MAIN FISCAL POLICY MEASURES ADOPTED IN SPAIN (a)

% of GDP	Impact in 2020			Impact in 2021		
	Temporary	Permanent	Total	Temporary	Permanent	Total
Revenue items (b)	-0.1	—	-0.1	-0.04	0.2	0.2
Reduction of VAT on healthcare products (c)	-0.04	—	-0.04	-0.04	—	-0.04
Changes in the prepayments system (VAT and personal and corporate income tax)	-0.03	—	-0.03	—	—	—
New taxes on financial transactions and digital services	—	—	—	—	0.1	0.1
Tax changes in the State budget for 2021	—	—	—	—	0.1	0.1
Expenditure items	4.0	0.4	4.5	2.1	0.6	2.7
Benefits for furloughed workers	1.4	—	1.4	0.4	—	0.4
Benefits for the self-employed obliged to suspend their activity	0.4	—	0.4	0.2	—	0.2
Subsidies to firms and the self-employed relating to exempted social security contributions	0.7	—	0.7	0.1	—	0.1
Social and healthcare expenditure related to COVID-19 (d)	1.1	—	1.1	0.5	—	0.5
Extraordinary benefit for temporary inability to work owing to COVID-19 (d)	0.2	—	0.2	0.1	—	0.1
Business solvency support measures	0.2	—	0.2	0.8	—	0.8
Minimum income scheme	—	0.04	0.0	—	0.2	0.2
Increase in public sector wages (e)	—	0.2	0.2	—	0.2	0.2
Increase in pensions (e)	—	0.2	0.2	—	0.1	0.1
Net balance			-4.5			-2.5
Contingent risks (f)			7.8			0.6
Public guarantees for bank lending to business			7.8			0.6
Capital injections in businesses			0.04			0.04
Measures without a budgetary impact			2.2			0.1
Legislative moratoria bank loans (g)			2.2			0.1
Deferral of rentals and utilities payments			NA			NA

SOURCES: Agencia Tributaria, ICO, IGAE, Ministerio de Hacienda and Banco de España.

a Impact estimated by the Banco de España, drawing on available information.
b Excluding deferrals of tax and social security liabilities falling due in the same year. According to the tax authorities, for the taxes collected by them during 2020, the deferred balance totalled a maximum of 0.4% of GDP in May and has gradually fallen since then. In 2021 tax liabilities falling due in April may once again be deferred for up to six months.
c Including the reduction of VAT on protective masks.
d Estimate of actual expenditure in 2020, drawing on data published by the IGAE, and that forecast for 2021.
e Measured by comparison with an increase identical to that in the CPI.
f Amounts granted in 2020 and in 2021 up to the cut-off date for this Report.
g Outstanding amount of the loans subject to moratoria up to the cut-off date for this Report.

budget allocations to meet the increase in health expenditure; employment and labour income support measures (making the short-time work schemes more flexible and providing benefits for self-employed persons obliged to suspend their activity); increased social protection measures for the most disadvantaged groups; and measures taken to provide liquidity to firms against the backdrop of a sharp drop in their income (see Table 2.1). In addition, other measures not directly related to the health crisis were also approved in 2020, such as the increase in public pensions and public sector wages and the launch of the minimum income scheme. Also

noteworthy, although they entail no immediate increase in expenditure, are the State-backed guarantees granted through the ICO guarantee facilities – established in 2020 to encourage bank lending to business – and which, as at March 2021, constitute a contingent risk for general government equivalent to 8.4% of GDP. This is more than the volume of exposure assumed in the euro area on average through similar schemes (around 4% of GDP).

In 2021, the fiscal policy stance will remain expansionary and this will help shore up the still fragile recovery of the Spanish economy. Although many of the measures approved in 2020 to mitigate the adverse effects of the pandemic will be maintained during much of 2021, their impact on public finances is expected to be more limited than in 2020 (see Table 2.1). This is partly due to the recovery in economic activity expected in the coming quarters. In any event, in accordance with the primary structural balance,[64] the fiscal policy stance will continue to be expansionary in 2021 since the lower weight of the above-mentioned measures should be offset by the fiscal impulse stemming from the funds received under the NGEU programme (see Section 3.3).

In any event, as a consequence of the crisis, public finances have become more vulnerable and future fiscal space has decreased, so a budgetary consolidation process will be essential once the recovery takes hold. As is explained in detail in Section 3.1 of Chapter 1 of this Report, in 2020 the functioning of the automatic stabilisers and the budgetary impact of the various measures taken to mitigate the effects of the pandemic prompted an acute deterioration in public finances, which could have been even worse, and possibly more persistent, had the economic policy response been less decisive. In particular, the general government deficit rose to 11% of GDP in 2020, 8.1 pp more than in 2019, and the public debt-to-GDP ratio closed the year at 120%, 24.5 pp above its end-2019 level.[65] Also in this period, the structural public finance deficit, which was already very large before the onset of the pandemic, grew by some 1.5 pp. As a result, the general government budgetary imbalance is expected to remain relatively high in the coming years (see Section 3.3 of Chapter 1 of this Report). So far this deterioration in public finances has not translated into a worsening of the conditions on which the public sector and the domestic corporate sector access external financing on the international capital markets. This is largely due to the decisive monetary policy measures rolled out by the ECB in response to the pandemic. However, persistently high government indebtedness is a major source of macro-financial vulnerability for the economy overall and should be addressed, from a medium-term perspective, by means of a credible, ambitious and comprehensive process of restructuring of public finances (see Section 3.2).

64 In accordance with Eurosystem methodology, the calculation of the primary structural balance excludes flows with the EU, including the funds to be received through the NGEU programme, as they are not residents' income.

65 The reclassification of Sareb as part of the general government sector in 2020 contributed 0.9 pp of GDP to the increase in the deficit in that year, and 3 pp of GDP to the increase in the public debt-to-GDP ratio.

2.5 Global impact

The disruptions in world trade caused by the pandemic could amplify some previous patterns (see Box 2.2). At the start of the crisis, there was some level of disruption in global trade chains and a number of countries adopted protectionist measures on trade in medical goods.[66] Today, the recovery could be hindered at the global level by certain measures that are affecting free trade and the distribution of vaccines.[67] Yet these measures may be set within a broader process that was already under way before the onset of the pandemic, in which growing importance is given to national considerations in the solution of multilateral problems and there is some questioning of the international framework based on WTO rules. Certain recent landmarks in this respect are the US-China trade rivalry and Brexit. Although none of these have given rise to higher tariff barriers worldwide, they have increased trade uncertainty,[68] with adverse effects on global trade flows, and have prompted trade diversion in the short term. In addition, national and regional preferences for certain global public goods, such as environmental concerns, employment standards or food safety, are increasingly resulting in higher non-tariff trade barriers between countries.

A global framework of shared multilateral rules is essential to address the long-term challenges facing national economies. Recent experience shows that trade integration and diversification have helped address the impact of the global health crisis and are essential for the recovery. In this setting, strengthening the multilateral dialogue will shore up the economic recovery, speed up the distribution of vaccines worldwide[69] and address some of the new emerging challenges, such as the fight against climate change, technological competence or data processing by multinationals.

In the case of Europe, some of these initiatives are included among the policies set out in the European Union's Open Strategic Autonomy. This initiative is designed as a framework for coordination of a broad set of policies to propel the external projection of the European Union, advocating trade openness and multilateralism and, at the same time, strengthening the region's economic and financial resilience.[70] To this end, the focus is on elements of industrial policy that seek to make European production chains more robust, reduce the reliance on third countries in certain strategic areas, boost investment in sensitive and high value-

66 See García et al. (2020).

67 Including preferential supply agreements in the producer country (especially in the United States and the United Kingdom in the first six months of the vaccination processes), provisions that allow supply to the domestic market to be prioritised in emergency situations, or restrictions on the export of vaccines (for example in India, which is a leading vaccine manufacturer worldwide).

68 See Albrizio et al. (2021), forthcoming.

69 As in the case of the COVAX initiative, which seeks to purchase and distribute vaccines equitably among lower income countries.

70 See L'Hotellerie-Fallois et al. (2021).

added sectors, fostering economies of scale and positive network effects, and, in short, increase the influence of the European Union worldwide. In any event, the achievement of these goals must be combined with the strengthening of the European governance framework, with permanent mutual assurance tools – such as a central fiscal capacity, unemployment insurance or a common safe asset – to mitigate asymmetries and reinforced cohesion policies to avoid real divergences among Member States that could distort the functioning of the single market. In addition, these processes must be focused on providing the private sector with the appropriate incentives and legal frameworks, avoiding policies that may distort efficient allocation and the consequent capacity for innovation.

In any event, greater resilience in the critical goods production process must be underpinned by efficiency criteria. The measures designed to strengthen global value chains must not only protect economic incentives, respecting internationally integrated production processes, but also identify critical points in these processes, so as to ensure correct risk diversification. The global health crisis has shown that firms whose production is more integrated in global value chains are more resilient to crises and experience less production disruption. In addition, the available evidence indicates that these firms are better placed to recover after a shock and that, although they are more exposed to supply shocks in their suppliers' countries, they are more resilient to domestic ones.[71]

3 Tools available to the Spanish economy to undertake its structural transformation

3.1 Structural reforms

The challenges the Spanish economy will have to face in the coming years are substantial and closely interrelated; tackling them requires a comprehensive strategy of ambitious and lasting structural reforms (see Figure 2.3). Some of the main challenges that the Spanish economy will have to face in the coming years are: raising the economy's potential growth, correcting the persistent shortcomings of the Spanish labour market, reinforcing the sustainability of public finances and addressing the far-reaching economic implications of population ageing, high inequality, climate change and economic digitalisation. These challenges are characterised by their close interlinkages, their vast complexity and scope, and their structural nature. The economic policy response should therefore involve a comprehensive growth and employment strategy based on the implementation of an ambitious set of structural reforms. Furthermore, it should be underpinned by broad consensus among the different political, social and economic agents in Spain to

71 See Box 2.2.

Figure 2.3
COMPREHENSIVE STRUCTURAL REFORM STRATEGY

SOURCE: Banco de España.

ensure it is a strategy designed to last.[72] The rest of this section presents the main courses of action that should comprise this global growth and employment strategy, some of which are also analysed in depth in Section 3.3, given their special relevance for the projects under the European NGEU programme.

72 See, for example, Hernández de Cos (2020) and Banco de España (2020).

Spain needs to step up its productivity growth. The Spanish economy's potential growth, which was already relatively low before this crisis, could be eroded for some time as a result of it (see Section 2.2). Against this background, it is particularly important to step up the pace of productivity growth, as this is the main determinant of the Spanish economy's modest potential growth capacity. Over the last two decades, Spain's productivity growth rate has been very low (0.2% on average per year) and has lagged significantly behind that of some of the main advanced economies, such as Germany (0.8%) and the United States (0.9%). This weaker relative productivity performance is seen across almost all industries (see Chart 2.13.1).

For productivity to gather momentum, various types of actions are required including measures to encourage business growth. The demographic structure of the Spanish productive system, characterised by a very high relative weight of smaller-sized firms,[73] is one of the main factors behind Spain's low aggregate productivity. This is not only because productivity tends to increase with firm size, both in Spain and in other European countries, but also because it is precisely in smaller Spanish firms where there is a wider negative productivity gap in relation to their European counterparts (see Chart 2.13.2), even allowing for the different sectoral composition of these economies. Therefore, it is necessary to delve into the various reasons why the Spanish business sector is so skewed towards small low-productivity firms and mitigate their effects. In particular, it would be advisable to promote access by smaller-sized firms to a wider range of sources of external financing in more favourable conditions and review the extent to which the institutional framework – as defined, for example, by the regulations governing product and factor markets – could be limiting firms' development and productivity.[74] In this context, it would also be important to enhance the efficiency of the judicial system, which may require providing it with more resources, stepping up its digitalisation and developing alternative dispute resolution mechanisms. In this respect, it should be noted that the swift and efficient functioning of debt restructuring and corporate insolvency and liquidation procedures is essential, not only to allow for an adequate reallocation of productive resources in the economy, but also to incentivise entrepreneurship and business start-ups (see Box 3.3).

It is essential to promote the accumulation of human and technological capital. Two additional factors behind the low relative productivity of the Spanish economy are the human capital shortfall that it still has compared to other European countries and the limited significance of activities linked to innovation. Indeed, despite the progress made in recent decades, the educational attainment level of employees, entrepreneurs and the self-employed in Spain is considerably lower than in the euro

73 See Banco de España (2016).

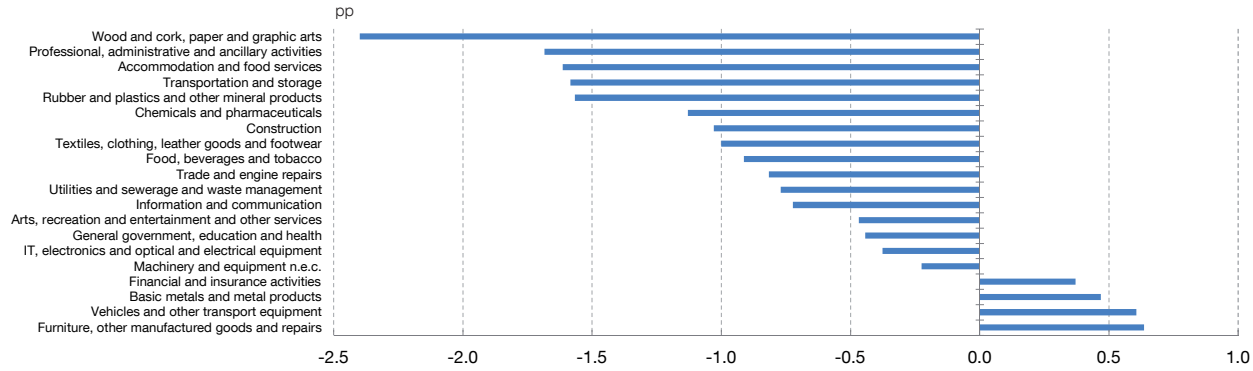
74 See, for example, Dejuán and Mora-Sanguinetti (2019), Mora-Sanguinetti and Pérez-Valls (2020) and De Lucio and Mora-Sanguinetti (2021).

Chart 2.13

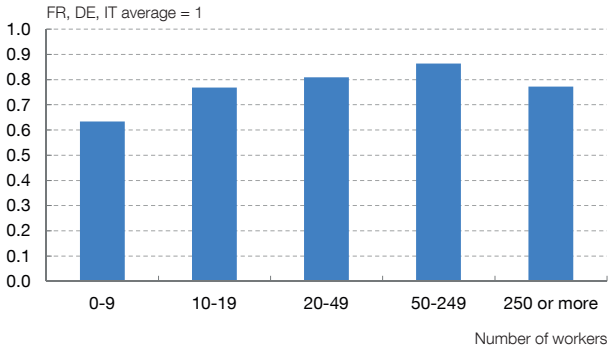
A COMPREHENSIVE STRUCTURAL REFORM STRATEGY IS NEEDED TO ADDRESS THE MEDIUM-TERM CHALLENGES FACING THE SPANISH ECONOMY

Spain needs to step up its productivity growth. Compared with other European countries, weaker relative productivity performance is seen across almost all industries. The productivity differential is worse precisely in the case of smaller-sized firms, which account for a very high relative weight of the Spanish productive system. Correcting Spain's structural labour market shortcomings is also crucial. These shortcomings are largely responsible for Spain having far higher rates of unemployment and temporary employment than those recorded in other advanced economies. In the coming years, the Spanish economy must also address the far-reaching implications of population ageing, high inequality, the ecological transition and digitalisation.

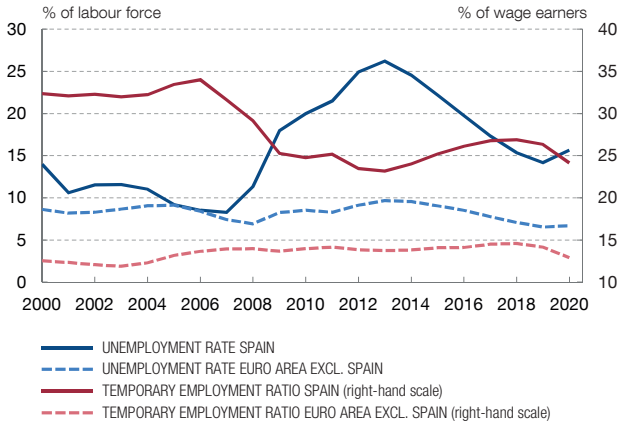
1 ANNUAL GROWTH DIFFERENTIAL IN TOTAL FACTOR PRODUCTIVITY (TFP) BETWEEN SPAIN AND EU-12 (2000-2016) (a)



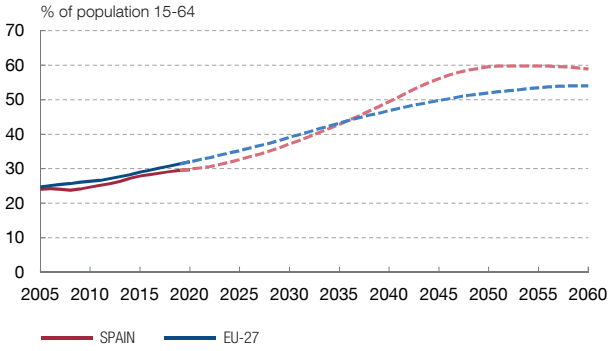
2 RELATIVE PRODUCTIVITY OF SPANISH FIRMS BY FIRM SIZE IN 2018



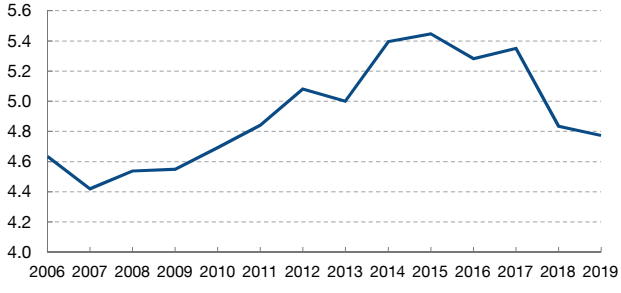
3 UNEMPLOYMENT RATE AND TEMPORARY EMPLOYMENT RATIO



4 DEPENDENCY RATIO, RECENT CHANGE AND PROJECTIONS (population +65 / population 15-64) (b)



5 P90/P10 OF NET HOUSEHOLD INCOME PER CAPITA (c)



SOURCES: EU KLEMS, Eurostat, INE and Banco de España.

a See Cuadrado et al. (2020). EU-12: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Italy, Netherlands, Spain, Sweden and United Kingdom.
b EUROPOP2019 projections.
c Living Conditions Survey (ECV). Net household income per capita is OECD equivalence scale adjusted net household income.

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area as a whole.[75] The weight of public and private investment in R&D in Spanish GDP is also very low, accounting for 0.5% and 0.7%, respectively, in 2018, below the ratios for the EU average (0.7% and 1.5%). In addition, very few firms actively innovate (36.9% of the total, compared with 57.7% in Germany and 63.7% in France,[76] for example). This latter aspect could be linked, at least in part, to a business demography in which smaller, less innovative firms are predominant, in relative terms. With a view to bridging these human and technological capital gaps, it would be advisable, first, to consider an extensive overhaul of the Spanish educational system (both compulsory education and university and vocational training), including reviewing curriculum content, adopting new learning strategies, promoting excellence and incorporating some of the best international practices in these areas.[77] Additionally, it seems essential to reinforce innovation support mechanisms, in terms of management (for instance, by fostering synergies between the different public and private institutions involved in innovation) and financing (specifically, by thoroughly revising R&D tax incentives and strengthening the role that venture capital firms can play) (see Section 3.3).

The Spanish labour market is characterised by showing persistently high rates of unemployment and temporary employment, which have an adverse effect on many economic and social aspects. Specifically, taking the last two decades as reference, the rates of unemployment and temporary employment in Spain stood, on average, at 16% and 28.1%, respectively, far above the percentages for the euro area as a whole (9.4% and 15.3%, respectively) (see Chart 2.13.3). This extraordinarily distinct behaviour of the Spanish labour market, which persists in both economic upswings and downturns and which cannot be explained by the particular sectoral composition of the Spanish economy, has far-reaching negative implications. Thus, for instance, high levels of unemployment often entail higher rates of long-term unemployment. This implies more adverse economic and social effects. Moreover, in a setting in which there is a very significant gap in the level of employment protection between workers on temporary contracts and those with permanent contracts, the former have disproportionately borne the brunt of job destruction flows in the Spanish economy in recent decades, a pattern that is also being observed in the current crisis. Since particularly vulnerable groups – such as young people and workers with a lower level of education – are predominant among temporary workers, these Spanish labour market dynamics impinge very negatively,

75 In Spain, in particular, 38.9% of the self-employed, 35.9% of employers and 31.1% of employees had a lower educational level in 2019, according to Eurostat. These percentages are far higher than those for the euro area as a whole (22.2%, 19.0% and 18.8%, respectively).

76 See Community Innovation Survey 2016.

77 In this respect, the Organic Law amending the Organic Law on Education (LOMLOE by its Spanish abbreviation) was approved in December 2020 and the Plan for Modernising Vocational Training was presented in July 2020. Various aspects of these regulations are yet to be defined. In any case, ensuring a broad political consensus would be particularly important to provide them with the greatest possible stability (see Gortázar (2020)). Firm progress must also be made in the approval of a new Law on the Organisation of the University System (LOSU, by its Spanish abbreviation), to introduce changes in the selection systems for teaching and research staff and reinforce the linking of the system's funding to meeting excellence goals.

and structurally in many cases, on areas as diverse as inequality, uncertainty surrounding future labour income, the rate of new household formation and the process of human capital accumulation.

Correcting Spain's labour market shortcomings requires reducing the high duality between temporary and permanent workers and strengthening active labour market policies. Mechanisms need to be explored to reconcile a certain flexibility in hiring with a more equitable distribution of employment protection for workers according to their type of contract at any given time. In particular, among the different options that could be considered in this regard are contracts with growing firing costs or, as analysed in detail in Section 3.3 and in Box 2.4, a mixed system that combines a reform of firing costs in Spain – with a view to promoting a more equitable distribution among the different types of contracts – with the establishment of a capitalisation fund to which firms make a periodical contribution on behalf of each of their workers. Employees could recover these contributions in the event of involuntary loss of employment or, if they have not done so before, upon retirement. Moreover, as also analysed in Section 3.3, it is imperative to strengthen active labour market policies, not only to avoid permanent impairment of the human capital of those who have lost their jobs, but also to adapt this human capital to the new demands of a society and economic activity subject to a continuous and intense process of technological change, against the backdrop of a gradually ageing workforce. This would increase the employability of the unemployed and pave the way for the consequent reallocation of productive resources among sectors and firms.

Population ageing has substantial implications for many aspects of economic activity. The Spanish population is undergoing intense demographic changes that will lead to a very considerable increase in Spain's dependency ratio in the coming decades. In particular, according to Eurostat projections, in Spain this rate – which measures the ratio of the population aged over 65 to the population aged between 15 and 64 – will increase by more than 25 pp over the next 25 years, to 56.1% in 2045. This marked process of population ageing, which will foreseeably be more acute in Spain than in other European countries (see Chart 2.13.4), poses a wide range of challenges in various areas of economic activity.[78] Thus, for instance, these demographic dynamics will have far-reaching implications for public finances, since they will significantly increase spending needs in healthcare, long-term care and pensions. They will also affect the level and composition of tax revenue, as households' consumption, saving and investment decisions vary significantly over the life cycle of individuals. Population ageing will also have a bearing on economic growth capacity through its impact on the labour market (as the labour force participation rate tends to fall around retirement age) and on worker productivity (as people's physical and cognitive skills deteriorate over time).[79]

78 See Banco de España (2019a).

79 See Anghel and Lacuesta (2020).

Addressing the many challenges posed by demographic change calls for resolute action on multiple fronts. In particular, it would be advisable to analyse the reasons for Spain's low fertility rate, both compared with other European countries and with respect to the *desired* fertility rate of Spanish women of childbearing age. The available evidence suggests that some of these reasons could be linked to work-life balance-related difficulties. This would warrant strengthening support for families and increasing labour market opportunities for young women with children, since it is they who are frequently most affected, from an economic and employment standpoint, by the decision to have children.[80] It would also be desirable to adapt migration policy in Spain to the changing needs of the labour market. Furthermore, measures are needed that will promote longer working lives for older workers. To this end, it is essential to mitigate impaired employability of workers as they age, through both active labour market policies and lifelong learning, and to promote more flexible working conditions that allow for a better match between older workers' skills and needs and labour market demands.

The challenge that population ageing poses for the public pension system needs to be addressed. Although the demographic dynamics of Spanish society alone already imply a significant increase in social security spending in the coming years, the return to a system of pension revaluation indexed to inflation and the suspension of application of the sustainability factor place considerable additional upward pressure on this expenditure.[81] At a time when the public pension system has already been running large deficits in recent years, these developments make it imperative to introduce additional measures to strengthen the financial sustainability of the system. In this respect, it should be noted that some of the latest recommendations of the Toledo Pact Committee and the Spanish Independent Authority for Fiscal Responsibility (AIReF) – which propose shifting several expenditure items from Social Security to the State and transferring to Social Security part of the social security contributions earmarked for the National Public Employment Service – would allow part of the social security deficit to be reduced. However, this would be at the expense of increasing the State deficit. Therefore, in principle, these recommendations would have no effects on the general government budgetary balance. Moreover, through these measures alone it would not be possible to address the increase in social security expenditure that will occur in the coming years as a result of the demographic changes. Thus, for instance, in a scenario in which pension benefit revaluation is indexed to the CPI and the sustainability factor is maintained, the AIReF estimates that, given Spain's demographic dynamics, social security expenditure will increase by around 3.3 pp of GDP in 2050. This increase would be 0.9 pp higher in a scenario in which the sustainability factor is permanently eliminated. For all these reasons, in a setting in which all tiers of general government must undertake a fiscal consolidation process following the crisis,

80 See De Quinto et al. (2020).

81 See, for example, Hernández de Cos (2021b) and AIReF (2020a).

ensuring the greatest possible political and social consensus continues to be imperative to tackle this challenge.

A possible reform of the pension system should strengthen the link between contributions made and benefits received (while ensuring a level of sufficiency for more vulnerable households), increase the system's transparency and predictability, and bear in mind intergenerational fairness issues. In general, the redistributional effects of the pension system depend, among other factors, on the pension calculation formulae, and the existence of welfare benefits and floors and ceilings on contributions and benefits. Moreover, financing the pension system through intergenerational transfers or through taxation has very different and important implications in terms of inter- and intra-generational fairness. Against this backdrop, it would be desirable to strengthen the link between contributions made and benefits received, while ensuring in all cases a level of sufficiency for less well-off households. With regard to intergenerational fairness, it should be noted that making a large part of any adjustment to the pension system fall on the retired population could imply disproportionately reducing their levels of income and well-being, as this group made their saving and labour supply decisions on the basis of certain expectations of benefits and currently has a very limited capacity for adjustment. Likewise, making the whole weight of a possible reform of the system fall on future generations of workers, by significantly increasing intergenerational income transfers, would also have a considerable impact on these generations' income and well-being levels. In any case, it is crucial that any reform of the system should result in a greater degree of transparency and predictability. To this end, it could be advisable to consider the introduction of automatic adjustment mechanisms to adapt certain parameters of the system to changes in demographic and economic dynamics, in order to provide citizens with certainty and foster prudent decision-making regarding savings, work and retirement.

Inequality in Spanish society, which was already high, is expected to rise as a result of the pandemic. As mentioned in Section 2.1, the COVID-19 pandemic is having a markedly negative impact on certain particularly vulnerable groups of workers: those with temporary contracts and younger and low-income workers. In this respect, as some evidence is beginning to suggest, it seems likely that the current economic crisis will ultimately raise inequality in Spanish society, despite the measures deployed by the authorities to mitigate the adverse effects of the pandemic on household income and liquidity. These developments are particularly relevant for two reasons. First, because despite the period of vigorous and continuous growth enjoyed by the Spanish economy between 2014 and 2019, inequality levels in Spain before the onset of the health crisis were still above those recorded before the global financial crisis (see Chart 2.13.5). Second, because there is ample empirical evidence indicating that excessively high inequality levels may weigh not only on the degree of social cohesion, but also on economic growth capacity, through their adverse

effects on aggregate consumption, investment and the accumulation of human capital.[82]

The economic policy response to the challenges posed by high levels of inequality must include actions in multiple dimensions. Reducing inequality requires, among other things, addressing the structural shortcomings of the Spanish labour market which, as mentioned above, are responsible for very high unemployment and temporary employment rates, which are particularly detrimental to young people. It is also vital to increase the employability and productivity of the most vulnerable groups, for which raising their level of training is key. In this regard, it is important to ensure that the necessary conditions are in place to support equal opportunities and diminish the role that some household factors, such as household income, play in explaining the heterogeneity observed in academic performance.

A rigorous analysis of the efficiency of the different redistribution schemes in Spain needs to be conducted. This analysis should cover the different social transfer policies in force in various areas of general government – including those that take place through health and education – and the functioning of the Spanish tax system. The aim would be to assess whether, collectively, these instruments enable the degree of resource redistribution that society demands to be achieved and whether their implementation is sufficiently efficient.[83] To this end, it may be useful to compare the scope and progressivity of social transfers and the tax system in Spain with those in other European countries, although this comparison is not without certain difficulties. For example, each country has a wide range of social transfers, both monetary and in kind, making it very difficult to perform a uniform international comparison. Likewise, the design of the tax system involves many parameters – including ceilings and floors and tax relief – that can result in very significant differences between each country's official rates and the effective tax burden, both at the aggregate level and for different groups of taxpayers. Despite these difficulties, some studies using uniform data tools by country estimate that the degree of redistribution achieved by the Spanish public system is lower than the EU average.[84] It is advisable, therefore, to conduct a detailed and comprehensive analysis of this difference, studying the contribution of each of the different components of the Spanish welfare system, from both the transfer and the taxation side.

The approval of the minimum income scheme in May 2020 marked the introduction of a redistribution mechanism that could significantly help to alleviate extreme poverty in Spain.[85] In particular, according to estimates drawing on the INE's Living Conditions Survey, this instrument could reduce the rate of

82 See Grossman (1991), Persson and Tabellini (1994) and Alesina and Rodrick (1994).

83 See, for example, Ayala and Cantó (2020).

84 See Avram et al. (2014) and Fuest et al. (2010).

85 See Navas Román and Villazán Pellejero (2020).

extreme poverty in Spain from 5.7% to 1.5% of households.[86] In any event, it is important to ensure that the minimum income scheme (IMV by its Spanish abbreviation) meets this goal without distorting the labour-market participation decisions of its beneficiaries. Two points should be mentioned in this regard. First, the regulation establishing the IMV stipulated that the functioning of this instrument had to be regularly assessed by the AIReF. In principle, this would allow potential shortcomings in its implementation to be identified. Second, in the design of the IMV it was envisaged that this benefit would be compatible with employment for one year after the beneficiary had found work. However, as the way in which the benefit is to be adjusted has not yet been established by regulation, the effectiveness of this clause cannot be accurately assessed. Moreover, it could be appropriate to contemplate a possible extension of the IMV to some groups who, according to its initial design, are not eligible, but who would also be at risk of extreme poverty. This could affect, for example, certain low-income households who do not meet the IMV wealth requirement – mainly because they possess low-value real estate assets – and some households with more than two adults.[87]

Mitigating the adverse effects of inequality also requires promoting a stable increase in the supply of rental housing. Beyond income policies, it would also be desirable to take action to reduce the adverse effects of inequality in the area of housing affordability, which has tightened in recent years, in the case of both home ownership and renting.[88] Again, these dynamics appear to have had a greater negative impact on younger households. In this area, priority should be given to those public policies aimed at promoting a sustained increase in the supply of rental housing, especially housing for groups with the greatest affordability problems. Overall, these initiatives would help to avoid an excessive increase in rents. Specifically, a combination of tax incentives and regulatory improvements to increase legal certainty for landlords, and a greater public policy emphasis on the provision of public rental housing, could be considered.[89]

Moving towards a more sustainable growth model and mitigating the effects of climate change will require a profound economic, social and technological transformation, both in Spain and worldwide. In recent years, the European Union has played a leading role internationally to bolster the ecological transition of the economy and strive to honour the commitments made in the Paris Agreement. In keeping with this European position, Spain's draft Climate Change and Energy Transition Law, which is currently in the final stages of its passage through Parliament, sets ambitious goals for the coming decades in terms of reducing greenhouse gas

86 The extreme poverty rate is calculated as the percentage of households with total annual income per unit of consumption below 30% of the median.

87 According to the 2018 Spanish Survey of Household Finances, almost 190,000 households in Spain would be living in extreme poverty, as defined by the European Commission, but would not be eligible for the IMV.

88 See Directorate General Economics, Statistics and Research (2020) and López-Rodríguez y Matea (2019).

89 See López-Rodríguez and Matea (2020) and Mora-Sanguinetti (2012).

emissions, developing renewable energy sources and increasing energy efficiency.[90] To achieve these goals and help the Spanish economy adapt to the impact of climate change, both this draft law and the National Energy and Climate Plan (NECP), the 2050 Long-Term Decarbonisation Strategy and the National Plan for Adapting to Climate Change (PNACC by its Spanish abbreviation) lay down some of the main courses of action and tools that will need to be deployed in the coming years.[91] Although it is not yet possible to assess with sufficient accuracy the effects of each of these possible actions, it seems clear that, in order to achieve their objectives, they will have to drive a profound economic, social and technological transformation of Spain. In particular, it seems unlikely that the commitments undertaken can be honoured without very significant changes to patterns of behaviour and the current growth model. In this respect, by way of illustration, it should be noted that, although in 2020 both the Spanish and the global economy suffered an unprecedented contraction and the activity of some of the most polluting sectors, such as transport, declined very significantly, CO_2 emissions fell by barely 13.1% in Spain and 4% globally, essentially on a temporary basis.[92]

It is vital that the multiple implications of any economic policy initiative adopted in this regard be carefully assessed and that the highest possible degree of international coordination be pursued. Economic policy is the best instrument for all agents to internalise the environmental externality generated by their decisions and to promote the transition towards a more sustainable growth model. However, although in recent years significant progress has been made in analysing the many different economic implications of climate change and the ecological transition, broadly speaking, no consensus has yet been reached on the most appropriate combination of specific public policies – or their exact calibration – to achieve certain environmental goals in the most efficient way possible. Against this particularly uncertain backdrop, it is imperative that the implementation of any economic policy initiative be accompanied by a comprehensive analysis assessing, both ex ante and ex post, all its implications for economic activity. In this respect, the creation of the committee of experts on climate change and energy transition envisaged in the Spanish draft Law on Climate Change and Energy Transition should be viewed favourably. This committee will be responsible for assessing and making recommendations on energy and climate change policies and measures. Furthermore, as this is a global challenge, a high degree of international coordination would be

90 In particular, this draft legislation sets minimum targets, which may only be revised upwards in future updates of the regulation. These would entail, by 2030, a reduction in greenhouse gas emissions in the overall Spanish economy of 23% (compared with 1990), an increase in the share of renewable energies in final energy consumption and in electricity generation to at least 42% and 74%, respectively, and an energy efficiency improvement of 39.5% (compared with the target laid down in EU law), so that, by 2050 or in the shortest possible time, Spain achieves climate neutrality.

91 For example, in terms of mobility, it is established, inter alia, that initiatives will be adopted for all cars and light commercial vehicles to achieve zero direct CO2 emissions by 2050. In addition, all municipalities with a population of more than 50,000 and Spain's islands will have to adopt sustainable urban mobility plans by 2023 at the latest.

92 See Carbon Monitor.

desirable in the economic policy deployed to address climate change, for example in the areas of taxation or financial regulation. Thus, competitive distortions would be prevented and the risk of offshoring of activity would be minimised.

Economic policy must recognise that the impact of climate change and the transition towards a more sustainable economy will be asymmetric across sectors, firms, regions and households. Clearly, achieving the above-mentioned climate goals will require very different efforts for the various industries. It is also clear that adaptability to a new more sustainable growth model will be highly uneven among the various types of firms – for instance, depending on their size or innovation capacity – and households – for instance, depending on their level of income or education – especially in the short term. At the same time, the degree of exposure to climate change and the ecological transition is also asymmetric at the regional level, owing to significant differences between regions in terms of both their geographical characteristics and their productive system. In this setting, it is vital for economic policy to properly identify those groups that could be most affected, in relative terms, by these processes of structural change and to envisage effective measures to mitigate their vulnerability in the short term. In this regard, it is noteworthy that 82% of Spanish respondents in the European Investment Bank's 2020-2021 Climate Survey considered that, in order to succeed, any economic policy measures that may be rolled out in Spain to address climate change must take into account income gaps between population groups and social inequality.[93]

Fiscal policy is a key tool for combating climate change and fostering a more sustainable growth model. Among the various facets of economic policy, fiscal policy is, in principle, the one with the most appropriate instruments to promote the ecological transition of the economy. First, in the area of taxation, properly calibrating the different types of taxes and subsidies is the most efficient way to regulate both the direction and the pace of this structural change. Accordingly, environmental taxes – which currently have a lower revenue-raising capacity in Spain than in other European economies – must play a pre-eminent role in the coming years, both to discourage less environmentally sustainable activities and encourage green initiatives, with the revenue raised being used to offset the costs that the ecological transition may entail in the short term for some vulnerable groups. In addition, within fiscal policy, public investment also has the capacity to act as a powerful catalyst for developing new, more efficient and cleaner technologies.

The European NGEU programme should be another essential lever to accelerate the ecological transformation of the economy. As set out in Section 3.3, this programme could ultimately mobilise a very substantial volume of funds both for the European Union as a whole and for Spain, and should contribute to the recovery in the short term. Above all, however, from a medium and long-term

93 See 2020-2021 EIB Climate Survey.

standpoint, it should contribute to the structural transformation of the European economies, especially in the digital and environmental arenas. In this respect, the approach of the NGEU programme seems to be very much aligned with the views of the European and Spanish citizens who participated in the 2020-2021 EIB Climate Survey, of whom 57% and 64%, respectively, considered that, in the context of the current health crisis, the priority of national governments should be to reorient the economy so that the economic recovery clearly takes into account environmental needs.

In keeping with the design of the NGEU programme at the European level, in the coming years the Spanish government expects to use a very significant proportion (around 40%) of the funds under this mechanism to bolster the ecological transition in Spain. In fact, this is one of the four cross-cutting priorities – together with digital transformation, gender equality and social and territorial cohesion – around which the Spanish Government's Recovery, Transformation and Resilience Plan is structured. In step with the courses of action set out in the NECP, the different projects defined in this Plan include, for instance, large-scale deployment of renewable energy generation, a fair energy transition strategy, plans for investment in green infrastructure, a housing rehabilitation plan focused on energy efficiency, and a sustainable mobility emergency action plan. Most of these possible measures have not yet been defined with sufficient detail to allow an accurate assessment of their potential favourable effects on activity in the short and long term. However, as indicated by several recent papers, under certain circumstances, the multiplier effect on economic activity of investments in clean energy and biodiversity preservation could be significantly higher and more persistent than that of other less sustainable investments from an environmental standpoint.[94]

The financial sector also has a key role to play in the transition towards a more sustainable economy. Undertaking this profound structural transformation of the economy will require mobilising a very significant volume of funds, in both the public and the private sector. To enable these funds to be channelled as smoothly and efficiently as possible, it is essential that all financial market players – including banks, the different types of institutional investors and financial supervisors and regulators – incorporate into their analytical decision-making frameworks all risks related to climate change and to the economy's environmental transition process, and have the proper information, institutional framework and financial instruments to put their decisions into practice. It will also be crucial to determine the extent to which the transition towards a more sustainable economy may affect central banks' ability to fulfil their mandates and, where appropriate, how this should be reflected in the design, calibration and implementation of their different economic policy instruments.[95]

94 See, for example, Batini et al. (2021).

95 See, for example, Dikau and Volz (2021).

3.2 Budgetary consolidation strategy

The much-needed expansionary fiscal policy stance during the current crisis should give way, once the recovery takes hold, to a restructuring of public finances that enables the rebuilding of fiscal space for future crises. As mentioned in Chapter 1 of this Report, the extraordinary severity of the economic crisis brought about by the COVID-19 pandemic called for a very decisive economic policy response, particularly in terms of fiscal policy, to mitigate the considerable adverse effects in the short term and prevent this essentially temporary shock from causing persistent damage to economic growth capacity in the medium term. However, the crisis has entailed a sharp deterioration in Spain's public finances, which, prior to the pandemic, still bore the scars of the global financial crisis and European sovereign debt crisis of the past decade. The high level of public debt with which the Spanish economy will emerge from the pandemic may generate various macro-financial risks and reduce the available fiscal space in the event of new adverse shocks in the future. Therefore, once the crisis is over, an ambitious plan to correct the budgetary imbalances will be needed to substantially reduce the general government deficit and debt.

Correcting the structural imbalance of public finances will require a firm commitment and a sustained effort over time. According to Banco de España estimates, in 2020 the structural deficit of Spanish public finances would have increased by approximately 1.5 pp to around 4.5% of GDP, taking it back to the levels observed in 2012.[96] Reducing this high structural deficit, which has proved extraordinarily persistent in recent years, is an enormous challenge that can only be tackled gradually and under a multi-year fiscal consolidation programme. For example, if, once the current economic crisis is over, a plan for the restructuring of public finances were implemented involving a reduction in the structural deficit of 0.5 pp of GDP per year (the pace set by the currently suspended European fiscal rules[97]) until budgetary equilibrium is reached, it would take the Spanish economy just over a decade to return to its pre-pandemic levels of public debt, under a series of plausible scenarios (see Chart 2.14).

It would be desirable for the main details of the fiscal consolidation process to be defined and made public early to reinforce its credibility. The rest of this subsection details the most relevant aspects that should be envisaged in or along with this budgetary rebalancing plan.[98] In particular, it would be advisable for the

96 It should be highlighted that these estimates are subject to much uncertainty, given that, for the time being, the effect of the current crisis on the potential output of the economy can only be measured extremely inaccurately.

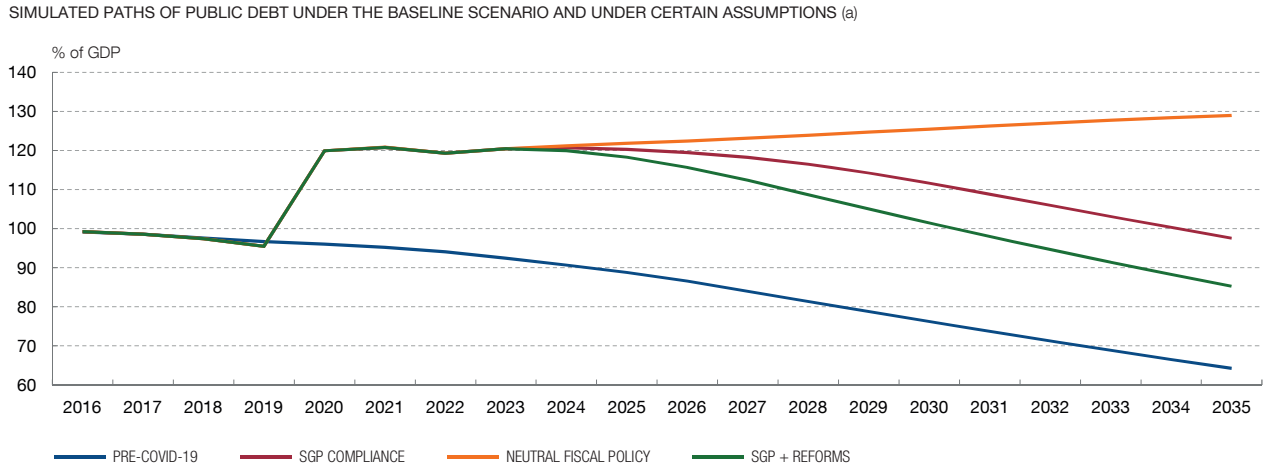
97 Also, the debt rule requires that the debt-to-GDP ratio be reduced annually at a rate of one-twentieth of the differential against the reference level of 60%. Since the Spanish public debt ratio reached 120% of GDP in 2020, this differential would amount to 60 pp. Hence, under this European rule, the debt ratio would have to be reduced by some 3 pp per year, on average.

98 See Banco de España (2020), Hernández de Cos (2020) and Hernández de Cos (2021a).

Chart 2.14

SIMULATED PATHS OF PUBLIC DEBT UNDER THE BASELINE SCENARIO AND UNDER CERTAIN ASSUMPTIONS (a)

Once the current economic crisis is over, were a fiscal consolidation plan to be implemented involving a reduction of 0.5 pp of GDP per year in the structural deficit until budgetary equilibrium is achieved, it would take the Spanish economy, under a series of plausible assumptions, just over a decade to return to its pre-pandemic public debt levels. This process of rebalancing the public finances would quicken were the fiscal consolidation plan to be accompanied by the implementation of a raft of structural reforms that increase the economy's growth potential.



SOURCE: Banco de España, drawing on INE and IGAE data.

a See "Macroeconomic projections for the Spanish economy (2021-2023)", Box 1, "Quarterly report on the Spanish economy", *Economic Bulletin,* 1/2021, Banco de España, adjusted for the impact of Sareb in 2020.

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main details of the plan to be defined and made public early on, even if the start of its implementation is delayed until the economic recovery under way has taken hold. The budget targets to be achieved and their deadlines should be established without delay, along with the main measures needed to attain them and the instruments envisaged to correct potential deviations. All of this would help reinforce the credibility of Spain's economic policies and would boost the expansionary effects of the current fiscal policy actions.

The effectiveness and credibility of the budgetary rebalancing plan would also be enhanced if it were accompanied by the implementation of an ambitious structural reform package and involved all tiers of general government. To mitigate the possible adverse effects that the fiscal consolidation programme could have on the economy's growth trajectory, it would be desirable for this programme to be accompanied by the implementation of a broad package of structural reforms, such as those described in the previous section and in Section 3.3. These reforms would not only raise economic growth potential, but would also accelerate the rebalancing of public finances by increasing the size of the main tax bases (see Chart 2.14). Moreover, given the high degree of decentralisation of Spanish general government (where territorial – regional and local – governments are responsible for more than 40% of government expenditure), it is imperative that

any credible budgetary consolidation strategy involve all tiers of government with fiscal powers.

The decision on how to distribute the fiscal adjustment among the different budget items should be based on a comprehensive review of all public expenditure and revenue items and a rigorous analysis of the implications of any fiscal policy action in terms of economic efficiency and fairness. The way in which the fiscal adjustment that Spain will need to implement in the coming years is to be distributed among the different income and expenditure items should be decided in the political realm. It is there that the preferences of the whole of Spanish society regarding the structure of public finances in general and, in particular, the balance that fiscal policy must strike between economic efficiency and fairness, can be properly weighed up. In any event, deciding on the specific breakdown of this adjustment in public finances requires all budget items to be thoroughly reviewed beforehand to rigorously assess to what extent the objectives proposed for each of them are being met, identify deficiencies or areas for improvement in relation to the quality of public finances (for which purpose it might be appropriate to use international best practice as reference) and analyse in depth the different implications of any fiscal intervention in terms of both economic growth and redistribution.

On the expenditure side, priorities need to be set in the use of public resources and efficiency increased. As mentioned above, in the coming years some expenditure items, such as those related to health, long-term care, pensions and public investment in human and technological capital, will require larger budget allocations. In this setting, the necessary rebalancing of public finances in the medium term will require being very selective when committing to any permanent increase in spending, identifying which expenditure policies are a priority, assessing their effectiveness in meeting their goals and analysing whether there is room for improvement to increase expenditure efficiency. In this respect, studies by the AIReF in recent years have shown that it is possible to improve efficiency in some major spending items, such as pharmaceutical expenditure, subsidies and active labour market policies. It would be desirable for these recommendations to be taken into account in the comprehensive review of public finances.[99]

On the revenue side, it would be advisable to undertake a comprehensive review of the Spanish tax system to ensure that tax revenue is sufficient to finance the desired level of spending. The adjustments required by the Spanish tax system to increase its revenue-raising capacity, whether through changes to several existing taxes or the introduction of new ones, need to be undertaken as part of a comprehensive reform of the tax system. Only thus is it possible to maximise the efficiency of tax collection and minimise the distortions that this generates in economic activity. In this respect, the Ministry of Finance recently

99 See the various papers that comprise the AIReF's Spending Review.

created a committee of experts to carry out an in-depth analysis of the Spanish tax system.

Ahead of a possible reform of the tax system, the reasons for Spain's lower tax take compared with other European countries need to be analysed. According to Eurostat data, in 2019 tax revenue in Spain totalled 34.8% of GDP, 2 pp less than the simple average of the euro area countries. The bulk of this lower revenue (1.8 pp) was due to Spain's smaller indirect tax burden. Particularly notable within this group of taxes was the lower VAT revenue, which stood 1 pp below the arithmetic mean for the euro area countries. As for direct taxes, corporate income tax receipts were also lower in Spain than in the euro area (0.9 pp less), while personal income tax revenue and social security contributions were higher than the euro area average. It is also essential to analyse the importance of tax fraud in these differences and to study its causes and the measures aimed at mitigating its adverse effects on tax revenue and the requisite tax fairness.

A detailed review of the many forms of tax relief provided for in the Spanish tax system will also be essential. As the AIReF recently pointed out,[100] there is plenty of room for improvement in this area. In particular, this tax relief is not only a very significant drain on government receipts – on average in the period 2016-2019 it accounted for annual tax expenditure of around 5% of GDP – but, in some cases, it is not even properly fulfilling the objectives for which it was designed. In this respect, the AIReF recommends, among other measures, reviewing the reduced VAT rates, reformulating tax reductions for residential rental income and revisiting the reduced rates of excise duties on diesel fuel.

In some specific areas, taxation in Spain needs to seek strong international coordination.[101] It would be desirable for the design and calibration of the new, recently introduced taxes on financial transactions and digital services[102] in Spain to be established in a coordinated manner internationally, to maximise their revenue-raising capacity and prevent competitive distortions or the relocation of tax bases.[103] This international coordination effort is desirable in all cases in the area of capital and corporate income taxation where, in the absence of such coordination, significant tax base relocation problems may occur. It will also be particularly necessary in the area of environmental taxation. As analysed in the previous section, in the future this fiscal policy instrument will play a key role to bolster the transition of the economy towards a more sustainable growth model. It would be advisable to avoid significant asymmetries in its use at the international level that could hinder this process.

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100 See AIReF (2020b).

101 Notable in this connection is the OECD BEPS project. See OECD (2013).

102 See Law 5/2020 of 15 October 2020 on the Tax on Financial Transactions and Law 4/2020 of 15 October 2020 on the Tax on Certain Digital Services.

103 See in this respect European Council (2021).

3.3 The challenge of making the best possible use of the NGEU programme

3.3.1 The characteristics of Spain's programme

In order to receive funds from the Recovery and Resilience Facility (RRF), the central plank of the NGEU programme, each Member State is required to submit an investment and reform plan to be implemented before 2026. The NGEU programme, with an envelope of €750 billion, is the temporary instrument launched by the European Union to boost the recovery of the Member States after the pandemic. As explained in Box 2.3, this instrument will temporarily help to make up for the lack of a common automatic fiscal stabilisation capacity and will contribute to reducing the relative scarcity of euro-denominated safe assets. The European Commission (EC) will assess the content and implementation of the national plans every six months. This assessment will take into account, among other factors, the alignment of plans with the Union's common priorities and their contribution to compliance with the EC's country-specific recommendations over the previous two years.

The Recovery, Transformation and Resilience Plan (RTRP), approved on 27 April, groups together the NGEU lines of action in Spain into ten major areas called "levers". The RTRP envisages NGEU-funded public investment, in the period 2021-2026, of up to €140 billion, the sum of the total funds that the programme makes available to Spain through its grant and loan components. Under the Commission's conditions, grants will be mobilised in the first half of this six-year period. Of the ten levers, the bulk of the RRF funds will be earmarked for green investment and digitalisation (39% and 29% of the total, respectively, proportions that exceed the minimum levels stipulated at European level in both cases) (see Chart 2.15). Notable among the planned projects are those known as "Strategic Projects for Economic Recovery and Transformation", which are intended to foster strategic actions with significant potential to impact the rest of the economy, requiring private initiative to be supplemented by the collaboration of government and research centres.

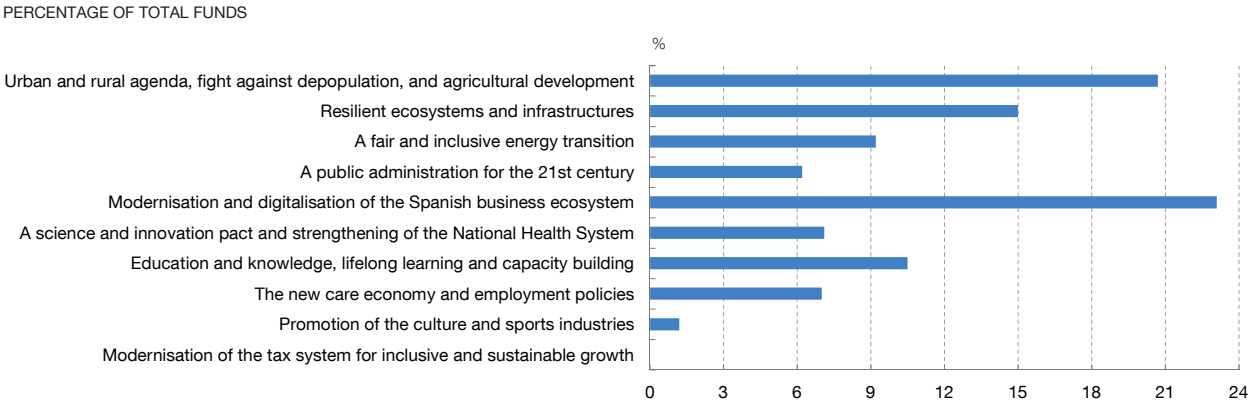
The 2021 State budget included €26,634 million of investments charged to European funds. Of this total, €24,198 million correspond to the RRF and €2,436 million will be used, within the framework of Recovery Assistance for Cohesion and the Territories of Europe (REACT-EU), for health spending, specifically for the acquisition of vaccines, the strengthening of primary care and the renewal of medical technologies.[104] Considering the RRF and REACT-EU together, the budget items that will receive the largest proportions of the total funds are industry and energy (21.1%), R&D&I and digitalisation (17.8%), resilient ecosystems and infrastructure (17.6%) and health (11.1%). Finally, as regards the authorities responsible for spending, it should be noted that part of the funds will be transferred to the regional and local governments, which will administer them indirectly (€7,070 million and €1,233 million, respectively).

104 Ministerio de Hacienda (available in Spanish only) (2020).

Chart 2.15

NGEU LINES OF ACTION IN SPAIN, BY MAJOR AREA

Among the ten levers, the bulk of the RRF funds will be earmarked for green investment and digitalisation (39% and 29% of the total, respectively). These proportions exceed the minimum levels stipulated at European level (especially the latter).



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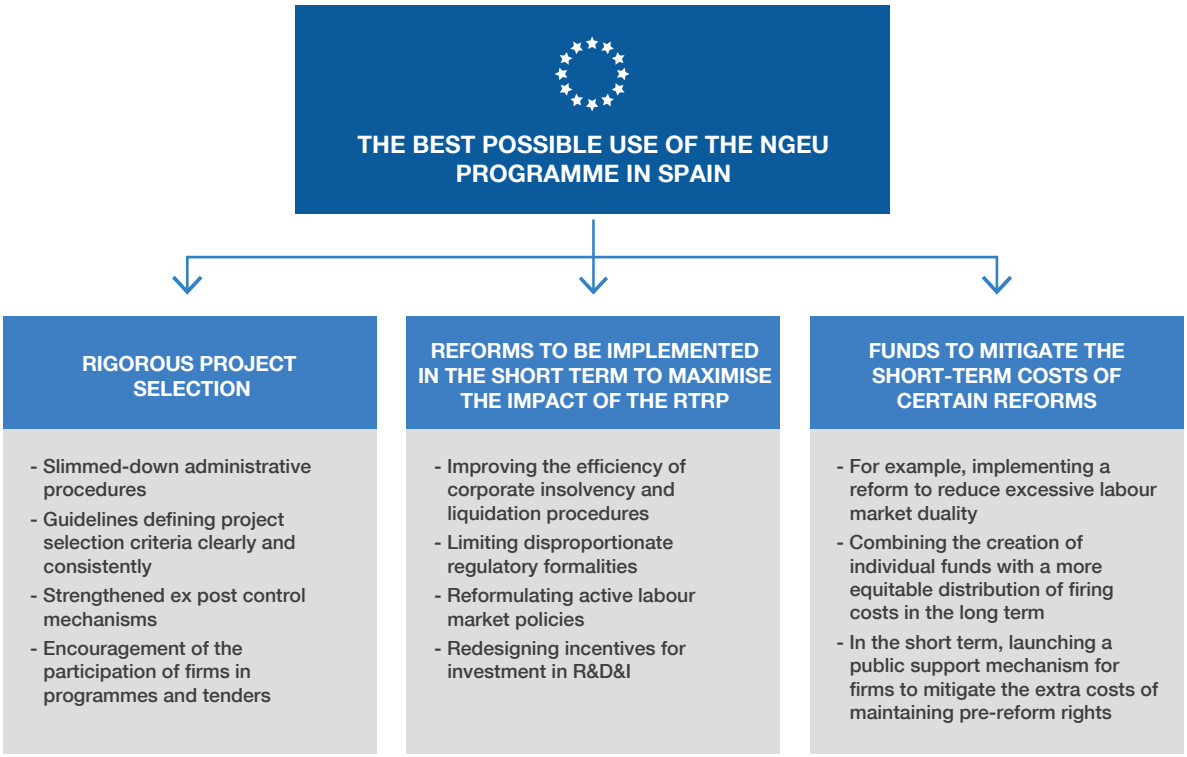
SOURCE: Government of Spain.

The RTRP outlines the structural reforms to be undertaken in the coming years, including notably, given their importance, labour market, pension system and tax system reforms. In the labour market, the main objective is to reduce duality, although promoting employment stability and modernising active policies, vocational training and the national employment system are also specified as objectives. In relation to the pension system, the RTRP includes the main recommendations made by the Toledo Pact Committee last October and certain measures whose impact is difficult to assess, given the lack of details. With respect to the design of the tax system, the RTRP includes setting up a committee of experts to submit proposals for a comprehensive reform which, ideally, should not be constrained by certain short-term tax measures posed in the RTRP. As regards the environment, the RTRP incorporates Climate Change Law reforms, the Green Strategy and the regulatory framework for the energy sector. Finally, other significant actions relate to the new housing policy, modernisation of the judicial system and reform and digitalisation of public administration.

3.3.2. Certain conditions that need to be met for the favourable effects of the RTRP spending programmes to be maximised

First, to fully harness the potential of the NGEU spending programmes to transform the Spanish economy, the investment and reform projects need to be rigorously selected. The NGEU has great potential to boost the dynamism of the Spanish economy, but full realisation of this potential depends crucially on certain conditions being met (see Figure 2.4). A pre-condition for boosting the effects

Figure 2.4
THE BEST POSSIBLE USE OF THE NGEU PROGRAMME IN SPAIN



SOURCE: Banco de España.

of the spending programmes is that the projects carried out are carefully selected. Admittedly, rapid design and early execution of the projects would help to bring forward the recovery after the crisis. However, it may be appropriate to allow some time for the various initiatives to be defined and selected as precisely and rigorously as possible so that their permanent positive effects on employment and activity can be maximised. An analysis of the impact on activity of regional spending funded by the European Regional Development Fund (ERDF) between 2000 and 2018 confirms that it may be desirable to postpone some spending if the extra time is used to select more productive projects.[105]

The role of private initiative is crucial for the investment side of the RTRP. Non-financial firms must be involved in drawing up projects and mobilising their own capabilities in terms of financial and human resources, which may require the launch of training programmes for their employees. Also, the financial system must play an important role in financing private investment.

Maximising the transformative capacity of the NGEU requires that the RTRP structural reforms be implemented at the same time as the spending

105 See Albrizio and Geli (2021) and Forte-Campos and Rojas (2021), both forthcoming.

programmes. Recent studies suggest that if reforms reducing the rigidity of labour and product markets are carried out simultaneously, the medium-term spending multipliers would increase significantly. This is because a more efficient regulatory framework would facilitate the inter-firm reallocation of capital and employment required for execution of the projects.[106]

The range of possible reforms that would boost the impact of spending programmes is relatively broad. First, the project selection requires an appropriate framework for public procurement procedures and suitably designed methodologies to assess the various initiatives, as well as appropriately trained staff to apply them. Second, in order for the RTRP to promote the economy's adaptation to the structural changes under way, public policies should support the necessary resource reallocation. This in turn requires action in various areas, including: establishing an institutional environment conducive to the orderly exit of firms from the market and the entry of new competitors and that eliminates the fetters on the expansion of existing competitors; reformulating active labour market policies (ALMPs) to allow workers to move freely from industries whose weight in the economy is falling to those whose weight is growing; and redesigning the incentives for investment in R&D&I. Third, the NGEU funds may be used to pay the costs caused to some agents in the short term by certain reforms that enhance collective well-being. The rest of this subsection expands upon the possible actions in these areas directly focused on maximising the capacity of NGEU-funded spending programmes to raise potential output.

Possible improvements to the design of public tenders

A suitable design for this public-resource-allocation tool could include slimmed-down administrative procedures and the specification of homogeneous project selection criteria inspired by best international practice. With the explicit aim of increasing the speed with which projects financed with European funds are launched, on 31 December 2020 a package of urgent measures was approved to modernise government and implement the RTRP (RDL 36/2020). These measures are designed to simplify administrative processes and increase the speed of execution of RTRP projects. This is desirable in the case of Spain, one of the European economies in which public tendering takes the longest (see Chart 2.16.1). In any event, if the full benefits of more flexible formal requirements are to be obtained, tendering processes need to be kept as rigorous as possible.[107] In this respect, it is crucial to ensure a level playing field for all participants in public tenders, an aspect on which Spain traditionally scores somewhat below the European average

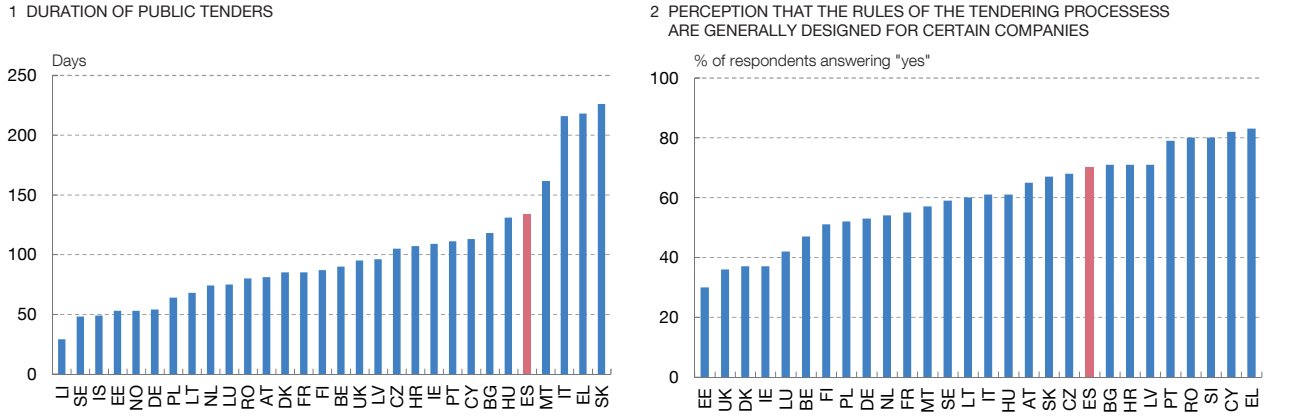
106 See Albrizio and Geli (2021), forthcoming.

107 See Bosio et al. (2020).

Chart 2.16

POSSIBLE IMPROVEMENTS TO THE DESIGN OF PUBLIC TENDERS

A suitable design for this public-resource-allocation tool could include the following three ingredients: slimmed-down administrative procedures, the specification of consistent project selection criteria inspired by best international practice, and strengthened ex post control mechanisms.



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SOURCE: European Commission (Single Market Scoreboard and Eurobarometer).

(see Chart 2.16.2).[108] One means of improvement, which could be particularly important in a context in which a large number of public authorities are responsible for administering tenders, could be the compilation of State guidelines on the criteria and weights that should be used to assess the merits of bids.[109]

Also, it seems appropriate to supplement this design with strengthened ex post control mechanisms to closely monitor the performance of contracts. To supplement the audit role performed by the National Audit Office (IGAE) and the Spanish and European Court of Auditors, a public space with homogeneous, transparent data could be established. This space would contain information on the Strategic Projects for Economic Recovery and Transformation, public tenders, agreements and RTRP-related government subsidies. The example of the Public Tender Register may be a good starting point, although there is room for improvement, since it is not currently comprehensive and the information provided has certain limitations to be able to rigorously analyse fund allocation. In this respect, it would be worth systematically compiling up-to-date information, with a standard set of data for every project, including the object of the funding, the selection criteria, data on the firms receiving funding, as well as on their competitors.

108 Flash Eurobarometer (2019).

109 Some of the prescriptions would be difficult to apply in practice, insofar as they could be interpreted as favouring some bidders over others. However, the economic literature offers some guidance on the design of these common guidelines. For example, in the case of two solvent firms with similar productivity levels, it may be preferable to finance the investment project of the firm that has greater difficulty accessing external financing, since according to some recent studies this would generate a larger multiplier (see Di Giovanni et al. (2021), forthcoming).

In order to foster competition, tender information should be widely disseminated to promote, in particular, access to tenders by SMEs. The launch of a highly ambitious process like the NGEU is extremely complex. For many firms, in particular, smaller firms, it may be very costly to locate all the information swiftly. Nor is it easy for government to ensure that all the information is readily accessible. To date, various ministries have launched calls for expressions of provisional interest by firms in presenting projects that may be eligible for NGEU funding. In this respect, a single portal, as proposed in RDL 36/2020, would be a useful tool to facilitate access to information and avoid excessive dispersion of sources.

Against this background, it would also be useful to explore further ways of increasing access to tenders. It is likely that some investment projects will require co-financing, which seems appropriate, as this entails private firms being jointly responsible for the execution of projects and allows all their capabilities to be harnessed. However, the possibility that requiring a high minimum percentage of co-financing may reduce tender competition merits special analysis. This consideration is particularly important in a setting in which the increase in debt as a result of the pandemic may discourage the participation of some firms, given the possible difficulty of accessing additional financing. Lastly, tender participation may be boosted if the terms of the tender are formulated as precisely as possible, in order to dispel any uncertainty regarding the specific requirements.

Encouraging adaptation of the business sector to structural changes

The pandemic may increase the number of non-viable firms, whose continued presence in the market for a lengthy period may hamper the reallocation of credit to businesses with better prospects. The activity of non-viable firms (defined as those whose going concern value is less than their liquidation value) may be artificially prolonged by successive rollovers of their credit financing, which would be inefficient from the aggregate standpoint. In the economic literature (where these firms are known as "zombie firms") there is extensive evidence that this phenomenon discourages the entry of new companies with viable business projects, as well as the growth of existing ones. Accordingly, the efficient allocation of productive resources is obstructed, leading to productivity losses and lower investment and job creation.[110]

More efficient insolvency procedures would help to reduce the number of non-viable firms in a rapid and orderly fashion. The orderly liquidation of such firms, allowing credit and productive resources to be reallocated to profitable investment projects, would maximise the favourable effects of the NGEU programme. Hence the importance of improving the efficiency of insolvency procedures to facilitate the departure from the market of non-viable firms.[111]

110 See Caballero et al. (2008), McGowan et al. (2018), Acharya et al. (2019) and Acharya et al. (2020).

111 See Andrews and Petroulakis (2019) and McGowan et al. (2017).

In Spain, there is room to improve insolvency procedures. Areas of improvement include the relief of congestion in the commercial courts, the elimination of public debt discharge and shortening the duration of insolvent debtors' repayment plans. During the global financial crisis, the Insolvency Law was reformed on a number of occasions in Spain.[112] However, the use of insolvency proceedings and pre-insolvency arrangements has remained limited, which is evidence of their lack of attraction for most firms (see Box 3.3 in Chapter 3 of this Report). The use of these procedures is particularly infrequent among microfirms and sole proprietors, which make up the bulk of Spain's productive system. This is mainly attributable to two factors: first the slowness of insolvency proceedings, caused, at least partly, by congestion in the commercial courts; and second the difficulty that individuals have obtaining substantial debt discharge in these proceedings, largely because public debts (tax and social security debts) cannot be discharged and usually make up a significant proportion of the total liabilities of microfirms and sole proprietors.[113] Also, to obtain partial discharge of other unpaid debts, the debtor must comply with a repayment plan, the duration of which (five years) may be excessive. That said, this problem will be resolved when the EU Insolvency Directive, which reduces the repayment plan to a maximum of three years, is transposed into Spanish law.[114]

The regulatory formalities required to pursue a business activity in Spain are numerous. According to the INE's Module on the Business Environment, economic regulation is, out of a list of 12 factors, the third one that, according to firms, most affected their ability to grow in 2019. The first two factors were the demand for their products and the macroeconomic environment, while economic regulation was ahead of tax, labour market efficiency and defaults. Also, Spain's position in various international regulatory burden rankings is very unfavourable. For example, in terms of the competitiveness indicator in the Global Competitiveness Report, Spain is ranked 114 out of 141 countries.[115] This largely reflects the growing number of regulations at State and regional level and their high degree of complexity according to various indicators used in the literature. [116]

The Law on Market Unity, which seeks to enhance the regulation of numerous goods and services markets, has so far had relatively limited effects. A recent Constitutional Court judgment declared null and void the principle of effectiveness throughout national territory of regional administrative actions. Despite this, the law has continued to provide a framework that broadly favours appropriate administrative regulation. To do this it uses the principles of necessity and proportionality (in relation to the definition of an imperative reason of general interest) and a guarantee against excessive regulation. However, the mechanisms provided to file complaints

112 For a description of these reforms, see García-Posada and Vegas (2018).

113 See García-Posada (2020).

114 See Directive (EU) 2019/1023 of the European Parliament and of the Council, 20 June 2019.

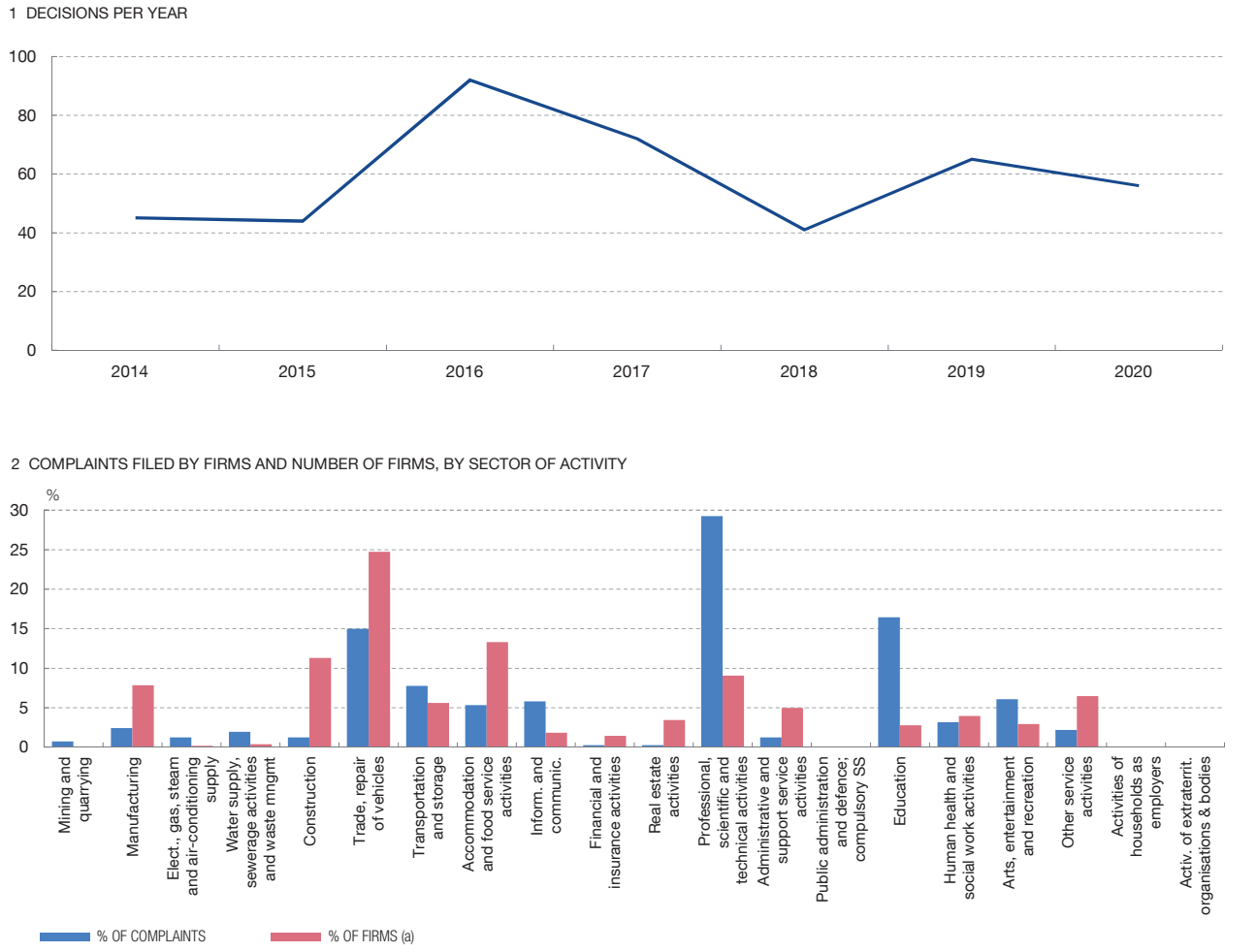
115 World Economic Forum (2019).

116 See De Lucio and Mora-Sanguinetti (2021).

Chart 2.17

THE LAW ON MARKET UNITY, WHICH SEEKS TO ENHANCE THE REGULATION OF NUMEROUS MARKETS, HAS SO FAR HAD LIMITED EFFECTS

The mechanisms provided to file complaints in respect of the principles of necessity and proportionality, to protect economic operators, have barely been used to date. It would be useful to reinforce the action of the sectoral committees by creating independent consultative bodies with expertise in the area and to reflect the agreements in the legislation using the harmonisation law mechanism.



SOURCES: Ministerio de Asuntos Económicos y Transformación Digital and INE (DIRCE).

a All active firms with at least 1 worker as at 1 January 2020.

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in respect of these principles, to protect economic operators, have barely been used to date.[117] In particular, in seven years 418 decisions have been adopted (see Chart 2.17.1), concentrated in certain professional, educational and trade activities (see Chart 2.17.2).

Cooperation between different levels of government can be coordinated within the so-called sectoral committees. These structures, set up for the purpose of ensuring cooperation and exchange of information between central

117 See Ministerio de Asuntos Económicos y Transformación Digital (available in Spanish only), resolved cases.

government and regional governments in various specific spheres of action, may be the appropriate vehicle for the consensus-based adoption of good practices. For these purposes, it would be useful to strengthen the action of the sectoral committees, creating independent consultative bodies with expertise in the area in question to help identify these best practices and build consensus. Subsequently, these agreements could be reflected in legislation, for which purpose the harmonisation law mechanism envisaged in Article 150(3) of the Constitution, which requires the approval of both houses of parliament, could be used.

The reformulation of active labour market policies

The effectiveness of ALMPs depends largely on their design and the composition of the resources used. ALMPs should play an important role in the response to possible mismatches between labour supply and demand caused by the pandemic and the resulting structural changes. In this respect, it is important to remember that the composition of spending on ALMPs varies significantly across countries. Some, such as Germany and France, prioritise training for the unemployed and strengthening the role of public employment services to match job offerors and jobseekers, while others, such as Spain, place the emphasis on incentives for hiring and self-employment. In Spain, these incentives mostly take the form of deductions from social security contributions, the effectiveness of which, according to the available evidence, is limited, because the subsidy is passed through to wages with barely any effect on employment.[118] This was confirmed to be the case by the AIReF Spending Review.[119]

One way of improving the effectiveness of ALMPs is to differentiate between categories of workers. The basis for this differentiation is the combination, in differing degrees, of the three ingredients mentioned above: subsidies for new hires, help with job searches and training for the unemployed. Some studies have shown that the only population groups for which hiring incentives are effective are young people and persons with wages close to the legal minimum.[120] However, in the case of workers with limited training, schemes to assist jobseekers usually have greater positive effects. At the same time, training schemes appear to be particularly beneficial for the long-term unemployed.[121] Finally, for the population close to retirement age, the experience of other European countries suggests that partial retirement schemes, combined with on-the-job training, help to prolong employment, even beyond the statutory retirement age.[122] Using data processing techniques, it

118 See, for example, Gruber (1997), Anderson and Meyer (2000), Cruces et al. (2010) or Korkeamäki and Uusitalo (2009).

119 AIReF (available in Spanish only) (2019).

120 See Saez et al. (2019) and Kramarz and Philippon (2001).

121 These two latter points are referred to in Card et al. (2018).

122 See Picchio and Van Ours (2013).

would be possible to go a step further: statistical profiles could be defined to enable individualised assistance and training to be given to each unemployed person.

There are certain barriers to the supply of non-formal training which need to be reviewed. Among the complaints filed under the Law on Market Unity, mentioned in the previous section, those relating to excessive requirements for job training centres to be able to pursue their activity are notable, in particular the obligations to register in the relevant regional register or to open offices in the territory in question. These requirements may amount to barriers to the development of online training, which are undesirable in the current circumstances, since this form of delivery lends itself well to meeting possible increases in the demand for this type of training and better accommodates the timing flexibility demanded by trainees.

The design of R&D&I policies

The design of policies that encourage investment in R&D&I is a very important factor to improve well-being in the medium and long run. As explained in Section 2.2, sustained increases in output per capita are normally underpinned by improvements in economies' productivity levels. Also, following the pandemic, it is conceivable that the increase in the weight of activities with high technological content in the economy that was already under way will intensify. These arguments justify the importance attached by the RTRP to actions aiming to boost investment in R&D&I, for which 18% of all NGEU funds are earmarked.

The effectiveness of the diverse instruments to support R&D&I spending varies. The tools to encourage R&D&I investment include tax incentives, direct grants and public guarantees for the financing received by firms. This diversity means that decisions should be based on a rigorous analysis of the various options. In this respect, the AIReF Spending Review provides a good starting point.[123]

Especially useful in this area is the study of the best international practices and of the viability of transferring them to the institutional mechanisms and, in particular, the tax system in Spain. Among the OECD countries, the design of these policies varies notably (see Chart 2.18.1), although one very widespread feature is that, over the last decade, there has been a trend for the share of direct grants to agents performing innovative activity to fall, in favour of tax incentives. These changes have been accompanied by adjustments to tax incentives to improve their effectiveness.[124]

The design of tax incentives for R&D&I should avoid disproportionately favouring large consolidated firms with high profits. These incentives usually

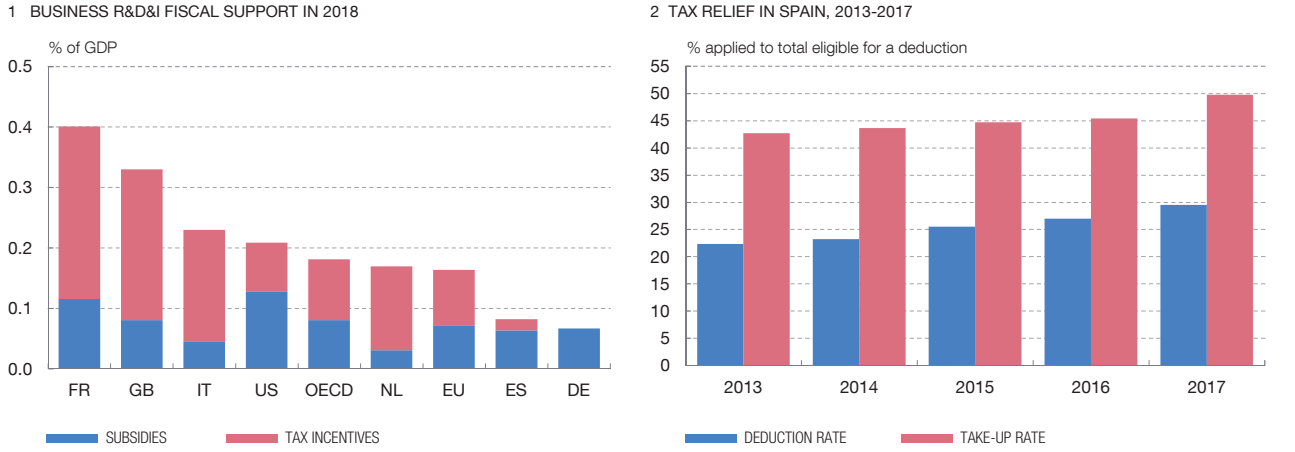
123 See AIReF (available in Spanish only) (2020c).

124 See OECD (2020).

Chart 2.18

IMPROVEMENTS TO THE DESIGN OF POLICIES THAT ENCOURAGE INVESTMENT IN R&D&I

Some features of R&D&I tax incentives in Spain could be improved. With the help of venture capital firms, direct grants should be channelled to the most efficient basic and applied research projects carried out by start-ups and young firms that have difficulty accessing external financing.



SOURCES: OECD, R&D Tax Incentive Database, Agencia Tributaria, and Almunia and López-Rodríguez (2021).

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take the form of reductions in the tax base or deductions from the amount of corporate income tax payable, so that only firms with a positive tax liability and/or tax base can benefit from them. Small newly created innovative firms frequently do not fulfil this condition and therefore have no access to the incentives, although their need may be greater, as such firms usually have difficulty accessing external financing. Moreover, it is normally firms of this kind that have innovative projects which, although riskier, give rise to more radical changes, with the potential to generate a larger social return. In contrast, the innovation of larger, more established firms tends to be incremental in nature.[125]

Some of the features of R&D&I tax incentives in Spain could be improved. In the case of corporate income tax, the current design of these incentives partly suffers from the problem just described: for firms with no tax liability, the subsidies are only partially applicable. Moreover, the administrative requirements that must be met to access these incentives, as currently configured, are stringent. Lastly, certain types of R&D&I spending are not eligible for this type of incentives. Specifically, according to the INE's Innovation in Companies Survey, only one third of Spanish firms' spending under these headings would be eligible (see Chart 2.18.2).[126]

The returns on direct grants are greater when they are used either for basic research projects or for applied research projects carried out by start-ups

125 See Akcigit et al. (2019).

126 See Almunia and Lopez-Rodriguez (2021).

and young firms that have difficulty accessing external financing. The literature shows the high returns on direct public support, in the form of grants, for basic research activities to acquire new scientific knowledge, without any intention of finding an immediate commercial application.[127] This means that, in the absence of public support, the amount of this type of research activity would be less than desirable. At the same time, the available evidence shows that the impact of direct subsidies for innovative applied research projects, which do seek to market their results in the short term, is greater when the recipient firms are newly created and small, and also financially constrained owing to the risk profile of their projects.[128]

To decide which projects are worth supporting, governments may take advantage of the particular skills of certain private agents. The main problem facing the authorities when designing a direct grant scheme for innovative activities is defining the selection criteria, given the limited information available on the business projects that make up the whole set of possible beneficiaries. International experience shows that venture capital companies may be in a better position to efficiently allocate funds to innovative firms in their initial stages. In recognition of this, venture capital companies already receive favourable tax treatment in Spain, and also public funding from the ICO.[129] However, it would be worth exploring the possibility of exploiting this channel to a greater extent, given the externalities generated by innovative projects financed by venture capital companies.

The use of the NGEU to finance structural reforms

NGEU funds may be used to facilitate the approval of structural reforms that entail costs for certain agents in the short term. The chances of gaining approval for certain legislative changes, when the benefits only become tangible after some time, may be increased if the groups that lose out temporarily are compensated.

The setting up of a capitalisation fund for each employee to finance part of their severance pay in the event of dismissal is an example of a reform that is desirable for the economy as a whole, but costly for certain agents in the short run. The sizeable difference in Spain between the costs of terminating permanent and temporary employment contracts – which are much higher in the first case, and more so the longer the job tenure – means that job losses fall disproportionately on temporary workers. To mitigate this problem of excessive duality in the degree of protection of different workers, according to their type of contract, the 2010 labour reform proposed setting up an individual capitalisation fund to be endowed with an amount equivalent to a certain number of days' wages

127 See Akcigit et al. (2019).

128 See Howell (2017), González et al. (2005) and Bronzini and Lachini (2014).

129 See OECD (2015), Akcigit and Stantcheva (2020) and OECD (2021).

for each year of service. This amount would be deducted from the severance pay that employers are required to pay in the event of dismissal.[130] Workers would recover the amount accumulated in the fund not only in the event of dismissal, but also when moving to a new job in another geographical area, to pay for training or else upon retirement. Furthermore, if workers were to move to another firm in the same geographical area, they would take the balance of the fund with them. Notable among the merits of this scheme are a better alignment between firms' dismissal decisions and the individual productivity of each employee, since it reduces the differences in the amount of compensation paid by the firm at the time of dismissal according to the worker's type of contract or job tenure.[131]

The NGEU programme funds could be used to mitigate some of the extra costs for firms during the transition to the new scheme, given that the compensation rights in current contracts would remain valid. If the new scheme is financed out of firms' social security contributions, companies would have extra costs during the initial years of the scheme, since they would have to pay, simultaneously, the new contributions and the severance pay accumulated prior to the introduction of this mechanism. By way of example, Box 2.4 suggests a formula for these transition costs, whereby the aggregate amount received by the whole population of workers in the long term does not change with respect to the current system. To this end, it is envisaged that, during the initial years following the introduction of the new scheme, the different levels of government could subsidise a declining proportion of the transition costs. The use of part of the NGEU funds would allow the mechanism to be endowed with the necessary resources for its initial launch. Moreover, this use would be in line with the conditions laid down in the Commission Regulation, which states that to be eligible for NGEU funds, reforms must help to boost growth or improve economic or environmental sustainability. This Regulation refers specifically to pension system and labour market reforms as examples of reforms eligible for NGEU funds.[132]

130 Eleventh additional provision of RDL 35/2010.

131 As explained in Box 2.4, firms may be more willing to hire new workers if they know beforehand that, in a crisis situation, dismissals would not entail such a large expense, at a time of particular economic or financial difficulty, since the payments would already have been made. From the workers' standpoint, given that they do not lose their accumulated rights when they leave the firm to take up a new job or for training, the current disincentives to labour mobility are eliminated.

132 See European Commission (2020b).

REFERENCES

Abramitzky, R. and V. Lavy (2014). "How Responsive is Investment in Schooling to Changes in Redistributive Policies and in Returns?", *Econometrica,* Vol. 82(4), pp. 1241-1272.

Acemoglu D. and P. Restrepo (2018). "The Race between Man and Machine: Implications of Technology for Growth, Factor Shares, and Employment", *American Economic Review,* Vol. 108, No 6, pp. 1488–1542.

Acharya, V., M. Crosignani, T. Eisert and C. Eufinger (2020). "Zombie Credit and (Dis)Inflation: Evidence from Europe", *Working Paper* No 27158, NBER.

Acharya, V., T. Eisert, C. Eufinger and C. Hirsch (2019). "Whatever It Takes: The Real Effects of Unconventional Monetary Policy", *The Review of Financial Studies,* Vol. 32, pp. 3366-3411, Oxford Academic.

AIReF (2020a). "Update of demographic and pension expenditure forecasts", *Technical Document 1/20.*

AIReF (2020b). *Evaluación del gasto público 2019. Estudio beneficios fiscales*.

AIReF (2020c). "Beneficio fiscal: deducción por I+D+I en el impuesto de sociedades", *Spending Review Phase II. Tax benefits.*

AIReF (2019). *Tercer estudio del Spending Review: Programa de políticas activas de empleo*. Press release, November.

Akcigit, U. and S. Stantcheva (2020). "Taxation and Innovation: What Do We Know?", *NBER Innovation and Public Policy,* edited by A. Goolsbee and B. Jones. University of Chicago Press.

Akcigit, U., D. Hanley and N. Serrano-Velarde (2019). "Back to Basics: Basic Research Spillovers, Innovation Policy and Growth", *Review of Economic Studies,* Vol. 88, No 1, pp. 1-43.

Akcigit, U., D. Hanley and S. Stantcheva (2019). "Optimal Taxation and R&D Policies", *Working Paper* No 22908, NBER.

Albert, C., A. Caggese and B. González (2020). "The short-and long-run employment impact of COVID-19 through the effects of real and financial shocks on new firms", *Working Paper* No 2039, Banco de España.

Albrizio, S., A. Buesa, M. Roth and F. Viani (2021). "The real effects of trade uncertainty", *Working Paper,* Banco de España, forthcoming.

Albrizio, S. and J. F. Geli (2021). "Scaling up NGEU: institutions matter (a lot)", *Working Paper,* Banco de España, forthcoming.

Alesina, A. and D. Rodrik (1994). "Distributive Politics and Economic Growth", *Quarterly Journal of Economics,* Vol. 109 (2), pp. 465-490.

Almunia, M. and D. Lopez-Rodriguez (2021). *The effectiveness of fiscal incentives for business R&D in Spain,* mimeo.

Andersen, A. L., E. T. Hansen, N. Johannesen and A. Sheridan (2020). "Consumer Responses to the COVID-19 Crisis: Evidence from Bank Account Transaction Data", *Covid Economics,* 7, pp. 88-114.

Anderson, P. and B. Meyer (2000). "The effects of the unemployment insurance payroll tax on wages, employment, claims and denials", *Journal of Public Economics,* Vol. 78, pp. 81-106.

Andrews, D. and F. Petroulakis (2019). "Breaking the shackles: Zombie firms, weak banks and depressed restructuring in Europe", *Working Paper Series* No 2240, ECB.

Anghel, B. and A. Lacuesta (2021). "The Potential of Working from Home". COVID-19, *Working from Home and the Future of Cities.* IEB Report 1/2021.

Anghel, B., M. Cozzolino and A. Lacuesta (2020). "Teleworking in Spain", Analytical Articles, *Economic Bulletin* 2/2020, Banco de España.

Anghel, B. and A. Lacuesta (2020). "Ageing, productivity and employment status", Analytical Articles, *Economic Bulletin* 1/2020, Banco de España.

Anghel, B., H. Basso, O. Bover, J. M. Casado, L. Hospido, M. Izquierdo, I. Kataryniuk, A. Lacuesta, J. M. Montero and E. Vozmediano (2018). "Income, consumption and wealth inequality in Spain", *SERIEs* 9, pp. 351-387.

Anzoategui D., D. Comín, M. Gertler and J. Martínez (2019). "Endogenous Technology Adoption and R&D as Sources of Business Cycle Persistence", *American Economic Journal of Macroeconomics,* Vol. 11, No 3, pp. 67-110.

Aparicio-Fenoll, A. (2016). "Returns to Education and Educational Outcomes: The Case of the Spanish Housing Boom", *Journal of Human Capital,* 10 (2), pp. 235-265.

Arellano, M., S. Bonhomme, M. de Vera, L. Hospido and S. Wei (2021). "Income risk inequality: evidence from Spanish administrative records", mimeo.

Avendano, M., A. R. Aro and J. Mackenbach (2005). "Socio-economic disparities in physical health in 10 European countries", in A. Börsch-Supan, A. Brugiavini, H. Jürges, S. Avram, H. Levy and H. Sutherland (2014). "Income redistribution in the European Union", *IZA Journal of European Labor Studies,* 3 (22).

Avram, S., H. Levy and H. Sutherland (2014). "Income redistribution in the European Union", *IZA Journal of European Labor Studies,* 3 (22).

Ayala, L and O. Cantó (2020). *The redistributive effects of social benefits and taxes: a review of the current situation*, Social Observatory "la Caixa", Fundación "La Caixa".

Baker, M. (2013). "Industrial actions in schools: strikes and student achievement", *Canadian Journal of Economics,* Vol. 46, Issue 3, pp. 1014-1036, August.

Baker, S. R., R. A. Farrokhnia, S. Meyer, M. Pagel and C. Yannelis (2020). "How Does Household Spending Respond to an Epidemic? Consumption during the 2020 COVID-19 Pandemic", *Working Paper* No 26949, NBER.

Banco de España (2020). "The global development of the COVID-19 crisis", Chapter 2, *Annual Report* 2019.

Banco de España (2019a). "Economic consequences of demographic change", Chapter 4, *Annual Report 2018.*

Banco de España (2019b). "Wage and total income inequality in the economic recovery", Box 1.4, *Annual Report 2018.*

Banco de España (2016). Annual Report 2015.

Banco de España (2015). "Growth and reallocation of resources in the Spanish economy", Chapter 3, *Annual Report 2014.*

Banks, J., H. Karjalainen and C. Propper (2020). "Recessions and Health: The Long-Term Health Consequences of Responses to the Coronavirus", *IFS Briefing Note* BN281, Institute for Fiscal Studies.

Barrero, J. M., N. Bloom and S. Davis (2021). "Why Working From Home Will Stick", *Working Paper* 2020-174, Becker Friedman Institute.

Barro, R., J. Ursúa and J. Weng (2020). "The Coronavirus and the Great Influenza Pandemic: Lessons from the 'Spanish Flu' for the Coronavirus's Potential Effects on Mortality and Economic Activity", *Working Paper* No 26866, NBER, Cambridge, Massachusetts.

Batini, N., M. di Serio, M. Fragetta, G. Melina and A. Waldron (2021). "Building Back Better: How Big Are Green Spending Multipliers?", *Working Paper* No 2021/087, IMF.

Benedetti Fasil, C., P. Sedláček and V. Sterk (2020). "EU start-up calculator: impact of COVID-19 on aggregate employment", *JRC Technical Report,* European Commission.

Bessen, J. (2020). "Automation and jobs: when technology boosts employment", *Economic Policy,* Vol. 34, Issue 100, pp. 589–626.

Blanas, S., G. Gancia and S. Y. T. Lee (2020). "Who is afraid of machines?" *Economic Policy,* Vol. 34, Issue 100, pp. 627–690.

Blanchard O. and L. Summers (1986). "Hysteresis and the European Unemployment Problem", *NBER Macroeconomics Annual,* Vol. 1. pp. 15-90.

Blanco, R., S. Mayordomo, A. Menéndez and M. Mulino (2020). "The impact of the COVID-19 crisis on the financial position of non-financial corporations in 2020: CBSO-based evidence", Analytical Articles, *Economic Bulletin* 4/2020, Banco de España.

Blinder, A. and J. Rudd (2013). "The Supply-Shock Explanation of the Great Stagflation Revisited", in *The Great Inflation: The Rebirth of Modern Central Banking,* pp. 119-175, NBER, Inc., University of Chicago Press, Cambridge, Massachusetts, June.

Bloom, N., P. Bunn, P. Mizen, P. Smietanka and G. Thwaites, G. (2021). *The impact of Covid-19 on productivity*, VoxEU.

Bodnár, K., J. Le Roux, P. López-García and B. Szörfi (2020). "The impact of COVID-19 on potential output in the euro area", *Economic Bulletin,* Issue 7/20, ECB.

Bonhomme, S. and L. Hospido (2016). "The Cycle of Earnings Inequality: Evidence from Spanish Social Security Data", *The Economic Journal,* 127 (603), pp. 1244–1278.

Börsch-Supan, A. (2020a). *Survey of Health, Ageing and Retirement in Europe (SHARE) Wave 6*, Release version: 7.1.0. SHARE-ERIC. Data set. DOI: 10.6103/SHARE.w6.710.

Börsch-Supan, A. (2020b). *Survey of Health, Ageing and Retirement in Europe (SHARE) Wave 8. COVID-19 Survey 1*, Release version: 0.0.1. beta. SHARE-ERIC. Data set. DOI: 10.6103/SHARE.w8cabeta.001.

Bosio, E., S. Djankov, E. Glaeser and A. Shleifer (2020). "Public Procurement in Law and Practice", *Working Paper* No 27188, NBER.

Bounie, D., Y. Camara and J. W. Galbraith (2020). *The COVID-19 containment seen through French consumer transaction data: Expenditures, mobility and online substitution*, VoxEU *CEPR Policy Portal,* May.

Bover, O., N. Fabra, S. García-Uribe, A. Lacuesta and R. Ramos (2020). "Firms and households during the pandemic: what do we learn from their electricity consumption?", *Occasional Paper* No 2031, Banco de España.

Bronzini, R. and E. Iachini (2014). "Are Incentives for R&D Effective? Evidence from a Regression Discontinuity Approach", *American Economic Journal: Economic Policy,* Vol. 6, No 4, pp. 100–134.

Caballero, R., T. Hoshi and A. Kashyap (2008). "Zombie Lending and Depressed Restructuring in Japan", *American Economic Review,* Vol. 98, No 5, pp. 1943-1977.

Card, D., J. Kluve, and A. Weber (2018). "What works? A Meta Analysis of Recent Active Labor Market Program Evaluations", *Journal of the European Economic Association,* Vol. 16, pp. 894-931.

Carvalho, V., J. R. García, S. Hansen, A. Ortiz, T. Rodrigo, J. V. Rodríguez Mora and P. Ruiz (2020). *Tracking the COVID-19 crisis through the lens of 1.4 billion transactions*, VoxEU CEPR Policy Portal, April.

Caselli, M., A. Fracasso and S. Traverso (2020). "Mitigation of risks of Covid-19 contagion and robotisation: Evidence from Italy", in *Covid Economics,* CEPR Press, Issue 17, pp. 174-188.

Cavallo, A. (2020). "Inflation with Covid Consumption Baskets", *Working Paper* No 27352, NBER.

Cerra, V., A. Fatás and S. Saxena S. (2020). "Hysteresis and Business Cycles", *Working Paper* No 20/73, IMF.

Chernoff, A. and C. Warman (2020). "*COVID-19 and implications for automation*", *Working Paper* No 27249, NBER.

Chetty, R., J. N. Friedman, N. Hendren and M. Stepner (2020). "The Economic Impacts of COVID-19: Evidence from a New Public Database Built Using Private Sector Data", *Working Paper* No 27431, NBER.

Comisión Nacional de los Mercados y la Competencia (CNMC) (2019). *Sobre electricidad y gas del primer semestre de 2019*. Press release, November.

Cruces, G., S. Galiani and S. Kidyba (2010). "Payroll taxes, wages and employment: Identification through policy changes", *Labour Economics,* Vol. 17, pp. 743-749.

Cuadrado, P., E. Moral-Benito and I. Solera (2020). "A sectoral anatomy of the Spanish productivity puzzle", *Occasional Paper* No 2006, Banco de España.

De Lucio, J. and J. S. Mora-Sanguinetti (2021). "New dimensions of regulatory complexity and their economic cost. An analysis using text mining", *Working Paper* No 2107, Banco de España.

De Quinto, A., L. Hospido and C. Sanz (2020). "The child penalty in Spain", *Occasional Paper* No 2017, Banco de España.

Dejuán, D. and J. S. Mora-Sanguinetti (2019). "Quality of enforcement and investment decisions. Firm-level evidence from Spain", *Working Paper* No 1927, Banco de España.

Deschryver, P. and F. de Mariz (2020). "What Future for the Green Bond Market? How can Policymakers, Companies, and Investors Unlock the Potential of the Green Bond Market?", *Journal of Risk and Financial Management,* Vol. 13(3).

Di Giovanni, J., M. García-Santana, P. Jeenas, E. Moral-Benito and J. Pijoan-Mas (2021). "Government Procurement and Credit Growth: Firm-Level Evidence and Macro Consequences", mimeo.

Di Mauro, F. and C. Syverson (2020). "The COVID Crisis and Productivity Growth", *White Paper,* Becker Friedman Institute, University of Chicago.

Dijkstra, L., H. Poelman and A. Rodríguez-Pose (2020). "The geography of EU discontent", *Regional Studies,* Vol. 54, Issue 6, pp. 737-753.

Dikau, S. and U. Volz (2021). "Central bank mandates, sustainability objectives and the promotion of green finance", *Ecological Economics,* Vol. 184.

Dingel, I. J. and B. Neiman (2020). "How many jobs can be done at home?", *Journal of Public Economics,* Vol. 189.

Directorate General Economics, Statistics and Research (2020). "The housing market in Spain: 2014-2019", *Occasional Paper* No 2013, Banco de España.

European Commission (2020a). Development of tools and mechanisms for the integration of environmental, social and governance (ESG) factors into the EU banking prudential framework and into banks' business strategies and investment policies, Interim Study, December.

European Commission (2020b). "Recovery and resilience plans", Guidance to Member States, Commission Staff Working Document, SWD(2020) 205 final.

European Council (2021). *Regulation of the European Parliament establishing the Recovery and Resilience Facility*, February.

Fabra, N., D. Rapson, M. Reguant and J. Wang (2021). *Estimating the Elasticity to Real Time Pricing: Evidence from the Spanish Electricity Market*, American Economic Association Papers and Proceedings.

Fatás, A. and L. H. Summers (2017), "The permanent effects of fiscal consolidations", *Journal of International Economics,* Vol. 112, pp. 238-250.

Fergusson, D. M. and L. J. Woodward (2002). "Mental Health, Educational, and Social Role Outcomes of Adolescents with Depression", *Arch Gen Psychiatry,* 59 (3), pp. 225-31.

Fernández-Cerezo, A., B. González, M. Izquierdo and E. Moral-Benito (2021). "The economic impact of COVID-19 on Spanish firms according to the Banco de España Business Activity Survey (EBAE)", Analytical Articles, *Economic Bulletin* 1/2021, Banco de España.

Flash Eurobarometer (2019). *Businesses' attitudes towards corruption in the EU*, Flash Eurobarometer 482, December.

Forte-Campos, V. and J. Rojas (2021). "La evolución histórica de los fondos estructurales y de inversión europeos", Analytical Articles, *Economic Bulletin,* Banco de España, forthcoming.

Fuest, C., J. Niehues and A. Peichl (2010). "The Redistributive Effects of Tax Benefit Systems in the Enlarged EU", *Public Finance Review,* 38 (4), pp. 473-500.

García, C., C. Martín-Machuca and F. Viani (2020). "International trade in medical products during the COVID-19 pandemic", Box 4, "Quarterly Report on the Spanish Economy", *Economic Bulletin* 4/2020, Banco de España.

García-Posada, M. (2020). "Analysis of insolvency proceedings in Spain against the backdrop of the COVID-19 crisis: insolvency proceedings, pre-insolvency arrangements and the insolvency moratorium", *Occasional Paper* No 2029, Banco de España.

García-Posada, M. and R. Vegas (2018). "Bankruptcy reforms in the midst of the Great Recession: the Spanish experience", *International Review of Law & Economics,* Vol. 55, pp. 71–95.

Ghirelli, C., M. Gil, S. Hurtado and A. Urtasun (2021). "Relación entre las medidas de contención de la pandemia, la movilidad y la actividad económica", *Occasional Paper,* Banco de España, forthcoming.

Goldmanis, M., A. Hortaçsu, C. Syverson and O. Emre (2010). "E-commerce and the market structure of retail industries", *The Economic Journal,* Vol. 120 No 545, pp. 651-682.

González, X., J. Jaumandreu and C. Pazó (2005). "Barriers to Innovation and Subsidy Effectiveness", *The RAND Journal of Economics,* Vol. 36, No 4, pp. 930-950.

Goodman, J. (2014). "Flaking Out: Student Absences and Snow Days as Disruptions of Instructional Time", *Working Paper* No 20221, NBER.

Goolsbee, A. and C. Syverson (2021). "Fear, lockdown, and diversion: comparing drivers of pandemic economic decline 2020", *Journal of Public Economics,* Vol. 193, 104311.

Gortázar, L. (2020). "Lo bueno, lo ausente y lo malo de la nueva Ley de Educación", *EsadeEcPol Insight* #23.

Grossman, H. (1991). "A General Equilibrium Model of Insurrections", *The American Economic Review,* Vol. 81, No 4, pp. 912-921.

Gruber, J. (1997). "The Incidence of Payroll Taxation: Evidence from Chile", *Journal of Labor Economics,* Vol. 15, pp. 72-101.

Gupta, S., T. D. Nguyen, F. Lozano, S. Raman, B. Lee, A. Bento, K. I. Simon and C. Wing (2020). "Tracking Public and Private Responses to the COVID-19 Epidemic: Evidence from State and Local Government Actions", *Working Paper* No 27027, NBER.

Hernández de Cos, P. (2021a). "Draft State Budget for 2021 Testimony before the Parliamentary Budget Committee, 4 November 2020", *Occasional Paper* No 2104, Banco de España.

Hernández de Cos, P. (2021b). "The Spanish pension system: An update in the wake of the pandemic. Banco de España contribution to the Committee on the Monitoring and Assessment of the Toledo Pact Agreements. 2 September 2020", *Occasional Paper* No 2106, Banco de España.

Hernández de Cos, P. (2021c). "The Role of Central Banks and Banking Supervisors in Climate Action", Opening remarks, *Resilience of the financial system to natural disasters, IESE* online conference.

Hernández de Cos, P. (2020). "The main post-pandemic challenges for the Spanish economy. Appearance before the Parliamentary Committee for the Economic and Social Reconstruction of Spain after COVID-19/Congress of Deputies. 23 June 2020", *Occasional Paper* No 2024, Banco de España.

Howell, S. (2017). "Financing Innovation: Evidence from R&D Grants", *American Economic Review* 2017, Vol. 107(4), pp. 1136-1164.

Istituto Superiore di Sanità (2020). *Characteristics of COVID-19 patients dying in Italy. Report based on available data on March 26th, 2020*. COVID-19 Surveillance Group.

Izquierdo M. (2021a). "Banco de España Business Activity Survey (EBAE)", Box 6, "Quarterly Report on the Spanish Economy", *Economic Bulletin* 1/2021, Banco de España.

Izquierdo M. (2021b). "Business births and deaths since the onset of the pandemic", Box 7, "Quarterly Report on the Spanish Economy", *Economic Bulletin* 1/2021, Banco de España.

Jaimovich, N. and H. E. Siu (2020). "Job Polarization and Jobless Recoveries", *The Review of Economics and Statistics*, Vol. 102, Issue 1, pp.129-147.

Janke, K., K. Lee, C. Propper, K. Shields and M. Shields (2020). "Macroeconomic Conditions and Health in Britain: Aggregation, Dynamics and Local Area Heterogeneity", *Discussion Paper* DP14507, CEPR.

Jordà, Ò, S. R. Singh and A. M. Taylor (2020). "Longer-Run Economic Consequences of Pandemics", *Working Papers* No 2020-09, Economic Research, Federal Reserve Bank of San Francisco.

Kivimäki, M., G. D. Batty, I. Kawachi and A. Steptoe (eds.) (2018). *The Routledge International Handbook of Psychosocial Epidemiology*. Routledge.

Korkeamäki, O. and R. Uusitalo (2009). "Employment and wage effects of a payroll-tax cut: evidence from a regional experiment", *International Tax and Public Finance* 16, pp. 753-772.

Kramarz, F. and T. Philippon (2001). "The impact of differential payroll tax subsidies on minimum wage employment", *Journal of Public Economics*, Vol. 82, pp. 115-146.

L'Hotellerie-Fallois Armas, P., M. Manrique and A. Millaruelo (2021). "Open Strategic Autonomy in the EU", Box 5, "Quarterly Report on the Spanish Economy", *Economic Bulletin* 1/2021, Banco de España.

Lacuesta, A., S. Puente and E. Villanueva (2020). "The schooling response to a sustained increase in low-skill wages: evidence from Spain 1989-2009", *SERIEs*, 11, pp. 457-499.

Lacuesta, A., P. Roldán and D. Serrano-Puente (2020). "Effects of e-commerce on prices and business competition", Analytical Articles, *Economic Bulletin* 4/2020, Banco de España.

Lahelma, E., P. Martikainen, O. Rahkonen and K. Silventoinen (1999). "Gender differences in illhealth in Finland: patterns, magnitude and change", *Social Science and Medicine*, 48 (1), pp. 7-19.

Layard, R. (2013). "Mental health: the new frontier for labour economics". *IZA Journal of Labor Policy*, Vol. 2, No. 2, pp. 1-16.

Leung, T., A. Chan, E. Chan, V. Chan, C. Chui, B. Cowling, L. Gao, M. Ge, I. Hung, M. Ip, P. Ip, K. Lau, C. Lau, L. Lau, W. Leung, X. Li, H. Luo, K. Man, V. Ng, C. Siu, E. Wan, Y. Wing, C. Wong, K. Wong and I. Wong (2020). "Short- and potential long-term adverse health outcomes of COVID-19: a rapid review". *Emerging Microbes & Infections*, Vol. 9, Issue 1, pp. 2190–2199.

López-Rodríguez, D. and M. Ll. Matea (2020). "Public intervention in the rental housing market: a review of international experience", *Occasional Paper* No 2002, Banco de España.

López-Rodríguez, D. and M. Ll. Matea (2019). "Recent developments in the rental housing market in Spain", Analytical Articles, *Economic Bulletin* 3/2019, Banco de España.

Ma, C., J. Gu, P. Hou, L. Zhang, Y. Bai, Z. Guo, H. Wu, B. Zhang, P. Li and X. Zhao (2020). "Incidence, clinical characteristics and prognostic factor of patients with COVID-19: a systematic review and meta-analysis". *MedRxiv* preprint article, March.

Mackenbach, J., M. Avendano, K. Andersen-Ranberg and A. R. Aro (2005). "Physical health" in A. Börsch-Supan, A. Brugiavini, H. Jürges, J. Mackenbach, J. Siegrist and G. Weber (eds.) Health, Ageing and Retirement in Europe. First Results from the Survey of Health, Ageing and Retirement in Europe. Mannheim Research Institute for the Economics of Aging (MEA). Chapter 3.1, pp. 82-88.

Maldonado, J. E. and K. de Witte (2020). "The effect of school closures on standardised student test outcomes", *Discussion Paper Series*, DPS20.17. KU Leuven.

Martín-Fuentes, N. and I. Moder (2020). "The scarring effects of past crises on the global economy", *Economic Bulletin*, Issue 8/2020, ECB.

Martinez-Bravo, M. and C. Sanz (2021). "Encuesta sobre los efectos económicos y políticos de la COVID-19 en España", mimeo.

Martínez-Miera, D. and R. Vegas (2021). "Impact of the dividend distribution restriction on the flow of credit to non-financial corporations in Spain", Analytical Articles, *Economic Bulletin* 1/2021, Banco de España.

McEachin, A. and A. Atteberry (2017). "The Impact of Summer Learning Loss on Measures of School Performance," *Education Finance and Policy*, Vol. 12(4), pp. 468-491.

McGowan, M. A., D. Andrews and V. Millot (2018). "The walking dead? Zombie firms and productivity performance in OECD countries", *Economic Policy*, Vol. 33, Issue 96, pp. 687-736.

McGowan, M. A., D. Andrews and V. Millot (2017). "Insolvency regimes, zombie firms and capital reallocation", *Working Papers* No 1399, OECD Economics Department.

Ministerio de Hacienda (2020). *Presentación del proyecto de Presupuestos Generales del Estado 2021*.

Mora-Sanguinetti, J. S. and R. Pérez-Valls (2020). "¿Cómo afecta la complejidad de la regulación a la demografía empresarial? Evidencia para España", *Working Paper* No 2002, Banco de España.

Mora-Sanguinetti, J. S. (2012). "Is judicial inefficacy increasing the weight of the house property market in Spain? Evidence at the local level", *Journal of the Spanish Economic Association*, *SERIEs* 3, 339–365.

Mueller, H., P. Ouimet, and E. Simintzi (2017). "Within-firm pay inequality", *The Review of Financial Studies*, Vol. 30, Issue 10, pp. 3605-3635.

Navas, M. and N. Villazán (2020). *EUROMOD Country Report Spain (ES) 2017-2020*, mimeo.

Observatorio Educaedu (2020). "Cómo afecta el COVID-19 a la decisión de formarse", Newsletter No 2.

OECD (2021). *OECD Economic Surveys: Spain 2021*, OECD Publishing, forthcoming.

OECD (2020). "The effects of R&D tax incentives and their role in the innovation policy mix: Findings from the OECD microBeRD project, 2016-19", *OECD Science, Technology and Industry Policy Papers*, No 92.

OECD (2019). *The Future of Work. OECD Employment Outlook 2019*, OECD Publishing.

OECD (2015). *New Approaches to SME and Entrepreneurship Financing. Broadening the Range of Instruments*, OECD Publishing.

OCDE (2013). *Action Plan on Base Erosion and Profit Shifting*, OECD Publishing.

Panchal, N., R. Kamal, C. Cox and R. Garfield (2021). "The Implications of COVID-19 for Mental Health and Substance Use". *Issue Brief*, Tracking Poll, February, Kaiser Foundation Health.

Peng. L., C. D. Meyerhoefer and S. H. Zuvekas (2013). "The Effect of Depression on Labor Market Outcomes", *Working Paper* No 19451, NBER.

Persson, T. and G. Tabellini (1994). "Is Inequality Harmful for Growth?", *The American Economic Review*, Vol. 84, No 3, pp. 600-621.

Picchio, M. and J. C. van Ours (2013). "Retaining through training even for older workers", *Economics of Education Review,* Vol. 32, pp. 29-48.

Pischke, J. S. (2007). "The Impact of Length of the School Year on Student Performance and Earnings: Evidence From the German Short School Years", *The Economic Journal*, Vol. 117, Issue 523, pp. 1216-1242. October.

Riom, C. and A. Valero (2020). "Innovation in the time of Covid-19", *CentrePiece The Magazine for Economic Performance*, No 590, Centre for Economic Performance, LSE.

Rodríguez-González, C. G., E. Chamorro-de-Vega, M. Valerio, M. A. Amor-García, F. Tejerina, M. Sancho-González, A. Narrillos-Moraza, A. Giménez-Manzorro, S. Manrique-Rodríguez, M. Machado, M. Olmedo, V. Escudero-Vilaplana, C. Villanueva-Bueno, B. Torroba-Sanz, A. Melgarejo-Ortuño, J. Vicente-Valor, A. Herranz, E. Bouza, P. Muñoz and M. Sanjurjo (2021). "COVID-19 in hospitalised patients in Spain: a cohort study in Madrid", *International Journal of Antimicrobial Agents*, Vol. 57, Issue 2, 106249.

Saez, E., B. Schoefer and D. Seim (2019). "Payroll Taxes, Firm Behavior, and Rent Sharing: Evidence from a Young Workers' Tax Cut in Sweden", *American Economic Review,* Vol. 109, No 5, pp. 1717-1763.

Sanz, I., M. Cuerdo and L. Doncel (2021). *El efecto del coronavirus en el aprendizaje de los alumnos: efecto en el uso de recursos digitales educativos*, Funcas.

Seiler, P. (2021). "Weighting bias and inflation in the time of Covid-19: Evidence from Swiss transaction data", VoxEU CEPR Policy Portal, July.

Shankar, A., A. McMunn, J. Banks and A. Steptoe (2011). "Loneliness, social isolation, and behavioral and biological health indicators in older adults". *Health Psychology*, Vol. 30(4), pp. 377-385.

Steptoe, A., A. Shankar, P. Demakakos and J. Wardle (2013). "Social isolation, loneliness, and all-cause mortality in older men and women", *PNAS*, April, Vol. 110 (15), pp. 5797-5801.

Task Force on Climate-related Financial Disclosures (2020). 2020 Status Report. October.

Welch, F. (1999). "In defense of Inequality", *The American Economic Review*, Vol. 89, No 2, Papers and Proceedings of the 111th Annual Meeting of the American Economic Association (May), pp. 1-17.

World Economic Forum (2019): *The Global Competitiveness Report*, Prof. Klaus Schwab, World Economic Forum (ed.).

World Health Organization (2020). *Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19)*.

Box 2.1

DEVELOPMENTS IN THE REAL ESTATE MARKET SINCE THE START OF THE PANDEMIC

Prior to the COVID-19 crisis, the Spanish real estate market was losing momentum, both in terms of transaction numbers and prices, albeit at differing speeds in the residential and commercial segments. This box describes the key changes observed in prices and transaction volumes in both market segments since the start of the pandemic.[1]

In the residential real estate market, housing sales fell abruptly in 2020 Q2, hit by the stringent restrictions on mobility and economic activity in that period, which made it extremely difficult to complete sales (see Chart 1). Since then, the number of transactions has gradually picked up, but it has still not returned to the pre-crisis level. This is partly due to the uncertainty surrounding the course of the pandemic and its impact on the economic outlook for agents in the housing market. In particular, total transactions in 2020 overall were 18% below the 2019 figure.

To date, house prices have been more resilient than transaction numbers. Prices were already slowing before the pandemic and have continued to lose momentum, but with no widespread year-on-year declines (see Chart 2). Notably, both in terms of transaction numbers and prices, new housing has shown greater resilience than second-hand housing. This partly reflects purchase commitments made prior to the pandemic, and possibly also a greater supply shortage of new housing.

In any event, the impact of the pandemic on the residential housing market is highly uneven across the regions. In particular, the Mediterranean coast and the Balearic and Canary Islands post the largest loss of impetus. These are important tourism areas where foreign buyers have traditionally accounted for a large share of house purchases and where, therefore, the restrictions on international travel have had the most impact.

The pandemic has also triggered some marked changes in the type of housing demanded, on account of households' new requirements following the lockdown and the surge in remote working, among other factors. Indeed, in recent months there has been an increased preference for single-family homes and new housing, and for a larger average size of homes of almost all types[2] (see Chart 3). The present crisis has also quickened some existing trends, such as a certain demand shift away from the big cities and towards less densely populated municipalities (see Chart 4). This has been encouraged by the greater structural supply shortage of new housing in the big cities – and hence a generally higher average price of housing in those areas – and by the search for more space outside the cities, in the wake of the restrictive measures adopted to contain the pandemic and the increase in time spent in the home.

In the case of residential rentals, drawing on information obtained from the main real estate portals to March 2021, rental prices appear to be falling in Catalonia, the Madrid region and the Balearic and Canary Islands, while in all other regions they seem be gradually slowing or steadying. In general, the loss of momentum in rental prices observed in recent months is linked to the deterioration in the labour market since the start of the pandemic, particularly among young people and those on temporary employment contracts, which are the groups that most demand rental housing. In some big cities, where rental prices have been hit hardest by the crisis, other factors may also have played a part. These include the lower demand for student rentals, owing to the restrictions on mobility and the increase in distance learning, and the shift in households' preferences towards less densely populated areas with lower prices. Lastly, in cities that are tourist destinations, another important explanatory factor could be the increase in the supply of residential rental housing at the expense of other more short-term rental options, such as holiday rentals, which have been affected by the sharp drop in tourism flows.

To date, the effects of the COVID-19 crisis have been more pronounced in the commercial real estate market than in the residential market, possibly because the commercial segment is traditionally more sensitive to changes in the economic situation. Thus, while the demand for retail outlets essentially hinges on the general economic outlook, other factors, such as demographics, are also key to understanding housing market developments.

Commercial real estate transactions declined significantly in 2020, especially in the first half of the year when transaction numbers were down 44% on a year earlier (see Chart 5). Retail outlets in prime locations, i.e. in big

1 For more details on the effects of the pandemic on the residential real estate segment, see P. Alves and L. San Juan (2021), "El impacto de la crisis sanitaria del COVID-19 sobre el mercado de la vivienda en España", Analytical Articles, Banco de España (English version forthcoming).

2 Possibly partially as a result of a shift, on account of the pandemic, in the composition of home-buyers towards somewhat older buyers with a slightly higher socio-economic position.

Box 2.1

DEVELOPMENTS IN THE REAL ESTATE MARKET SINCE THE START OF THE PANDEMIC (cont'd)

Chart 1
HOUSING, REGISTERED SALES: TOTAL, NEW AND SECOND-HAND

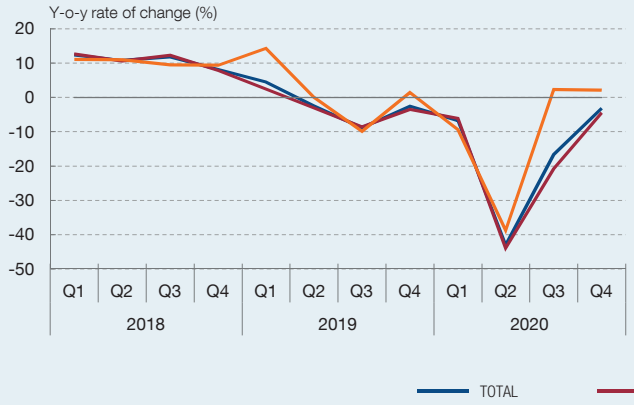


Chart 2
HOUSING, PRICES: TOTAL, NEW AND SECOND-HAND

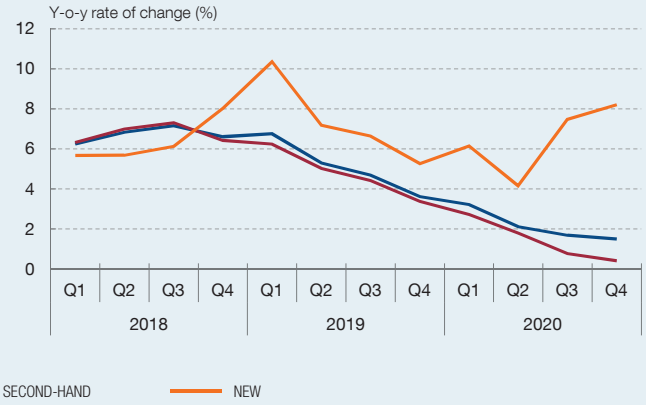


Chart 3
HOUSING, NOTARIAL SALES: SINGLE-FAMILY HOMES AND NEW OPEN-MARKET APARTMENTS

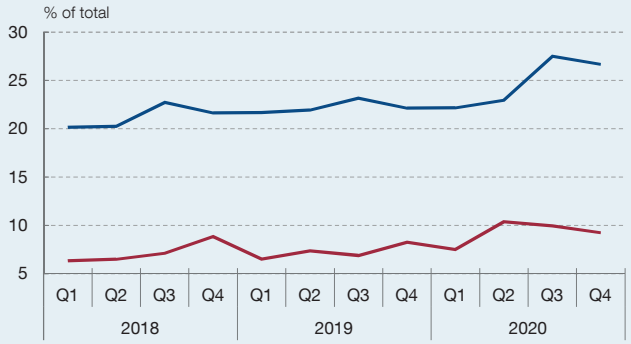


Chart 4
HOUSING, PROVINCIAL CAPITAL SALES: CHANGE IN WEIGHT IN PROVINCE TOTAL

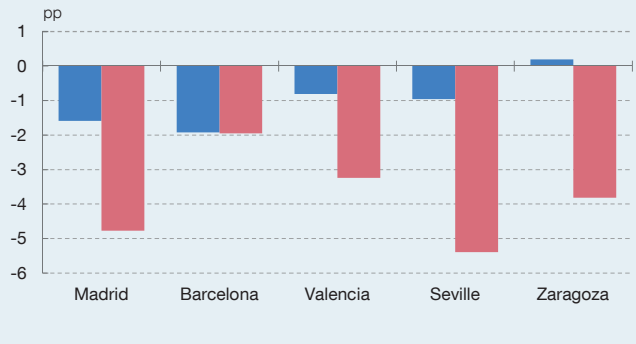


Chart 5
COMMERCIAL REAL ESTATE, NEW TRANSACTIONS (a) (b)

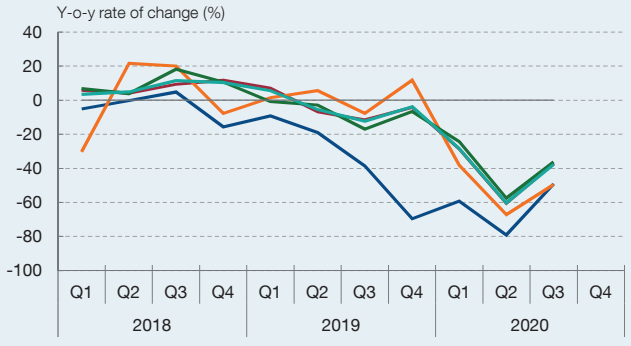
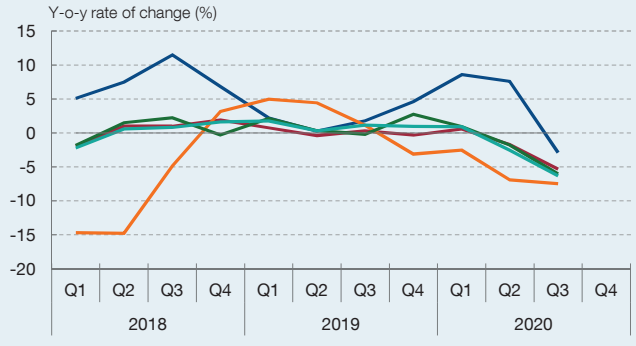


Chart 6
COMMERCIAL REAL ESTATE, PRICE PER M² (b) (c)



SOURCES: Centro de Información Estadística del Notariado, Colegio de Registradores, INE and Ministerio de Transportes, Movilidad y Agenda Urbana.

a Number of transactions calculated as the four-period moving average of the transactions registered each quarter in each segment.
b Prime: commercial premises in the prime retail districts of Madrid, Barcelona, Bilbao, Palma, Valencia and Malaga.
c Commercial real estate price indices calculated drawing on the four-period moving average of the median transaction price for retail outlets in each quarter.

city centres, performed especially poorly, although transactions were under pressure in those areas before the pandemic. By asset type, sales fell most markedly in the office sub-segment and somewhat less so in industrial premises, in the latter case possibly as a result of certain structural changes that have become more pronounced during the crisis. For instance, the growth in e-commerce, which requires large, well-situated logistics hubs, could have cushioned the decline in demand for industrial premises. In turn, office purchases could have been more affected since the start of the pandemic as a consequence of the increase in remote working.

Prices in the commercial real estate segment have fallen across the board since March 2020, but less so than transaction numbers. Specifically, commercial real estate prices fell by 8.9% year-on-year in 2020 Q4 (expressed as a four-quarter moving average), with a very marked drop in the case of offices (see Chart 6). The fact that prices have been more stable than transaction numbers could indicate that sellers have delayed sales decisions in recent months, to avoid or postpone having to assume sharp price falls. In this respect it is noteworthy that prices in prime areas, unlike transaction numbers, have performed somewhat more favourably than the commercial segment overall.

Box 2.2

GLOBAL TRADE FLOWS AGAINST THE BACKGROUND OF THE PANDEMIC

The COVID-19 pandemic has caused some international trade distortions, most of which were temporary.[1] Thus, although the global closure of borders in the early months of the COVID-19 crisis prompted a severe decline in world trade, there was a turnaround towards end-2020. As a result, international trade flows had by then recovered their pre-pandemic levels (see Section 1.2 of Chapter 1 of this Report).

An example of the temporary nature of some of the distortions arising as a consequence of the pandemic were the protectionist measures many countries temporarily adopted in respect of trade in medical products, in light of the supply problems that were particularly prominent in March and April last year[2] (see Chart 1.1.). More recently, some restrictions have been placed on the distribution of vaccines against COVID-19. Although these will foreseeably be lifted once the pandemic is under control, their presence might hamper the effective distribution of vaccines globally.

Notwithstanding, several geopolitically geared initiatives launched recently might indeed have a lasting effect on the relocation of activity and the reorganisation of global value chains (GVCs). For example, countries such as the United States, Japan and South Korea have announced incentives in recent months for the renationalisation of productive processes by means of subsidies and tax credits. Within the EU, some countries, such as France, have also approved budget funds to support the return of companies. The EU itself has undertaken several initiatives under the so-called "open strategic autonomy" strategy, which seeks to increase the robustness of European production chains and to lessen the dependence on third countries in some strategic areas.[3]

However, when assessing these developments, it is important to bear in mind that, in the current crisis, those firms whose production is more integrated into GVCs are precisely those that have performed better and which have experienced least disruption in their output. The evidence available, moreover, suggest that these companies have a greater capacity to recover following an adverse shock.[4] Conversely, resorting to a higher amount of national inputs usually increases the volatility of GDP because it reduces the degree of risk diversification.[5] Indeed, there has been proof[6] in this crisis that, although those sectors of the EU countries, Japan and the United States most integrated into the GVCs bore the brunt of the initial external shock originating in China, when the pandemic also hit domestic markets, it was these firms that performed comparatively better (see Chart 2.1).

To interpret the recent measures, it should be borne in mind that these developments are part of a larger-scale pre-pandemic process that partly called into question the WTO rules-based multilateral framework. Notable milestones in this process have been the escalation of US-China trade rivalry in recent years (see Chart 1.2) and Brexit. While globally these episodes have not led to a generalised increase in tariff barriers, they have actually caused a notable rise in trade uncertainty,[7] adversely affecting global trade, and they have prompted trade flow diversions. Specifically, the United Kingdom's withdrawal from the EU will increase non-tariff barriers between the two areas and will necessitate numerous bilateral agreements between the United Kingdom and third countries[8] (see Chart 1.4). In Spain's case, it has also been apparent since the June 2016 Brexit referendum how Spanish firms (in particular those with greater trade exposure) have reduced their purchases from and sales to the United Kingdom and have increased trade with the EU. That has entailed a 14% decline in Spain-UK bilateral trade in goods in January 2021, compared with the same

1 For a fuller discussion on long-term trends in world trade, see I. Kataryniuk, J.J. Pérez and F. Viani (2021), *(De-) globalization of trade and regionalization: a survey of facts and arguments,* Occasional Paper, Banco de España, forthcoming.

2 See C. García, C. Martín and F. Viani (2020). "International trade in medical products during the COVID-19 pandemic", Box 4, Economic Bulletin, 4/2020, Banco de España.

3 See P. L'Hotellerie-Fallois, M. Manrique and A. Millaruelo (2021), "Open strategic autonomy in the EU", Box 5, *Economic Bulletin,* 1/2021, Banco de España.

4 See S. Miroudot (2020), "Resilience versus robustness in global value chains: Some policy implications", in *COVID-19 and trade policy: Why turning inward won't work,* pp. 117-130.

5 See OECD (2020), *Shocks, risks and global value chains: insights from the OECD METRO model,* 29 June.

6 See A. Espitia, A. Mattoo, N. Rocha, M. Ruta and D. Winkler (2021), *Pandemic Trade: COVID-19, Remote Work and Global Value Chains,* Policy Research Working Papers, no 9508, World Bank.

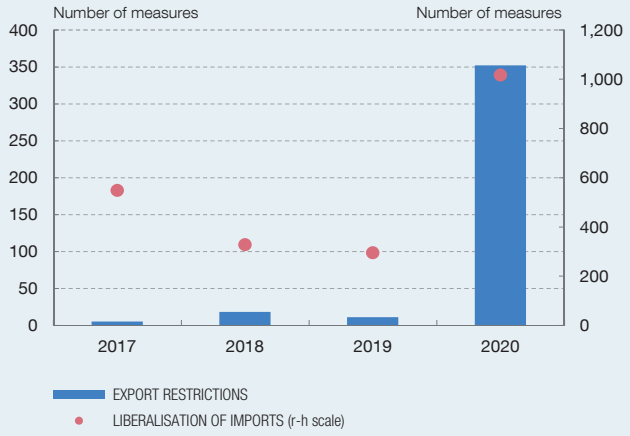
7 See S. Albrizio, A. Buesa, M. Roth and F. Viani, *The real effects of trade uncertainty,* Working Paper, Banco de España, forthcoming.

8 See A. Buesa, I. Kataryniuk, P. L'Hotellerie-Fallois and S. Moreno, "The EU-UK Trade and Cooperation Agreement", Analytical Articles , *Economic Bulletin,* 1/2021, Banco de España.

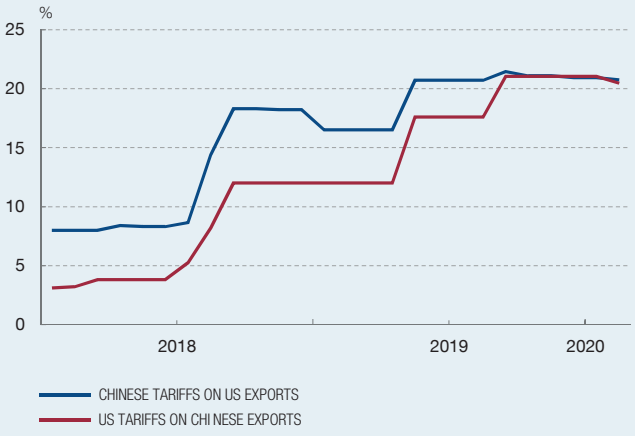
month a year earlier.[9] Apart from this case, in recent years the increase in non-tariff barriers[10] has been global in scope (see Chart 1.3), largely reflecting the generalisation of higher environmental, social and labour market standards in respect of production processes for tradable goods and services.[11]

Chart 1
TRADE BARRIERS AND BILATERAL AGREEMENTS

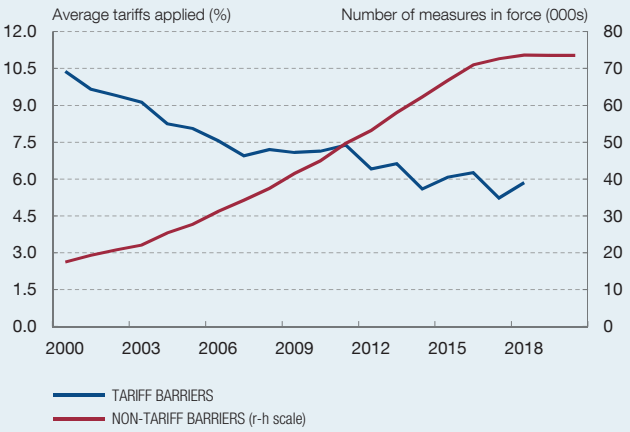
1 TRADE POLICY MEASURES AFFECTING TRADE IN MEDICAL PRODUCTS (a)



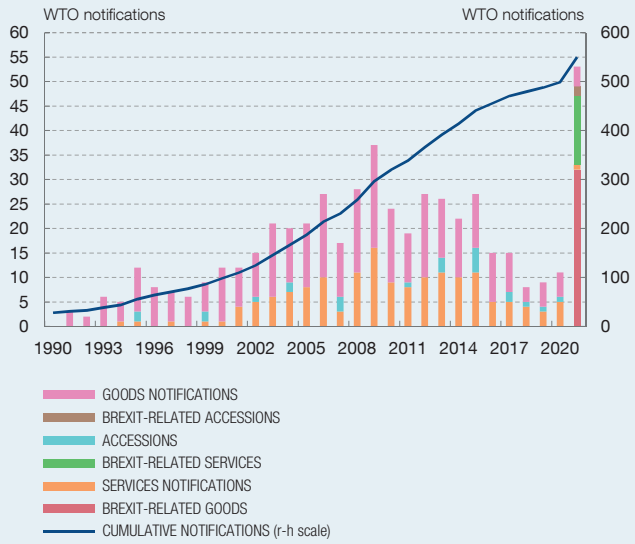
2 US/CHINA BILATERAL TARIFFS



3 TARIFF AND NON-TARIFF BARRIERS (b)



4 BILATERAL TRADE AGREEMENTS



SOURCES: Global Trade Alert, OMC, Bown (2019), UNCTAD and own data.

a Number of measures per HS4 code, according to the WTO classification of medical products.
b Effective tariffs applied refers to the lower of preferential tariffs and Most Favoured Nation tariffs.

9 E. Gutiérrez, A. Lacuesta and C. Martín, "Brexit: Trade diversion due to trade policy uncertainty", Working Paper, Banco de España, forthcoming.

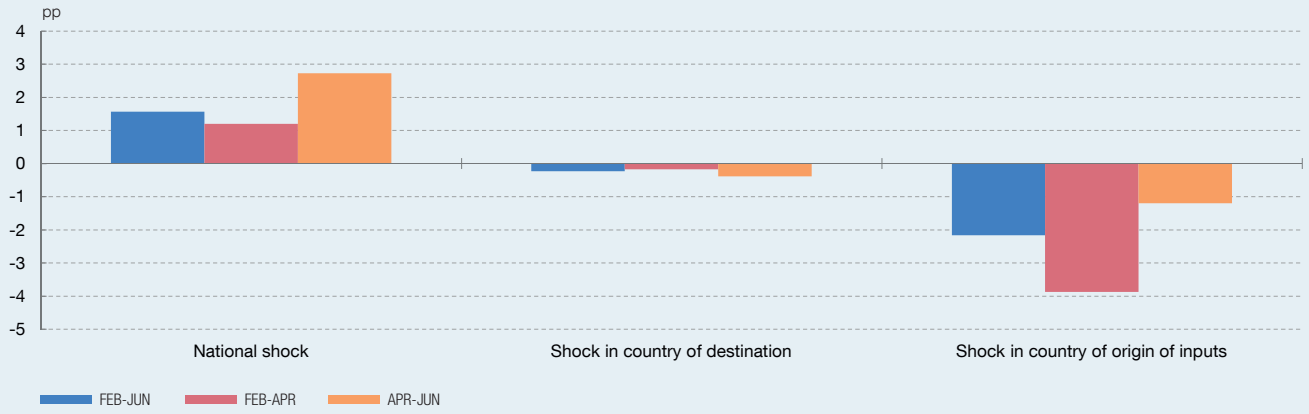
10 Effective tariff barriers are defined as the lower of preferential tariffs and the Most Favoured Nation tariffs applied under the WTO framework. The series does not include the tariff measures applied by the United States to imports from China and from other countries as from 2018 against the background of the trade dispute.

11 See F. Lopez, J. Timini and N. Cortinovis (2020), *Do trade agreements with labor provisions matter for emerging and developing economies' exports?,* Working Paper, no 2017, Banco de España, and Timini, J. and M. Conesa (2019), "Chinese exports and non-tariff measures", *Journal of Economic Integration,* 34(2), pp. 327-345.

Another process under way prior to the outbreak of the pandemic was the slowdown in international trade in goods. Various factors are estimated to have contributed here. In particular, the lower weight of international trade in goods as a percentage of global GDP in recent years (see Chart 2.2) would partly be the result of: the transition in China to a growth model based to a lesser extent on external trade;[12] a tailing off of the dividends arising from the trade liberalisation measures adopted across the board in the decades prior to the financial crisis; and the slowdown in the scope for fragmentation of GVCs, which had already attained very high levels of complexity. Yet it should be mentioned that this slowdown in world trade in goods is proving compatible with an increase in regional

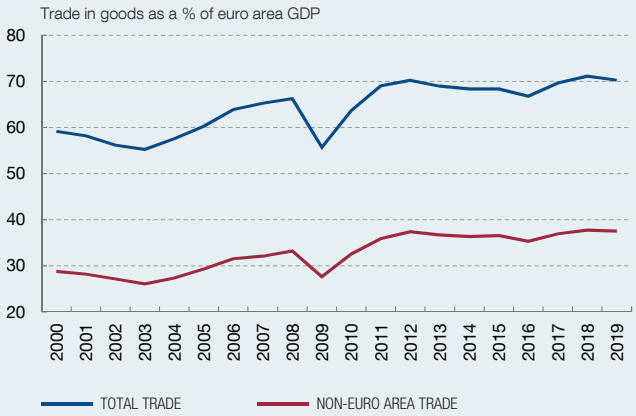
Chart 2
TRADE OPENNESS AND GLOBAL VALUE CHAINS

1 RELATIVE IMPACT OF THE PANDEMIC ON BILATERAL EXPORTS (a)



2 TRADE OPENNESS

3 TRADE OPENNESS OF THE EURO AREA



SOURCES: World Bank, Comtrade, Eurostat, OECD, IMF, ASEANStatPortal and Espitia et al. (2021).

a The bars show the differential effect on bilateral exports of a share in global chains of a value of 1 percentage point higher, in the face of different shocks. The chart thus shows the results of the estimate of the effect on exports of a supply-side shock in the country of origin of the exports (left), a demand-side shock in the country of destination (centre) and a supply-side shock in the countries from which the inputs used come (right), at different times in the pandemic: February-April, when the input-supplying countries, such as China, were more affected; April-June, when the pandemic spread, and the aggregate. For more information see Espitia et al. (2021).

12 See, for example, M. Roth, D. Santabárbara and B. Xu (2019), "Global impact of a slowdown in China", *Economic Bulletin,* 4/2019, Banco de España; and Timini, J. (2017), "China's economic imbalances and the role of the financial sector". *Economic Bulletin,* 4/2017, Banco de España.

trade, against a background in which trade ties among member countries of a single region have strengthened in many areas, in particular in North America and in the EU (see Chart 2.3).[13]

The counterpoint to the slowdown in trade in goods is a rising trend in global trade in services, which might be reinforced as a result of the pandemic. Indeed, services have become progressively more tradable in recent years – owing mainly to technological progress and digitalisation – and their weight in the productive processes for certain manufactures has increased.[14] Recent experience might strengthen this rising trend, by highlighting how digitalisation can make certain services tradable when they were previously not deemed to be so. This is the case, for instance, of so-called "tele-migrants"[15] who, through digital technologies, can live in one country and provide services in others.

In conclusion, there is clear evidence that sustaining a global framework of shared multilateral rules contributes to increasing the robustness and resilience of national economies. In particular, diversification and trade integration have helped tackle the impact of the current crisis and they will be a fundamental factor in driving the recovery. The pandemic has not affected the main factors stemming from the benefits derived from international trade, such as labour specialisation and the organisation of production. These have allowed the income of the world population to expand in recent decades. Moreover, some of the new emerging challenges – such as combating climate change and how the major digital corporations operate – are on a global scale, and should be addressed from a multilateral perspective.

However, recent experience might indeed strengthen certain previous trends, with a geopolitical backdrop, that may lead to a greater geographical fragmentation of the movement of goods, services, capital and people. On the one hand, growing geopolitical competition, which is particularly visible in the technological realm, might heighten insofar as the digitalisation of activity increases dependence on specific technologies provided by major global players based chiefly in the United States and in China. On the other, the advanced economies' diminished relative economic weight and rising inequality in these countries, which might fuel political and social polarisation processes, could prompt changes in agents' preferences with respect to globalisation.

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13 Trade ties in the Asia-Pacific region will also be strengthened by the RCEP, a trade agreement reached by a group of 15 economies belonging to this area, including China, South Korea and Japan.

14 Known as the "servicification" of manufactures. See M Lodefalk (2017), "Servicification of firms and trade policy implications". World Trade Rev., 16, pp. 59-83.

15 Baldwin, R. (2019). "EAEA16 Keynote Address: The Future of Globalization", Asian Economic Journal, 33(1), pp. 3-12.

Box 2.3

NGEU: AN INITIATIVE BOLSTERING THE EU PROJECT

Next Generation EU (NGEU) is the temporary instrument put in place by the European Union to boost, through investment and reform financing, the recovery of Member States' economies in the wake of the pandemic.[1] Its aims are not limited to offsetting in the near term the fall in demand resulting from the crisis and supporting Member States' emergency programmes through the mobilisation of additional resources under current cohesion funds. More importantly, NGEU also aims to increase the European economy's growth potential in the medium and long term, by boosting reforms and reallocating productive resources to areas such as digitalisation and combating climate change. An additional feature of this programme is that the allocation of its total funds among countries will not be proportional to their respective economic weights, but will favour Member States more severely affected by the pandemic. The reason is it seeks uniform recovery, thus avoiding any economic fragmentation in the EU as a result of the crisis. NGEU was adopted simultaneously with the multiannual EU budget for the period 2021-2027, under which spending has also been reoriented to foster the structural transformation of the European economy.

NGEU, with a total envelope of €750 billon, comprises several instruments. The Recovery and Resilience Facility (RRF) is the centrepiece, with an envelope of €672.5 billion, of which €312.5 billion will take the form of grants and €360 billion the form of loans.[2] The RRF is supplemented with many additional smaller instruments, totalling €77.5 billion, some of which were already in place before the outbreak of the pandemic. The total volume of funds under NGEU amounts to slightly over 5% of EU GDP, but, as discussed above, since the allocation among countries is not proportional to their respective weights in the EU as a whole, this instrument might mobilise funds accounting for almost 20% of some countries' annual GDP in cumulative terms over the duration of the programme (see Chart 1).

NGEU is thus helping to make up for the lack of a common automatic fiscal stabilisation capacity, one of the main shortcomings in the EU's institutional architecture. In the current circumstances, a permanent macroeconomic stabilisation mechanism enabling the heterogeneous effects across countries arising from the materialisation of a risk to be more evenly distributed among them would have been particularly useful. The lack of this common mechanism is, specifically, a significant constraint on the smooth functioning of EMU. Furthermore, strengthening the euro area capacity to address economic shocks also requires completing initiatives such as the banking union and the capital markets union (see Box 1.3).

NGEU financing through large-scale supranational debt issuance represents an unprecedented step that will contribute to reducing the relative scarcity of euro-denominated safe assets. The EU will borrow funds by issuing debt instruments for a volume of up to €750 billion — i.e. the programme envelope —, with different maturities from 2027 to 2058. Under the assumption that this borrowing capacity will be used in full, the pan-European debt stock would double, thus expanding the range of choices available to international investors for the inclusion of euro-denominated assets in their safe asset portfolio, with the additional incentive of yielding a higher return than other euro-denominated assets (see Charts 2 and 3).[3]

Despite its temporary nature, the implementation of NGEU represents a significant step forward in the construction of the European institutional framework. The evidence available shows that the confirmation of news reflecting progress in this connection, insofar as they are perceived as strengthening European construction, has historically led to a reduction in euro area countries' sovereign bond yields.[4] The adoption of NGEU, which was not an exception in this respect, was accompanied by an easing of financing conditions for sovereigns and by rises in stock market indices in the euro area.[5]

In order to receive funds from the RRF, each Member State is required to submit a Recovery and Resilience Plan (RRP) setting out the investments and reforms to which the funds will be allocated. The projects to be financed, which should be structured around six priority

1 See O. Arce, I. Kataryniuk, P. Marín and J.J. Pérez (2020), *Thoughts on the design of a European Recovery Fund*. Occasional Papers, No. 2014, Banco de España.

2 These amounts are expressed in 2018 prices and, therefore, will be larger in practice after accounting for cumulative inflation since then.

3 See M. Delgado-Téllez, I. Kataryniuk, F. López-Vicente, and J.J. Pérez (2020), *Supranational debt and financing needs in the European Union*, Occasional Papers, No. 2021, Banco de España.

4 See I. Kataryniuk, V. Mora-Bajén and J.J. Pérez (2021), *EMU deepening and sovereign debt spreads: using political space to achieve policy space*, Working Papers, No. 2103, Banco de España.

5 See Box 5, "Next Generation EU: Main characteristics and impact of its announcement on financial conditions", *Economic Bulletin,* 3/2020, Banco de España.

pillars common to all countries, are to be implemented by 2026. The European Commission (EC) will assess the implementation of each RRP every six months based on a set of criteria, including, among others, alignment with these common priorities, contribution to compliance with the European Commission's country-specific recommendations,[6] implementation by the relevant Member State of the European social rights pillar and allocation of certain minimum percentages of the total funds to the green and digital transitions (37% and 20%, respectively). The criteria to be considered will also include an assessment of the efficiency of the measures adopted, in terms of fulfilment of the milestones and targets proposed by each Member State (see Table 1). In 2022 Member States shall review compliance with their RRPs to ensure that grants have been fully allocated by

NGEU is contributing to make up for the lack of a common automatic fiscal stabilisation capacity. The amount of top-notch credit rating EU bond stocks as a percentage of GDP is more than three times lower than that of US bond stocks.

Chart 1
NGEU GRANTS AND LOANS PER COUNTRY

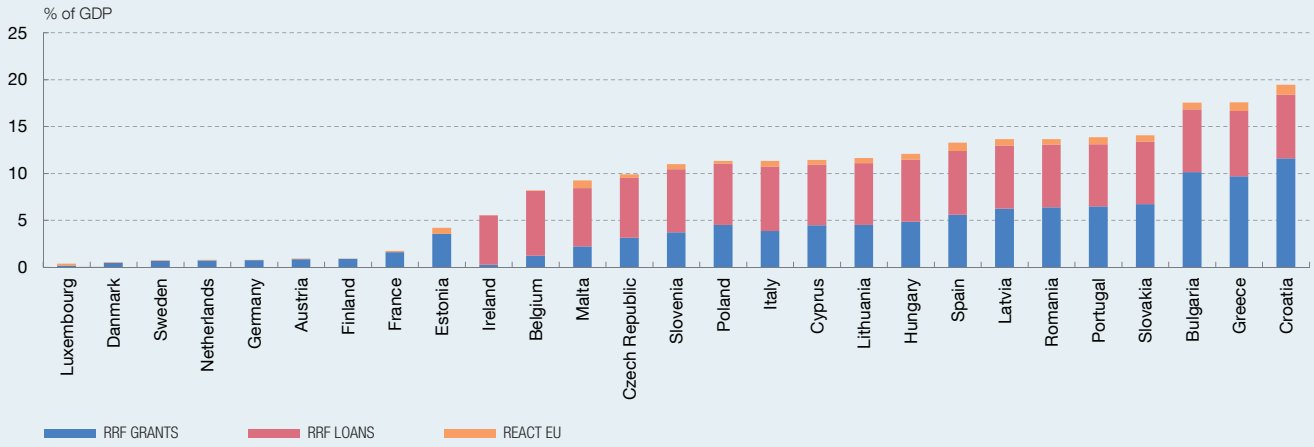


Chart 2
STOCK OF SAFE ASSETS (2019) (a)

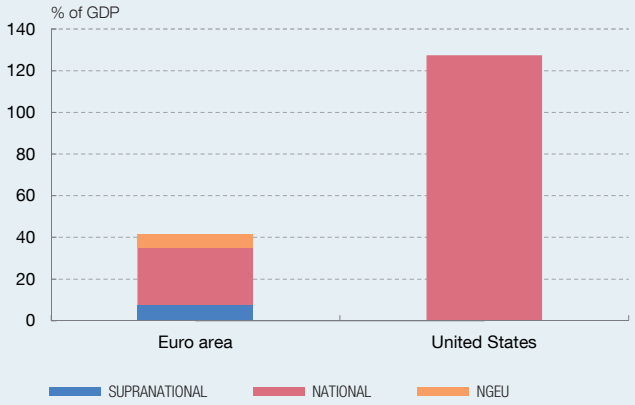
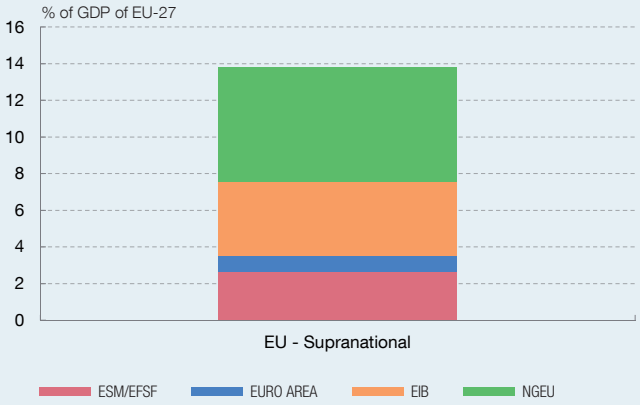


Chart 3
STOCK OF PANEUROPEAN SAFE ASSETS (2019)



SOURCES: European Commission, Eurostat and national statistics.

a Long-term public debt. Rated AAA/AA+ by S&P. National in the euro area includes Germany, Austria, Finland, Luxembourg and the Netherlands.

6 P. García-Perea, A. Millaruelo de la Fuente, A., V.M. Mora Bajén and C. Sánchez Carretero, (2020), *The 2020 European Semester and the specific recommendations for Spain,* Economic Notes, *Economic Bulletin,* 3/2020, Banco de España, elaborate on the specific recommendations relevant to this assessment.

the end of 2023. In addition, prior to that date, each country will be allowed to modify its RRP at any time as a result of the submission of additional investment or reform projects, where these projects are proposed to be financed with loans.

To date, only the first draft RRPs of most Member States, containing a preliminary overview of their projected public investments, are known. The priority areas include the reduction of climate change-inducing emissions, for which projects improving energy efficiency of buildings or promoting electric mobility, for example, through the installation of electric vehicle charging stations, have been proposed.[7] Several countries plan to undertake large-scale transport infrastructure projects, partially financed with Cohesion Funds. The proposed reforms

Table 1
RECOVERY AND RESILIENCE PLAN ASSESSMENT CRITERIA (a)

Criteria	Description	Required rating
Response to the economic and social situation	The RRP contributes in a comprehensive and adequately balanced manner to all six pillars, taking into account the specific challenges, the financial contribution and the requested loan support of the Member State concerned	Majority of As
Adressing country-specific recommendations	The RRP effectively addresses all or a significant subset of challenges identified in the relevant country-specific recommendations, or challenges identified in other relevant documents officially adopted by the Commission in the context of the European Semester, and the RRP represents an adequate response to the economic and social situation of the Member State concerned	A
Smart, sustainable and integrating growth	The RRP strengthens the growth potential, job creation, and economic, social and institutional resilience of the Member State, contributing to the implementation of the European pillar of social rights, including through the promotion of policies for children and youth, and mitigates the economic and social impact of the COVID-19 crisis, thereby enhancing the economic, social and territorial cohesion and convergence within the Union	A
No environmental harm	No measure does significant harm to environmental objectives	Majority of As
Green transition	The RRP contains measures that effectively contribute to the green transition, including biodiversity, or to addressing the challenges resulting therefrom, and that account for an amount which represents at least 37% of the RRP's total allocation	A
Digital transition	The RRP contains measures that effectively contribute to the digital transition or to addressing the challenges resulting therefrom, and that account for an amount which represents at least 20% of the RRP's total allocation	A
Structural reforms	The RRP has a lasting impact on the Member State concerned	Majority of As
Monitoring and implementation	Arrangements ensure effective monitoring and implementation of the RRP, including the envisaged timetable, milestones and targets, and the related indicators	Majority of As
Reasonable and plausible costs	The justification provided by the Member State on the amount of the estimated total costs of the RRP is reasonable and plausible and is in line with the principle of cost efficiency and is commensurate to the expected national economic and social impact	Majority of As
Prevention of corruption, fraud and conflicts of interests	The proposed arrangements prevent, detect and correct corruption, fraud and conflicts of interests when using the funds provided under the RRF, including the arrangements that aim to avoid double funding from the RRF and other Union programmes	Majority of As
Coherent actions	The RRP contains measures for the implementation of reforms and public investment projects that represent coherent actions	Majority of As

SOURCE: Devised by authors based on the European Commission.

a The European Commission assesses the criteria by giving ratings from A (highest) to C (lowest). Countries are required to have an A for the criteria in rows 2,3, 5 and 6 and a majority of As for the other criteria.

7 See M. Lopriore and M. Vlachodimitropoulou (2021), *Recovery and resilience plans for the next generation EU: a unique opportunity that must be taken quickly, and carefully,* EIPA Paper, European Institute of Public Administration.

focus on aspects such as administrative simplification (Belgium, Greece and Germany), reform of the judicial system (Greece and Italy) or improving public finance sustainability through different channels, including spending reviews or the introduction of tax reforms (Belgium, Italy and Romania). Finally, as regards RRP governance, several countries (Portugal, Bulgaria, Croatia and Greece) launched public consultations which enabled social agents and the general public to contribute to the design of the proposed measures.

Box 2.4

LABOUR MARKET DUALITY AND SEVERANCE COSTS: A MODEL BASED ON THE AUSTRIAN FUND

The Spanish labour market presents a high degree of duality in relation to the compensation received by workers at the end of their employment relationship, with low compensation for those under temporary contracts of short duration and significantly higher compensation for those with permanent contracts and many years of service.[1] These differences can distort firms' decisions when they need to reduce their workforce. In particular, for the same level of productivity, workers who have accrued fewer entitlements, owing to their accumulated years of service or their contract type, tend to bear the brunt of staff reductions since they are owed less in severance compensation.[2] Moreover, quite frequently, the accumulation of these entitlements to compensation, which workers will only receive in the event of dismissal, hampers labour mobility, since those leaving their jobs voluntarily lose any entitlements accumulated hitherto.

One possibility that has been considered, both in the academic literature and in the public debate, to redress these shortcomings is the so-called "Austrian fund".[3] Under this system, firms make monthly contributions to a fund in the name of the worker, who is able to use the fund in the event of involuntary loss of employment, whether as a result of dismissal or contract expiry. In the case of voluntary termination, the worker does not lose the amount accumulated in the fund and can continue to build it up through contributions made by other employers. If it has not already been recovered, the entirety of the accumulated fund is accessible to the worker upon retirement. As a counterpart to firms' monthly contributions to their workers' individual funds, under this system the compensation that firms would have to pay when the employment relationship is terminated is reduced.

Fully or partially replacing the current severance cost framework with such a system could yield significant benefits in the medium and long term.[4] First, under this system the distribution among workers of the entitlements accrued over the course of their working lives would be less unequal. This is because all workers, without exception, would at some time receive the amounts accumulated in their fund, whereas at present only those who lose their employment are entitled to such compensation. Second, there would be more incentive for labour mobility over the course of employees' working lives, since the contributions built up in the fund are not lost in the event of voluntary termination, while under the current system all entitlements associated with years of service are lost when they change job. Third, from the standpoint of firms, the fact that the entitlements accrued by their workers are recognised gradually, via periodic contributions to each employee's fund, rather than as a one-off payment in the event of future dismissal (at a time when firms might be in a vulnerable financial position), means any liquidity tensions at the company can be smoothed over time. Lastly, and associated with the above, firms would base their employee termination decisions more on productivity and efficiency considerations and less than on the compensation entitlements accumulated by their workers, since the amounts payable by the firm at the time of dismissal would be less closely associated with those entitlements.

However, despite these potential medium and long-term benefits, the introduction of such a model is not without certain difficulties. The first relates to determining a sufficient level of protection against dismissal when the new system is fully operational for all workers. A second important matter, connected with the above, concerns the transition from the existing model to a new system based on such a mechanism. In particular, introducing the new system poses the challenge of recognising the compensation entitlements built up hitherto by current workers under the existing arrangements (and therefore not paid into an individual fund).

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1 By way of example, according to estimates based on the Continuous Sample of Working Histories (MCVL by its Spanish acronym), between 2013 and 2016 10% of workers receiving compensation at the end of their employment relationship collected €23 or less, while the 10% of workers who received the highest compensation collected €6,400 or more.

2 For more information on the evidence relating to the impact of Spain's labour market duality on hiring and firing decisions, see Box 6, "Job creation and destruction flows by type of contract during the recovery", *Economic Bulletin,* 1/2019, Banco de España.

3 The fund takes its name from the severance pay reform introduced in Austria in 2002, which replaced the compensation payable by firms to workers at the end of their employment relationship with a system under which firms made monthly contributions to an account in the worker's name equivalent to a specific percentage of their wage.

4 See, among other studies, J. I. Conde-Ruiz, F. Felgueroso and J.I. García-Pérez "El fondo de capitalización a la austríaca: costes y beneficios de su implantación en España", *Estudios Económicos* 6/2011, FEDEA, 2011. The role of an Austrian fund as a complement to retirement pensions, with favourable effects on the stock of capital in the economy and aggregate output, was recently analysed by J. Brogueira de Sousa, J. Díaz-Saavedra and R. Marimon, "Introducing an Austrian Backpack in Spain", *ADEMU WP Series* 139, 2018.

Box 2.4

LABOUR MARKET DUALITY AND SEVERANCE COSTS: A MODEL BASED ON THE AUSTRIAN FUND (cont'd)

The simulation below offers a quantitative illustration of the two above challenges in the recent context of the Spanish labour market. For this purpose, a hypothetical scenario is constructed under which an Austrian fund model is introduced – with firms making periodic contributions in the name of each of their workers – based on two assumptions. First, it is assumed that this model is introduced alongside a reform of severance costs, whereby, in the long run – once all workers are included in the new system – there is no reduction in the aggregate amounts paid to workers should they lose their employment, nor cost overruns for firms or public finances. Second, it is assumed that all entitlements accumulated under the previous model up until the introduction of the new system are maintained. The short-term costs of introducing this system – as a consequence of recognising the compensation entitlements already accrued by existing workers – are estimated on the basis of these two assumptions (under any realistic scenario, these assumptions would evidently be matters to be decided by social and economic agents and politicians).

Regarding the first of the above assumptions, on the information provided by the Panel of Data on Firms and Workers (PET by its Spanish acronym), available for the period 2013-2016, if firms' contributions to workers' individual funds are equivalent to six days of pay per year of service and the severance and termination costs for existing contracts are reduced by 50%,[5] in the long-term the total costs paid by firms – including both the regular contributions to individual funds and the new severance payments – would be very similar to the total severance payments that firms would pay under the current model (see Table 1, columns 1 and 2).[6]

Table 1
SIMULATION OF TOTAL COSTS FOR FIRMS OF THE CURRENT SYSTEM OF SEVERANCE COSTS AND OF A MIXED SYSTEM COMBINING AN AUSTRIAN FUND AND A REFORM OF SEVERANCE COSTS

€m	Total costs paid by firms under the current system	Total theoretical costs that firms would pay under the mixed system in the long term	Total costs paid by firms under the mixed system in the transition, without the support mechanism (a) (b)	Total costs paid by firms under the mixed system in the transition, with the support mechanism (a)			State contribution to individual funds in the transition to the mixed system, with the support mechanism (d)
				Severance compensation	Contributions to individual funds (c)	Total	
	(1)	(2)	(3)	(4)	(5)	(6) = (4) + (5)	(7)
2013	7,236	6,832	9,868	6,653	536	7,189	2,679
2014	6,809	6,810	9,057	5,651	1,135	6,786	2,270
2015	7,242	7,194	9,267	5,694	1,786	7,481	1,786
2016	6,501	7,044	8,560	4,767	2,529	7,296	1,264
Total period 2013-2016 (e)	27,998	28,010	37,093	23,082	5,979	29,062	8,031

SOURCES: Banco de España, based on data from the Social Security General Treasury (Panel of Data on Firms and Workers, 2013-2016).

a The total costs paid by firms under the mixed system during the transition are based on the assumption that the reform of severance costs is introduced on 1 January 2013. For workers registered prior to that date, the firm would have to pay the severance costs under the current system corresponding to the accumulated years of service up to 1 January 2013, plus the severance costs under the reform (half) for the years of service accumulated between 1 January 2013 and the date of termination.
b Note that column (3) corresponds to the sum of columns (4), (5) and (7).
c The firms' contributions to individual funds are equivalent to one day of pay per year of service in 2013, two days in 2014, three days in 2015 and four days in 2016.
d The State's contributions are equivalent to five days of pay per year of service in 2013, four days in 2014, three days in 2015 and two days in 2016.
e The estimated costs for the period 2013-2016 do not exactly match the sum of the costs estimated for each year. This is because the estimate for the period 2013-2016 uses the mode of each firm's size throughout the period as population weight, while for the annual estimate each firm's size in each year is used.

5 Equivalent to 16.5 days' pay per year of service for unfair dismissal, 10 days' pay per year of service for fair dismissals, and 6 days' pay per year of service for the termination of temporary contracts. The compensation ceilings would remain unchanged.

6 The exercise estimates the severance and termination costs under the current system for the period 2013-2016 and compares them with the same costs that would be incurred under the system proposed in this box, combining an Austrian fund with lower severance and termination costs. Under both systems, the total figure paid by firms is approximately €28 billion over the four years analysed. It is important to note that a more precise calibration of this exercise would need to take into account the average compensation over a complete economic cycle and not only in the period 2013-2016, but PET data are only available for this specific period.

Box 2.4

LABOUR MARKET DUALITY AND SEVERANCE COSTS: A MODEL BASED ON THE AUSTRIAN FUND (cont'd)

To estimate the costs of transitioning to the new model, PET data are once again used for the period 2013-2016 and a hypothetical scenario is assumed under which the reform comes into effect on 1 January 2013.[7] Under this hypothesis, the costs arising from each dismissal or termination are simulated, according to cause for termination, wage and contract start date, such that the compensation entitlements accumulated by workers prior to the reform are maintained. This latter circumstance gives rise to a cost overrun in respect of the funds needed to maintain the system in the long term, once all workers are included therein.

Column 3 of Table 1 shows the results of the simulation for each year. Specifically, in the transition to the new system (in the period 2013-2016) the total cost payable by firms – including both contributions to workers' individual funds and severance payments – would be higher by approximately €9 billion as compared with the current system. To cover this gap, the possibility is considered of the State financing a share of the firms' contributions to the new fund, albeit only in the short term and in a decreasing amount over time: five days' pay per year of service in the first year after the reform, four days' pay in the second year, and so on, such that firms would fully cover the payments to the fund six years after the approval of the reform.

Columns 4 and 5 of Table 1 show the amounts payable by firms as severance pay and the contributions to workers' individual funds, respectively. As can be seen, the total of these amounts for the overall period analysed (column 6) is very similar to that in column 1, which is the amount payable under the current system. Meanwhile, column 7 of Table 1 shows the cost of this transition mechanism to the State. In line with the design of the mechanism, that cost would gradually decline each year and would amount to approximately €8 billion during the period 2013-2016. Extrapolating those amounts to 2017,[8] the final year of the proposed transition period, the total cost to public finances of funding the transition would be approximately €8,660 million. These costs could be financed, at least in part, using the NGEU funds. Indeed, the European Commission's regulation states that the reforms eligible for such funds must help bolster growth and enhance economic or environmental sustainability, and cites pension system and labour market reforms as specific examples.[9]

It is worth emphasising that this quantitative illustration of the possible requirements entailed in implementing a system based on the Austrian fund in Spain has some limitations which should be taken into account when interpreting the above results. First, the analysis is static, in that it does not consider the possibility of firms and workers changing their labour decisions in response to the introduction of the proposed new system. This is indeed unrealistic. Firms might be more inclined to lay off workers since the marginal cost of making that decision would be reduced by half, and those lay-offs would be less concentrated among the workers with the fewest years of service. In view of this possibility and to strengthen the incentives for firms to internalise the costs arising from the termination of their employment relationships (both in terms of the worker's circumstances and spending on unemployment benefits), consideration could be given to introducing a bonus-malus system, under which firms with lower labour turnover pay lower Social Security contributions, and vice versa. Meanwhile, labour mobility would foreseeably increase since workers would be less reluctant to lose their accrued entitlements and less afraid of being the first to be laid off when they move to a new company. This increase in voluntary mobility would allow workers to find a better job match for their skills, with the concomitant aggregate benefit for the economy.[10]

Second, the data available in the PET restricts the period of analysis to the years from 2013 to 2016, which was a period of economic recovery. It should therefore be taken

7 Lay-offs with a contract start date after 1 January 2013 receive half of the compensation envisaged under the current system (16.5, 10 or 6 days' pay per year of service, depending on the cause of termination), while lay-offs whose contract began before that date receive the amounts established under the current system duly adjusted for the proportion of time worked prior to and after the reform. From 1 January 2013 onwards, all workers receive the contributions made to the Austrian fund.

8 The total cost of the Austrian fund is relatively constant over the years considered. Therefore, bearing in mind that in 2017 the State would pay one day's contribution as opposed to two in 2016, the cost in 2017 would be approximately half the €1,264 million paid in 2016.

9 See "Commission Staff Working Document. Guidance to Member States Recovery and Resilience Plans", *SWD* 205 final, European Commission, 2020.

10 See, for example, A. Kettemann, F. Kramarz and J. Zweimüller, "Job Mobility and Creative Destruction: Flexicurity in the Land of Schumpeter", *Working Paper* No 256, Department of Economics, University of Zurich, 2017.

into account that the exact calibration of the parameters of the above simulation could change if a longer period combining different cyclical phases is considered.[11] Consequently, the quantifications presented here should be interpreted with due caution.

Lastly, under the calibration used in the simulation, the aggregate amounts earmarked for employment protection would remain unchanged in the long term. However, their distribution would be altered, such that the reform would benefit some types of firms and workers and disadvantage other groups relative to the current situation.[12] Specifically, the new system could be relatively beneficial for firms with a high number of lay-offs. Therefore, as has been indicated, it might be appropriate to complement the new system with a bonus-malus arrangement to mitigate this bias. From the standpoint of workers, the new system would particularly benefit those laid off after few years of service and workers changing job voluntarily. The detailed study of these redistributive effects and of the policies that could be deployed to mitigate them should be subject to in-depth analysis in future.

11 In principle, the MCVL could be used to produce a more precise calibration. However, in this sample, the information on the causes of employment termination prior to 2013 is inadequate, particularly for temporary workers, since terminations by contract expiry cannot be distinguished from other causes. Assuming that all involuntary terminations of temporary contracts are due to contract expiry (which have been the majority since 2013), the total compensation paid under the proposed reform in the period 2000-2019 would be very similar (0.2% lower) to that under the current system, while the distribution over time would be less concentrated in periods of recession.

12 See A. Hijzen and A. Salvatori, "Introducing individual savings accounts for severance pay in Spain: An ex-ante assessment of the distributional effects", *OECD Social, Employment and Migration Working Papers,* No 259, OECD Publishing, Paris, 2021.