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Foreword by the Governor Pablo Hernández de Cos

2021 was a year marked by the end of the most acute phase of the COVID-19 pandemic, the ongoing economic recovery and the sharp pick-up in inflation around the world. The Russian invasion of Ukraine in late February 2022 provided a further negative shock in a setting in which many economies, sectors, firms and households had not yet fully recovered from the adverse effects of the health crisis. As a result, the short-term growth outlook has been revised down, particularly in Europe, while inflationary pressures have increased and are expected to be more persistent than anticipated at the beginning of the year.

Against this particularly uncertain backdrop, the Banco de España's *Annual Report* presents in its first chapter an overview, against the global setting, of economic developments in the Spanish economy in 2021 and the first months of 2022, a description and evaluation of the economic policies implemented since the onset of the pandemic and an assessment of the economic outlook and main risks for Spain in the coming quarters. Chapter 2 of this report explores, over a longer time horizon, the structural challenges that the Spanish economy will have to face in the years to come, together with the main economic policy levers available to address them.

The report also includes two theme-based chapters. The third chapter provides a detailed analysis of the current inflationary episode, with a particular focus on its causes and the factors that could influence the persistence of these dynamics in the future. The fourth chapter of this report focuses on the considerable challenges that the fight against climate change and the green transition will pose for the Spanish economy in the coming years.

The performance of activity in recent quarters

The headway made in the vaccination campaign, which began in late 2020, allowed the social distancing measures that most of the world's main economies, including Spain, implemented during the height of the pandemic to be gradually eased throughout 2021, albeit with some back and forth. This helped prolong the recovery in activity that began in the summer of 2020.

However, this recovery was partially hampered by (i) the fluctuations in the health situation, (ii) the sharp rebound in energy prices, and (iii) a number of elements that limited the ability of supply to respond to the higher demand stemming not only from the improved epidemiological situation but also from the extraordinary support provided by economic policies. While the first of these factors became less and less of an impediment as 2021 progressed, the other two factors have increasingly conditioned economic performance.

In particular, although initially price rises were concentrated in commodities and food and seemed to be relatively temporary in nature, in recent quarters their intensity has systematically surprised on the upside, spreading to the rest of the goods and services in the consumption basket and showing signs of greater persistence. In the same vein, the bottlenecks that have arisen in global value and transport chains over the last few quarters for various reasons have not cleared as quickly as expected; indeed, in some cases they have even become more severe following the outbreak of war in Ukraine and the recent worsening of the pandemic in China.

Although all these constraints on economic performance are eminently global, their impact has been highly uneven across the world's major economies. Among other aspects, this heterogeneity owes to cross-country differences in terms of their productive system, access to vaccines, the capacity of economic policies to provide support and dependence on energy inputs.

In this respect, in recent quarters the economic recovery has been particularly strong in the United States, where pre-pandemic levels of activity were exceeded in 2021 H1. This high buoyancy also led to inflationary pressures emerging sooner and more forcefully in that country. By contrast, the euro area overall did not return to its pre-pandemic level of activity until late 2021.

In the case of the Spanish economy, epidemiological developments in the first months of 2021 meant relatively stringent pandemic containment measures had to be left in place, which affected economic performance. However, headway made in the vaccination campaign allowed a more buoyant phase to begin in Q2, although such dynamism was progressively tempered by the supply chain disruptions and higher energy commodity prices, which were compounded

towards the end of the year by the emergence of the Omicron variant. By end-2021 the Spanish economy's GDP was still 3.8 percentage points (pp) below its pre-pandemic level.

At the beginning of 2022, the fade-out of the latest outbreak of the pandemic and some timid signs of relief in the bottlenecks seemed to be helping to mitigate the risk factors that were stymieing Spanish economic activity. Expectations of greater economic buoyancy were also underpinned by the implementation of European funds and the possible release of the savings built up by households during the pandemic.

However, the Russian invasion of Ukraine in late February has constituted a further adverse shock that is affecting Spain and other European economies, through different channels. These include the heightening of inflationary pressures on commodities, the deterioration in economic agents' confidence and the slowdown in international trade. All this has resulted in a marked worsening of growth prospects in the short term and stronger inflationary pressures. In particular, the latest Banco de España projection exercise, published in early April, revised the GDP growth rate for 2022 down (to 4.5%) and the average inflation rate for the entire year up (to 7.5%).

The information available after the publication of these projections, which includes lower-than-expected GDP growth in Q1, would point to a further downward revision of the GDP growth rate expected for this year overall, in the absence of additional shocks. On the price side, the new data points, compared with the April projections, to greater gains in the non-energy component and somewhat more modest growth in the energy component. Moreover, in the coming months the Iberian mechanism to cap the price of gas and lower that of electricity which was recently approved in Spain and Portugal, in agreement with the European Commission, will foreseeably exert downward pressure on energy prices in Spain.

In the absence of any new shocks or an escalation of the war in Ukraine, such a revision of the April 2022 projections would still be consistent with the Spanish economy holding on a gradual recovery path – one that could see it reach pre-pandemic GDP levels in the final stretch of 2023 – and with inflation rates

remaining high in the coming months and subsequently moderating gradually. In any event, the uncertainty surrounding these projections is extraordinarily high.

The role of economic policy

The set of ambitious economic policy measures rolled out at the onset of the pandemic, in many cases in an internationally coordinated manner, has played a key role to mitigate the impact of the health crisis on the income and financial position of households, firms and financial institutions, and ultimately on economies' activity, employment and potential growth.

Before the outbreak of the war in Ukraine, the ongoing economic recovery and the sharp pick-up in inflation had already prompted a certain normalisation of some of these expansionary measures, particularly in the monetary and fiscal policy arena. The war has undoubtedly complicated matters for policymakers.

(i) Fiscal policy

As regards fiscal policy, it is imperative that, against the backdrop of a still incomplete recovery, budgetary policy help to counter the Ukraine war's adverse effects on activity. Once again, these effects are highly uneven across sectors, firms and households.

However, against a background of relatively limited leeway – considering our high levels of government debt –, it is essential that these support measures be designed to closely target the most vulnerable households and firms. In particular, in the current situation the efforts should focus on supporting lower-income households, which are those hit hardest by inflation, and the firms most vulnerable to this new shock.

In addition to being targeted, it is important that the budgetary measures implemented be temporary and not significantly skew price signals. Averting any

feedback into the current inflationary process is a further reason to avoid an across-the-board fiscal impulse and the widespread use of automatic indexation clauses in expenditure items. This deindexation must be part of the incomes agreement that I shall turn to now.

(ii) An incomes agreement

Beyond the fiscal policy response, an incomes agreement between social partners in our country would help avoid a spiral of price and cost increases, which would only exacerbate the harmful effects stemming from the current inflationary episode and the war in Ukraine. In particular, under such an arrangement, firms and employees would agree to share the inevitable loss of income in the national economy that higher commodity import prices entail.

The asymmetric impact of the current shocks on employees, firms and sectors should be considered when determining the specific characteristics of this incomes agreement. Given this asymmetry, the necessary coordination at national level must be combined with mechanisms to adapt the agreement to the existing differences in productivity and activity across firms and sectors. Equally, where the standard of living of certain segments of households has been hit particularly hard by rising energy costs, the incomes agreement should seek to mitigate their straitened circumstances. In short, these considerations suggest that a potential incomes agreement should avoid overly sweeping measures that might prove too rigid for certain groups of agents.

It would also be desirable to avoid arrangements that automatically link wages to past inflation or indexation clauses. The aim is precisely to reduce the risk of triggering a wage-price feedback loop. In addition, the incomes agreement should include multi-year commitments relating to both wage increases – where the nominal benchmarks for wage bargaining should exclude components associated with energy products and should be based on the projected trend in underlying inflation – and to job protection. Likewise, these wage guidelines should be accompanied by explicit profit margin moderation commitments.

(iii) Monetary policy

In response to the current strong inflationary pressures, the central banks of the main developed economies have moved towards monetary policy normalisation.

Indeed, inflation in the euro area reached 7.5% in April, the highest figure in the history of the monetary union. Although the bulk of this increase has owed to the upturn in the price of energy and, to a lesser extent, food, underlying inflation has also risen noticeably.

According to the consensus macroeconomic projections, inflation will remain high over the coming months. However, in the absence of fresh inflationary stocks, it would then gradually ease towards levels consistent with the European Central Bank's (ECB) target of 2%. Indicators of medium and long-term inflation expectations also stand at around 2%.

However, the upside risks surrounding this outlook have increased. The escalating inflationary pressures in recent months drive up the likelihood of the indirect and second-round effects becoming more acute. Although these effects have not materialised significantly for the time being, there are signs, which will need to be monitored closely, that medium-term inflation expectations could be revised to above-target levels. By contrast, the war is having an adverse effect on economic growth of uncertain severity, which could reduce inflationary pressures in the medium term.

Against this background, the ECB has begun the process of monetary policy normalisation, starting from an extraordinarily accommodative position and under the framework of the new strategy approved by the Governing Council in 2021, which establishes a symmetric 2% inflation target over the medium term. The symmetry refers to the commitment to combat deviations both above and below the target. The medium-term orientation means that decisions will depend on inflation expectations over a two or three-year horizon.

This framework was expressed in the forward guidance, stating that the first interest rate increase would be conditional on expected inflation standing at 2% over an 18-month horizon and holding at 2% in the medium term, and developments in

underlying inflation being consistent with inflation stabilising at 2% in the medium term. Net purchases under the Asset Purchase Programme (APP) are also linked to these conditions, with the guidance stating that interest rates will only rise some time after the net purchases come to an end.

Given this strategy and in the current context, a gradual withdrawal of the extraordinary monetary stimulus is appropriate: inflation expectations over intermediate horizons and in the medium term stand at around 2%, underlying inflation is clearly above 2% and there are risks of upside deviations from the projections. One benchmark that could inform this normalisation process is the level of the natural interest rate, which is defined as the rate that maintains inflation stable at its target level. According to the estimates available, which are subject to much uncertainty, this interest rate is at low levels in the euro area, hovering around or slightly above 1%. This would suggest that, until such levels are reached, the monetary policy stance will continue to be expansionary.

Net purchases under the pandemic emergency purchase programme (PEPP) were discontinued in March 2022. In addition, at the Governing Council meeting in April we announced that net purchases under the APP would end in the third quarter of the year. In my view, given that the inflation outlook fulfils the conditions in our forward guidance, purchases under the APP should conclude in early Q3 so that the first interest rate increase can take place shortly after. Successive additional increases could follow over the subsequent quarters until, for example, levels consistent with the natural interest rate are reached, if the medium-term inflation outlook holds close to our target.

Against a particularly uncertain backdrop, we are emphasising that interest rate increases must be gradual. The aim is to avoid abrupt movements, which could be particularly harmful in the current context of heightened uncertainty. If this gradual approach is to be adopted, it is essential that inflation expectations remain anchored and that no indirect or second-round effects arise on a scale that could jeopardise such anchoring.

In addition, given that uncertainty, we have no pre-established guidelines for the normalisation. We will have to fine-tune the normalisation process based

on the incoming data. It should be borne in mind that the current uncertainty relates to aspects of such importance for future inflation as the course of the war, the clearing of the bottlenecks in production and international transport, the extent to which second-round effects materialise, globalisation dynamics and policies on energy and climate change mitigation.

We will act with total flexibility and adopt the measures needed to fulfil our mandate and contribute to safeguarding financial stability. Along the path to a more neutral interest rate configuration, flexibility is particularly important to preventing the emergence of threats to the correct transmission of monetary policy throughout the euro area. The pandemic has shown that, under stressed conditions, flexibility in asset purchases helps to counter these threats more effectively. Within our mandate, this flexibility will remain a key element of our monetary policy.

(iv) European policies

European policies are playing an increasingly important role in contending with common shocks to the European Union (EU) economies as a whole. This was thrown into relief when the pandemic broke out and Next Generation EU (NGEU) – among other pan-European measures – was launched, making a very substantial volume of funds available to the Member States. More recently, the importance of European policies has also become clear as a result of Russia's invasion of Ukraine, to which, for example, the EU has responded collectively by imposing severe economic sanctions on Russia.

The growing significance of European policies – as a crucial factor in economic developments in the Member States – renders all the more important continuing to push on with the development of the European institutional framework. In this regard, prominent among the main initiatives that, in recent months, have aroused growing interest in the European institutional discussion are the EU's proposals to increase its autonomy of decision and action in the extremely important energy, technology and digital arenas. It is essential that, in these fields, the policies be designed and implemented so as to minimise the risk of fragmentation within the EU and of undesired distortions emerging. Thus, based on the experience gained with NGEU,

a common fiscal response to the challenges posed by the war in Ukraine would be desirable, including pooling the government spending needed to address its effects on the Member States' economies.

In addition, the European Commission is currently reviewing the European fiscal rule framework. It bears repeating that a fiscal rule framework that ensures the sustainability of public finances is absolutely necessary for the smooth functioning of the euro area. The fiscal discipline induced by a credible framework of rules is essential. The reform should align the framework with the structural economic transformations that have arisen since its creation, including the developments in long-term interest rates and the potential growth of the economies, which are fundamental determinants of debt sustainability. These developments, which have been uneven across countries, together with the high disparity of the Member States' current budgetary imbalances, would require rules that take a more individualised approach. The current framework also needs to be simplified, by, for example, establishing a rule for government expenditure growth that is anchored to the general government debt-to-GDP ratio. Its hitherto scant capacity to ensure that countries build up fiscal buffers in good times for use in crises must also be improved. This requires improving the design of the system of incentives governing compliance with fiscal rules and possibly strengthening the role of independent fiscal institutions such as AIReF.

Making headway in the expansion of the public and private risk-sharing channels in the EU is also essential. In this regard, we need a permanent macroeconomic stabilisation mechanism in the euro area that complements monetary policy. To do so, it needs sufficient resources and revenue-raising and borrowing capacity. Progress is also needed on the capital markets union agenda and in completing the banking union, specifically ending the current deadlock over its third pillar, a European Deposit Insurance Scheme with a risk-pooling component.

The Spanish economy: structural challenges and policies to address them

The Banco de España has detailed, in various reports, the main challenges that will influence the course of the Spanish economy over the years ahead.

Most of the challenges facing the Spanish economy clearly pre-date the pandemic. Examples here include the need to boost productivity growth, to correct dysfunctions in several goods and factor markets, to make public finances more sustainable and to address the challenges posed by population ageing, inequality and climate change. However, others are relatively new, such as the need to adapt to an accelerated digitalisation of economic activity and to the recent changes in globalisation dynamics.

In any event, the scale of the challenges and their close interrelatedness call for a comprehensive strategy of lasting and ambitious structural reforms. The Spanish economy's ability to follow a robust, sustained and inclusive growth path will hinge on the economic policy response to this set of challenges.

(i) The challenge of boosting job creation and strengthening employment stability

Among the challenges highlighted in Chapter 2 of this *Annual Report* is that of reducing the unemployment rate and temporary employment ratio, which have been persistently high in Spain in recent decades. Young people have been particularly affected, with their rate of involuntary part-time employment having grown since the global financial crisis.

Reducing this high employment instability is key, as it has adverse economic effects in many spheres. For example, employment instability affects the accumulation of workers' human capital and can thus have very persistent effects on their working lives. Furthermore, it also increases uncertainty over the future path of the incomes of the affected workers. This not only has consequences for spending decisions, but also for emotional well-being, the formation of new households and the birth rate.

In this setting, one of the main objectives of the labour market reform enacted in 2022 is to combat the high proportion of temporary employment. Since its approval, permanent hiring has quickened significantly and temporary hires have slowed. It is, however, still too early to assess the impact of the labour market reform, and any such evaluation will have to consider multiple issues.

Notable among them is the impact on employment because, in principle, the reduction in temporary contracts might stem from both temporary employment being replaced by permanent employment and from the destruction of temporary jobs. Answering this question will require an extensive period in which to analyse job creation and destruction dynamics.

(ii) The challenge of training and increasing human capital

Increasing the educational attainment level of workers and employers is also crucial to reducing structural unemployment, boosting productivity and fostering the creation of higher quality jobs. Tackling this challenge is especially important at the current juncture, given the confluence of an intense digitalisation of economic activity, marked population ageing and various factors that may require a profound cross-sectoral reallocation of activity.

In this regard, given the current changes in the demand for training, which are likely to intensify in the years ahead, the education system should be flexible and provide a decisive response. In addition, harnessing the opportunities of digitalisation calls for increasing the population's digital skills, especially in the case of the older generation, those with lower educational attainment levels and those on lower incomes.

Furthermore, a comprehensive retraining strategy throughout the life cycle is key in a setting in which society finds itself faced with marked population ageing and, at the same time, the need to extend people's working life.

Active labour market policies are also vital to limiting the loss of human capital stemming from job losses. It is thus important to design an active labour market policy system that is efficient and effective.

(iii) The challenge of addressing inequality

Levels of inequality in Spain were already high before the outbreak of the pandemic and, despite the key mitigating role played by public policy, they are likely to have

increased as a result of the health crisis. To reduce the adverse – economic and social – effects of high levels of inequality, public policy measures must be rolled out and continuously assessed across a wide range of areas. Examples here include labour market regulation and education policy, and also income and housing policies.

In particular, improving the educational attainment levels of the most disadvantaged groups is a highly effective means of boosting their income, levelling up job opportunities ex ante and enhancing the prospects of future generations.

As far as incomes policies are concerned, according to the findings of the assessments required by law, further adjustments must be made to the conditions governing eligibility for Spain's minimum income scheme, to ensure that this instrument can effectively fulfil its mission of eradicating extreme poverty while avoiding undesired effects.

Steps should also be taken to reduce the adverse effects of inequality in the area of housing affordability, which has tightened in recent years. In this respect, the draft Law on the right to housing seeks to ease such difficulties in accessing housing, which hit the young and lower-income households particularly hard. However, some of the measures envisaged, such as rent control, may not have the desired effect or may even have adverse effects in the medium term. Conversely, certain measures that could give a significant structural boost to the supply of rented housing, such as offering greater effective legal certainty to landlords, are absent.

(iv) The challenge of increasing firm size, facilitating cross-sector reallocation and fostering innovation

Another major challenge for the Spanish economy is the small size of businesses, which has a bearing on the country's low aggregate productivity. To tackle this challenge, it is essential to explore the various reasons why our business sector is so skewed towards small, low-productivity firms and to mitigate the effects.

For example, as part of a strategy to stimulate business growth, smaller firms should be helped to access a wider range of external sources of funding on more

advantageous conditions, while the policies in support of business innovation should be strengthened.

Another aspect where action would be desirable is the regulation of economic activity, an area that has increased in complexity in recent decades, with a potentially adverse impact on business dynamics and aggregate productivity.

Some recent initiatives in this area appear to be a step in the right direction, such as the draft Law on business start-ups and growth (which seeks to boost business start-ups and foster their expansion by improving regulations), removing barriers to economic activity, combating business defaults and providing financial support for business growth. Another is the reform of the Insolvency Law, which brings in significant changes to insolvency and pre-insolvency procedures and may help partially remedy the shortcomings of the current insolvency mechanisms. However, looking ahead, how well these new pieces of legislation are able to significantly mitigate the shortcomings observed in Spanish business dynamics in recent decades will need to be carefully assessed.

(v) The challenge of fully capitalising on the roll-out of the Next Generation EU (NGEU) programme

As highlighted in the Banco de España *Annual Report* 2020, one of the main challenges we face in the coming years is how to fully harness the possibilities offered by the NGEU programme to drive a profound structural transformation of our economy.

The short-term economic impact of the take-up of these funds in 2021 was smaller than that included in our macroeconomic projections. Nonetheless, a significant part of the expected economic growth for 2022 and for the next few years crucially hinges on the potential multiplier effect on activity of the use of the NGEU funds. In this respect, the rigorous selection of the investment projects to be funded under the NGEU programme is one of the factors that may have the greatest impact on maximising this impact and, therefore, the success of this mechanism in Spain.

There is also a very high degree of complementarity between the financing of investment projects, such as those envisaged under the NGEU programme, and the implementation of structural reforms. This is highlighted by a recent paper by the Banco de España, which illustrates how the impact of different combinations of reforms and investment projects on the Spanish economy's medium-term growth capacity could vary considerably. In particular, according to the findings of the paper, if a careful selection of NGEU projects is also accompanied by various structural reforms to ease the existing rigidities in the product and labour markets, thereby helping to reduce the structural unemployment rate and boost productivity, the potential growth rate of the Spanish economy could reach around 2% by the end of that decade, nearly 1 pp higher than under a scenario of no NGEU projects or structural reforms.

(vi) The fiscal consolidation challenge

Maintaining high levels of government debt over time is a considerable source of vulnerability for Spain and leaves less fiscal space in the event of possible future macro-financial shocks.

In this setting, the sustainability of Spanish public finances needs to be bolstered in the medium term. To this end, a multi-annual fiscal consolidation plan will have to be rigorously implemented, once the pandemic is over and the adverse economic effects of the war in Ukraine have diminished. Although the necessary fiscal adjustment should be carried out gradually, once the ongoing recovery trajectory of the Spanish economy is firmly established, the definition and early communication of this comprehensive plan – in which all tiers of general government should participate – would be desirable, as this would help boost confidence and certainty about Spanish economic policies. Such confidence is particularly important in the context of monetary policy normalisation and consequent tightening of financial conditions in which we find ourselves.

As part of this plan, general government expenditure policies must be subject to an exhaustive review, with two essential aims: to increase the efficiency of each budget item and to optimise the distribution of public expenditure between items in order to promote more robust and equitable economic growth.

Similarly, a comprehensive review of the Spanish tax system is needed to ensure that the different taxes meet their goals in the most efficient and most effective manner possible.

As regards the pension system, on the estimates available, which include the latest measures adopted in this area, fresh future actions will be needed on either the revenue or the expenditure side, or on both sides, to cater for the growth in pension expenditure stemming from population ageing.

In this respect, in recent years the Banco de España has been pointing to the need to strengthen the link between contributions made and benefits received – while ensuring a sufficient level for the most vulnerable households – and to launch a rigorous debate to address the level of benefits the system should provide and the question of how the revenue required to fund those benefits can be raised.

Moreover, the consequences of the reforms envisaged in terms of redistribution and intergenerational equity must be analysed, to ensure that any adjustments to the system do not fall disproportionately on specific population groups, such as the retired population or future cohorts of workers. The system should also be made more transparent and easier to plan for, to offer greater certainty to the population and facilitate decision-making as regards saving, work and retirement. In this respect, automatic adjustment mechanisms could possibly be introduced, to adapt certain pension system parameters to changes in demographic and economic dynamics.

(vii) The challenge of the fight against climate change and the green transition

The fight against climate change and the transition towards a more sustainable economy are, without doubt, the most significant challenges facing Spain.

As Chapter 4 of this *Annual Report* highlights, resolutely addressing this challenge will entail a profound structural change in our economic growth model that will have very important implications for almost all areas of activity. This transformational process will also foreseeably have a very unequal impact on Spain's different regions, industries, firms and households, and it may affect some more vulnerable households and firms more severely.

In this green transition, governments have a leading role to play. Essentially, through green taxation, the roll-out of compensatory measures to temporarily mitigate the transition costs for the most vulnerable groups, public investment and regulation of economic activity.

Once again, a comprehensive European response to address the global challenge of climate change would be more effective and more efficient. In particular, not only through tax coordination, but also through the creation of a common European financial instrument that facilitates the large-scale common investments needed to meet the net zero emission targets and dispel the climate-related risks, regardless of the fiscal space available in each country.

Naturally, both the financial system and central banks – each within their respective competences – also have a contribution to make to the green transition. In this respect, from the standpoint of the Eurosystem in general, and of the Banco de España in particular, one priority at present and in the more immediate future is to make headway, in conjunction with the financial system, in incorporating climate considerations into the operating frameworks of monetary policy, financial stability, supervision and regulation.

Banking sector challenges

Complementary to this *Annual Report,* our *Financial Stability Report* published in May analyses the situation of the Spanish banking sector in depth.

The sector is facing the shock caused by the Russian invasion of Ukraine, in a setting in which its resilience remains generally high, returns have recovered their pre-pandemic levels and lending has normalised.

Yet the war in Ukraine entails new risks to financial stability. Although Spanish banks have very little direct financial exposure to Russia and Ukraine, the indirect effects of the war may be significant. Particularly through its impact on households and firms, especially for those experiencing a slower or tardy recovery from the pandemic and whose solvency may now have worsened.

Thus, in the business sector, although the recovery in sales and the more moderate debt growth in 2021 have prompted an improvement in businesses' overall financial situation, on average this continues to be more vulnerable than before the pandemic. In the sectors hardest hit by the pandemic, the percentage of highly indebted firms[1] is 7 pp higher than in 2019.

In the case of households, the favourable course of the labour market and household income is also helping them to recover their economic-financial situation. In any event, in the top net wealth decile, although the debt-to-asset ratio has fallen, debts continue to be some 50% higher than asset values, indicating the extent of this group's financial vulnerability.

Against this backdrop, lending in Spain fell slightly in 2021. Firms' demand for credit was lower, as they faced lower liquidity needs than in 2020, but this was largely offset by stronger lending to households, especially in the loans for house purchase segment.

In turn, non-performing lending to the resident private sector fell by 5.4% in 2021, to €49.3 billion, a larger drop than in 2020 but well below those recorded in the pre-pandemic years. Despite this favourable NPL performance, there is still some latent credit portfolio deterioration. Loans with significant increase in credit risk since initial recognition (Stage 2 loans) continued to grow at high rates in late 2021 (by 14% year-on-year). Forborne loans also rose by 14% (compared with a fall of 9% in 2020), owing to the sharp growth in the non-financial corporate sector and among sole proprietors.

Vulnerability is highest among the sectors sensitive to the effects of the pandemic and to the rising energy costs; at December 2021, almost 24% of their loans were either non-performing or Stage 2 exposures. Indeed, credit exposures with some sign of impairment may be most vulnerable to the materialisation of risk in the present setting. Accordingly, careful monitoring is needed, together with early and correct recognition of potential losses.

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1 Firms are defined as being highly indebted if their ratio of net debt / (gross operating profit + financial revenue) is higher than 10 or if they have positive net financial debt and zero or negative earnings.

The Spanish banking sector's consolidated income improved substantially in 2021, following the poor 2020 figures. The main determinant of the improvement in ordinary income was the decline in impairment losses on financial assets. Moreover, the CET1 capital ratio held relatively steady in 2021, after increasing in 2020, so the health crisis has not lessened the banking sector's overall capacity to absorb unexpected losses.

The stress tests conducted by the Banco de España show that the banking sector maintains its correct aggregate resilience to the macro-financial risks identified in the present setting, albeit very unevenly across banks. Even so, there would be some capital charge under the most extreme scenarios. Accordingly, close monitoring of financial developments in the sector is required, together with prudent and forward-looking behaviour by the banks themselves.

These short and medium-term challenges must not allow us to overlook the need to address the structural challenges that the banking sector was already facing before the onset of the pandemic and the Russian invasion of Ukraine. In particular, the need for capacity adjustment, as well as the growing competition from technology firms and the potential negative effects associated with climate risks.

Lastly, crypto-assets, which are digital representations of value and rights based on distributed ledger technology, are an area of financial innovation that is growing fast. Despite their potential for offering lower transaction costs, greater interoperability and greater competition, and although they are still small and their degree of interconnectedness with the more traditional financial markets is still limited, their rapid development poses significant risks if it is not conducted safely within a regulatory framework that will mitigate the potential risks. These include market, liquidity, operational, reputational and, above all, conduct risks vis-à-vis users owing to the lack of transparency and regulation in this field. In short, an upscale in these markets could pose systemic risks.

Conclusions

A reminder, to conclude this foreword to the *Annual Report,* that the Spanish economy is immersed in a highly uncertain environment, the structural challenges

ahead are enormous, and that the fact that these challenges are closely interconnected signifies that a comprehensive strategy of ambitious and lasting reforms is required. Only a resolute economic policy response to the multiple short, medium and long-term challenges facing the Spanish economy will enable us to follow a robust and sustained growth path that offers opportunities for all in the coming years. This response must also be long-lasting and thus requires a broad political and social consensus. The new uncertainties generated by the war in Ukraine and the persistent uncertainties stemming from the pandemic – two absolutely extraordinary events – demand no less.

Pablo Hernández de Cos

Governor of the Banco de España

Foreword to the *Annual Report 2021.*

18 May 2022.

Annual Report: Digest

The firming of the economic recovery and the rise in inflation at the global and euro area levels

- The recovery in activity that began in the summer of 2020, after the most acute phase of the pandemic had passed, continued in 2021 and early 2022.
- However, the recovery was incomplete and is shrouded in uncertainty. In particular, economic activity has been held back by the successive waves of the pandemic, the emergence of disruptions in global supply chains, the sharp rise in inflation and, in 2022, the war in Ukraine.
- The economic revival has, moreover, been uneven across geographical areas and sectors. The notable cross-country differences in the extent to which pre-crisis GDP levels have been regained are largely explained by the productive system (in terms of the importance of the sectors most exposed to social interaction and to global supply chains), differential access to vaccines and the different capacity of economic policies to provide support.
- The United States exceeded pre-pandemic levels of activity in 2021 H1. However, in the euro area overall this did not happen until the end of the year. In the emerging market economies the economic recovery has generally been held back by the relative delay in the vaccination process.
- International goods trade, which had already surpassed pre-pandemic levels by end-2020, has performed somewhat differently across regions. It grew relatively modestly in the major advanced economies, where the industries most affected by global production chain disruptions account for a larger share of the productive system. In Europe, trade was also marked by the United Kingdom's exit from the single market.
- Since the beginning of 2021, the increase in commodity prices and the disruptions in supply chains have led to a surprisingly steep and persistent upturn in inflation across all geographical areas. The war in Ukraine has exacerbated these inflationary pressures, whose causes are analysed in Chapter 3 of this report.
- Expectations of a faster-than-anticipated withdrawal of monetary stimuli in response to the uptick in inflation and higher risk aversion following the outbreak of the war in Ukraine have tightened global financing conditions since the beginning of 2022, particularly in the emerging markets.

Positive and negative aspects of the recovery in Spain

- The Spanish economy's GDP grew by 5.1% in 2021 overall. Output continued to grow in 2022 Q1, albeit at a quarter-on-quarter rate of 0.3%, considerably slower than in 2021 Q4 (2.2%).
- That said, in 2022 Q1 economic activity in Spain stood 3.4 pp below the pre-pandemic level, while, in the euro area as a whole, GDP stood 0.4 pp above its pre-crisis level.
- From the standpoint of the components of demand, Spain's straggling recovery is attributable to services exports, private consumption and residential investment.
- From the sectoral standpoint, the gap between Spain and the rest of the euro area is mainly indicative of the Spanish economy's specialisation in the sectors hardest hit by the pandemic (particularly those relating to tourism). In addition, these sectors have performed less favourably in Spain than in the euro area as a whole.
- In any event, over the course of 2021 there was an intense shift in the strength of activity across sectors in Spain. In particular, activity in the hospitality and leisure sectors became more dynamic as vaccination enabled the pandemic containment measures to be lifted.
- In turn, supply difficulties affecting certain inputs and their rising cost moderated the recovery in industry and construction in 2021 H2.
- By demand component, household consumption recovered significantly, but not enough to return to pre-pandemic levels, against a backdrop of a declining, albeit still relatively high, saving rate.
- The relatively high growth of private productive investment was dampened by several factors, including the persistence of pandemic-related uncertainties, bottlenecks and rising energy costs.
- External demand contributed positively to GDP growth. Tourism exports recovered gradually but robustly as international travel restrictions were eased. By contrast, the momentum of goods trade flows was constrained by the bottlenecks.
- Public finances continued to show a considerable imbalance in 2021, although the deficit was reduced significantly. In particular, public expenditure growth moderated due to the reduction in pandemic-related outlays. Government receipts were more buoyant than suggested by developments in the macroeconomic variables proxying their tax bases.

Positive and negative aspects of the recovery in Spain (cont'd)

- The recovery in employment was particularly vigorous throughout 2021, albeit with notable differences across sectors. At the beginning of 2022 it has shown some incipient signs of waning.
- As in other geographical areas, consumer prices have accelerated sharply since the start of 2021. Most of the increase in inflation is attributable to higher energy prices but, more recently, the pace of inflation in the other components has also increased.
- In any event, the pass-through of the higher cost of inputs to non-energy prices has been incomplete to date.
- The war in Ukraine has further driven up energy prices and has exacerbated some of the distortions in global value chains. This could lead to inflation becoming more persistent, with the ensuing risk of the emergence of the price-wage feedback loop known as second-round effects.
- Financing conditions, which remained comfortable throughout 2021, began tightening in the early months of this year.

The Spanish economy amid uncertainties

- The direct effects of the war in Ukraine on Spanish foreign trade should be moderate, given the likewise small size of the bilateral trade flows with Russia and Ukraine.
- However, the indirect effects will foreseeably be significant.
- Specifically, the war will adversely affect activity in Spain through an additional increase in commodity prices (with the added risk of the supply of one or more of these inputs being interrupted), its impact on the confidence of households and firms, the impairment of world trade and a tightening of financing conditions.
- Accordingly, the war can be expected to delay the gradual recovery that was under way in the Spanish economy.
- The Banco de España's latest projections, of April 2022, envisage GDP growth of 4.5% in 2022 and inflation of 7.5% in annual average terms.
- The information that became available after the publication of these projections, which includes lower-than-expected GDP growth in Q1, would, in the absence of any additional considerations, point to a downward revision of the GDP growth rate expected for this year overall. Moreover, on the price side, the new data point to sharper increases in the non-energy component than envisaged in the April projections.
- In any event, the outlook for the Spanish economy – and for our European peers – in the coming quarters is subject to extraordinary uncertainty, affected by a very broad range of macro-financial, geopolitical and health aspects of varying severity.

Economic policies

- Economic policies continued to provide very considerable support to activity in 2021, both globally and in Spain. Yet the persistence and intensification of the upsurge in inflation meant that, over the course of last year, some of these economic policies began shifting towards normalisation.
- Against this background, in recent months the European Central Bank has been moving in the direction of monetary policy normalisation, emphasising that, in an extraordinarily uncertain setting and provided that euro area medium-term inflation expectations remain anchored around its 2% target, its monetary policy response will depend on the performance of economic indicators, in addition to being gradual and maintaining all the optionality and flexibility provided by its various instruments.
- At the domestic level, the furlough schemes and the ICO guarantee facilities have been effective in promoting the return to work and mitigating the impact that restrictions on activity had on firms' liquidity. The direct assistance scheme for SMEs seems to have contributed to reducing a small part of the solvency problems faced by these firms as a result of the health crisis.
- Following the outbreak of the war, fiscal policy must once again seek to minimise the adverse economic and social effects of a damaging, exogenous shock. In any event, it is imperative that the measures deployed in this connection to support households and firms be targeted at the most vulnerable groups and be temporary.
- Beyond the fiscal policy response, an incomes agreement between social partners in our country would help avoid a spiral of price and cost increases, which would only exacerbate the harmful effects of the current inflationary episode and the war in Ukraine. In particular, under such an arrangement, firms and employees would agree to share the inevitable loss of income in the national economy that higher commodity import prices entail.

THE SPANISH ECONOMY: BETWEEN OVERCOMING THE PANDEMIC AND THE UNCERTAINTY CAUSED BY THE WAR IN UKRAINE

	KEY DEVELOPMENTS	ECONOMIC POLICIES
2021 H1	Economic activity in Spain was influenced by epidemiological developments and the measures to contain the disease, which hindered its recovery, particularly in the services sector. Progress in the vaccination campaign raised hopes that the health crisis would be overcome and, therefore, that a more vigorous recovery in activity would be seen in the second half of the year, underpinned by favourable employment developments.	Monetary and fiscal policies provided crucial support to activity in the face of fresh waves of the pandemic, although the vaccine roll-out raised the prospect of their progressive normalisation.
2021 H2	The lifting of the containment measures was conducive to the sectoral shift of activity towards services. However, the supply chain disruptions and rising commodity prices, particularly of energy commodities, hampered the recovery in manufacturing. Uncertainty over the duration of the inflationary pressures and the bottlenecks, together with the new variant of the virus, threatened the recovery path in the final stages of the year. By contrast, expectations of a possible release of the built-up savings and of the rollout of NGEU funds suggested activity would be buttressed somewhat.	The process of monetary policy normalisation began, due to the increase in inflation, although the broadly expansionary stance remained.
2022 Q1	The recovery regained momentum in the initial weeks of the year thanks to the improving epidemiological situation and some timid signs of the bottlenecks clearing. However, the invasion of Ukraine has entailed, though various channels, a new shock to economic activity and prices: a fresh rise in commodity prices, private agents losing confidence and a slowdown in international trade. The war has generated considerable uncertainty, with risks to the downside for activity and to the upside for inflation.	Monetary policy must be guided by the price stability mandate and not overreact to developments in the more volatile components. Fiscal policy must mitigate the adverse effects of the new shock, but selectively given its scant room for manoeuvre (particularly in Spain). An incomes agreement would be highly desirable.

SOURCE: Banco de España.

A broad range of structural challenges and policies to address them

- In this extraordinarily uncertain time, the performance of activity in Spain over the coming quarters will be chiefly determined by overcoming the COVID-19 health crisis, how the war in Ukraine unfolds and the degree of persistence of the current inflationary episode.
- However, over a longer time horizon, the outlook for the Spanish economy will be shaped by a set of tremendous structural challenges.
- This chapter presents the main structural challenges facing the Spanish economy over the years ahead and some of the economic policy levers available for tackling them.
- The Spanish economy's ability to follow a robust, sustainable and inclusive growth path in the medium and long term will hinge on the economic policy response to this set of challenges.
- In this respect, the scale of these challenges and their close interrelatedness call for a comprehensive strategy of lasting and ambitious structural reforms.

The challenge of boosting job creation and strengthening employment stability

- In recent decades, Spain's unemployment rate and temporary employment ratio have, on a persistent basis, been significantly higher than the average of the euro area economies.
- Young people have been particularly affected, with their rate of part-time employment having grown since the global financial crisis.
- High instability affects the accumulation of workers' human capital and can thus have very persistent effects on their working lives.
- Employment instability also affects uncertainty over future income. Greater uncertainty has direct consequences for spending decisions, but also for emotional well-being, the formation of new households and the birth rate.
- In a setting like the present one, in which new forms of employment are emerging, it is even more important to address the challenges posed by employment instability, such as the challenge posed by digital commerce platforms. Although these new forms of employment have developed relatively quickly, very little is as yet known about their relative importance or their implications.
- One of the main objectives of the labour market reform enacted in 2022 is to combat the high proportion of temporary employment.
- In recent months, permanent hiring has quickened significantly, and temporary hires have decreased. It is, however, early to assess the impact of the labour market reform, and any such evaluation will have to consider numerous issues.
- Notable among them is the impact on employment because, in principle, the reduction in temporary contracts might stem from both temporary employment being replaced by permanent employment and from the destruction of temporary jobs. Answering this question will require an extensive period over which to analyse job creation and destruction dynamics.

The challenge of training and increasing human capital

- Increasing the educational attainment level of workers and employers is crucial to reducing the level of structural unemployment, boosting productivity and fostering the creation of higher quality jobs.
- The education system should be adapted to provide a decisive response to the current changes in the demand for training, which are likely to intensify in the years ahead.
- Harnessing the opportunities of digitalisation calls for increasing the population's digital skills, especially in the case of the older generation, those with lower education attainment levels and those on lower incomes.
- A comprehensive skill recycling strategy throughout the life cycle is key in a setting in which society finds itself faced with marked population ageing and, at the same time, the need to extend people's working life.
- Active labour market policies are also vital for limiting the loss of human capital stemming from job losses. It is important to design an active labour market policy system that is efficient and effective.

COMPREHENSIVE STRUCTURAL REFORM STRATEGY

SOURCE: Banco de España.

The challenge of addressing inequality

- Levels of inequality in the Spanish economy were already high before the outbreak of the pandemic and, despite the key mitigating role played by public policy, are likely to have increased as a result of the health crisis.
- To reduce the adverse (economic and social) effects of high levels of inequality, public policy measures must be rolled out and continuously assessed across a wide range of areas.
- Improving the educational attainment levels of the most disadvantaged groups is a highly effective means of boosting their income, levelling up job opportunities ex ante and enhancing the prospects of future generations.

The challenge of addressing inequality (con'd)

- As far as incomes policies are concerned, further adjustments must be made to the conditions governing eligibility for Spain's minimum income scheme (MIS) to ensure that this instrument can effectively fulfil its mission: to eradicate extreme poverty.
- Steps should also be taken to reduce the adverse effects of inequality in the area of housing affordability, which has tightened in recent years, for both home ownership and rentals.
- The Draft Law on the right to housing seeks to ease such difficulties in accessing housing, which hit the young and lower-income households particularly hard.
- However, this draft Law overlooks certain measures that could give a significant structural boost to the supply of rented accommodation.

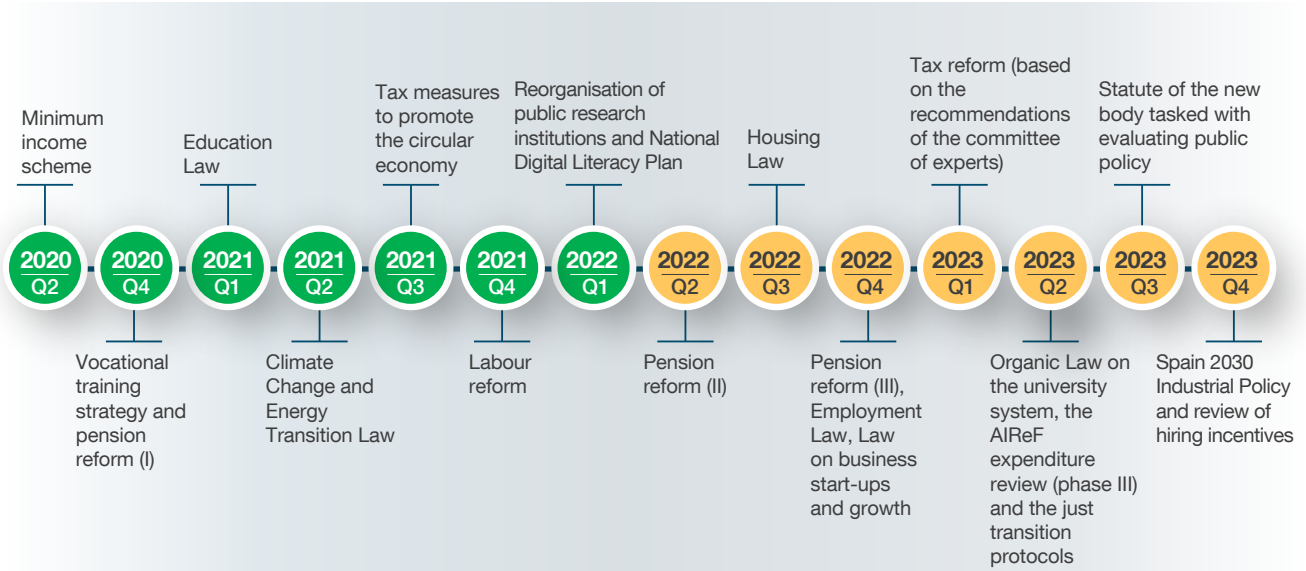
The challenge of increasing firm size and of facilitating cross-sector reallocation

- The small size of Spain's businesses is one reason behind the country's low aggregate productivity.
- It is essential to explore the various reasons why the Spanish business sector is so skewed towards small, low-productivity firms and to mitigate the effects.
- Many of the initiatives that could be rolled out to foster business growth would also facilitate innovation and the processes to reallocate activity across sectors and firms that the Spanish economy will in all likelihood have to face in the coming years.
- One aspect requiring action is the regulation of economic activity, an area that has increased in complexity in recent decades, with a potentially adverse impact on business dynamics and aggregate productivity.
- The Draft Law on business start-ups and growth and the Draft Law on developing the ecosystem of emerging businesses represent a step forward in boosting business start-ups and fostering their expansion by improving regulations, removing barriers to economic activity, combating business defaults and providing financial support for business growth.
- Meanwhile, the reform of the Insolvency Law brings in significant changes to insolvency and pre-insolvency procedures and may help partially remedy the shortcomings of the current insolvency mechanisms. Nonetheless, the extent to which some of the new procedures will be effective is unclear.

The challenge of fully capitalising on the roll-out of the Next Generation EU programme

- The rigorous selection of the investment projects to be funded under the NGEU programme is one of the factors that may most influence the success of this mechanism in Spain.
- Some possible improvements to the design of public tenders in a bid to fully harness the transformational impact of the NGEU programme have been proposed by the Banco de España.
- In particular, as part of the criteria for assessing the merits of bids, preference could be given, among solvent, equally productive projects, to those of businesses that find it hardest to access external finance, since some recent studies suggest that this would generate a larger multiplier effect.
- There is a very high degree of complementarity between the financing of investment projects, such as those envisaged in the NGEU programme, and the implementation of structural reforms.
- A recent paper by the Banco de España illustrates how the impact of different combinations of reforms and investment projects associated with the NGEU programme on the Spanish economy's growth capacity in the medium term could vary considerably.

MAIN ACTIONS PROPOSED IN THE SPANISH RECOVERY, TRANSFORMATION AND RESILIENCE PLAN (a)



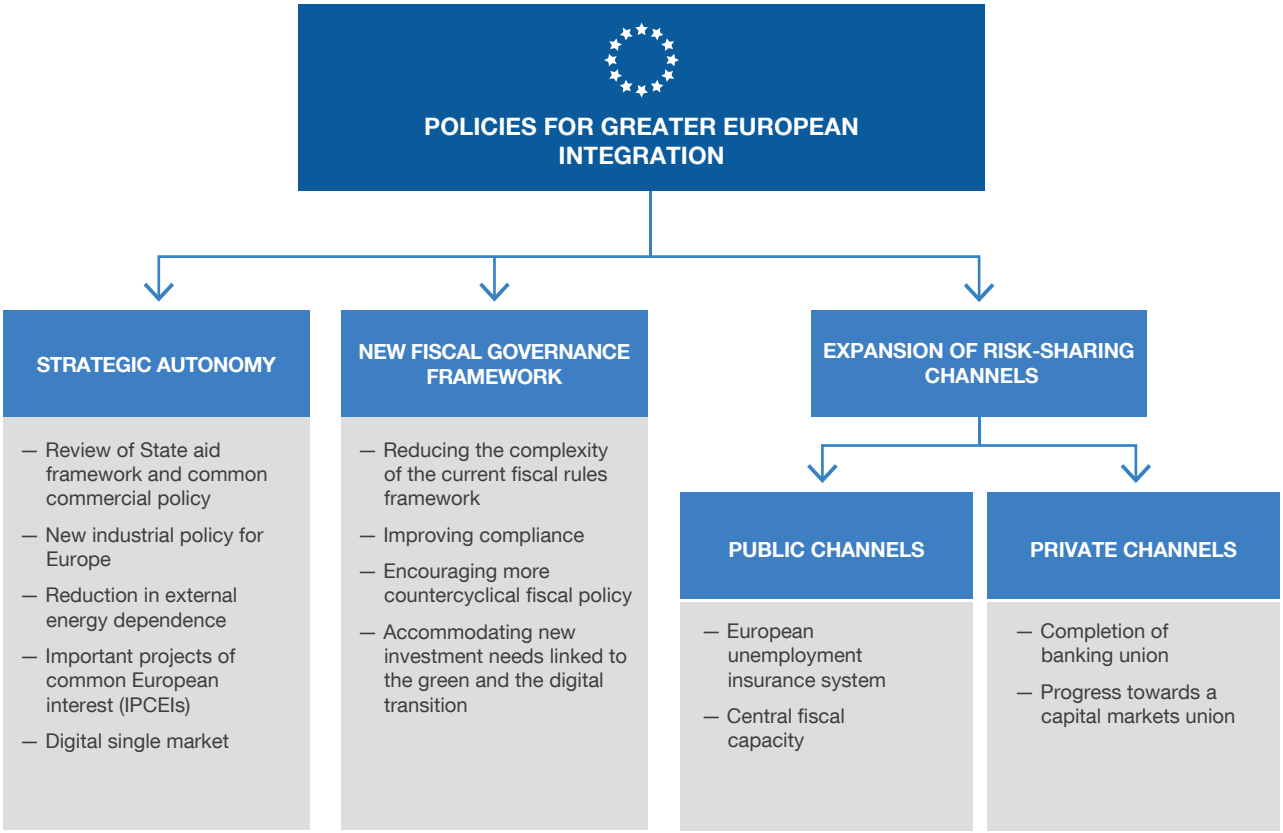
SOURCE: Banco de España, drawing on the Recovery and Resilience Facility Operational arrangements between the European Commission and Spain.

a Reforms already completed are in green, while pending reforms are in yellow.

The fiscal consolidation challenge

- The necessary and resolute response of fiscal policy to the COVID-19 crisis gave rise to a substantial deterioration in public finances in 2020.
- The general government budget balance improved in 2021, albeit largely owing to the cyclical performance of activity. Accordingly, from a structural standpoint, public finances remain highly vulnerable.
- To bolster the sustainability of Spanish public finances, a multiannual fiscal consolidation plan will have to be rigorously implemented, once the pandemic is over and the adverse economic effects of the war in Ukraine have diminished.
- General government expenditure policies must be subject to an exhaustive review, with two essential aims: to increase the efficiency of each budget item and to optimise the distribution of public expenditure between items in order to promote more robust and equitable economic growth.
- Education and public investment expenditure, two budget items that are essential to drive economic growth and reduce inequality, account for a lower share of Spain's general government accounts than that observed in the European Union overall.
- As regards the pension system, on the estimates available, which include the latest measures adopted in this area, fresh future actions will be needed on either the revenue or the expenditure side, or on both sides, to cater for the growth in pension expenditure stemming from population ageing.
- On the revenue side, a comprehensive review of the Spanish tax system is needed to assess whether, overall, the different taxes meet their goals in the most efficient and most effective manner possible.
- The academic literature suggests that shifting the burden of taxation from income to consumption yields potential efficiency and equity gains.
- Any reorganisation of the Spanish tax structure should include a review of the tax cost associated with the consumption tax relief measures.
- The ambitious environmental goals assumed by Spain point to the need to introduce new tax measures in energy, hydrocarbons and transport.
- Moreover, the growing digitalisation and globalisation of economic activity require greater international coordination and harmonisation of the tax system.
- The White Paper for the Reform of the Tax System, published in March, presents a diagnosis of the Spanish tax system and proposes a raft of measures for a future reform of the system.

EUROPEAN POLICIES



SOURCE: Banco de España.

The role of European policies

- European policies are playing an increasingly important role in addressing shocks that affect the EU economies overall, such as the pandemic and, more recently, the war in Ukraine.
- The growing importance of European policies – as an essential factor in Member States' economic activity – means that it is now more important than ever to continue making firm progress to strengthen the European institutional framework.
- Recent trade and geopolitical developments have increased the relevance of the EU's open strategic autonomy agenda. Policies in this area need to be designed and implemented so as to minimise the risk of fragmentation within the EU and undesired distortions.
- The European Commission is currently reviewing the European fiscal rule framework.
- This reform should take into account the magnitude and disparity of the Member States' current budgetary imbalances, which could require a more individualised approach and a reconsideration of the government debt levels that serve to anchor the SGP in the medium term.
- The new European fiscal governance framework should be completed with a number of elements to expand the risk-sharing channels, enabling the risk of financial fragmentation to be reduced and new common investment needs to be financed.
- In addition to expanding public risk-sharing channels, risk pooling among private agents needs to be fostered. To this end, the financial architecture of the European and Monetary Union needs to be completed. In particular, progress is needed on the capital markets union agenda and the banking union must be completed.

The rise in inflation

- Since early 2021 inflation has trended upwards globally and has recently reached rates not seen for several decades.
- Various factors lie behind this surge in inflation. While global factors are prominent among them, some more idiosyncratic reasons explain why this episode is particularly uneven across the world's major economies.
- Although the increase in energy prices is a key factor in the recent surge in inflation rates in the advanced economies, in recent months the price increase has gradually spread to other goods and services and has been reflected in agents' medium and long-term inflation expectations.
- The potential materialisation of indirect effects (whereby higher energy costs are ultimately passed through to the price of other goods and services) and of second-round effects (whereby a rise in inflation leads to greater wage increases, which in turn are fed through to product prices) might lead the current inflationary episode to persist.
- Beyond the adverse impact that this episode has already had on the main macroeconomic variables, it is having a very uneven impact on different types of Spanish households and firms.

Global factors

- The current inflationary pressures are primarily due to the increase in commodity prices and the fact that demand in the major world economies (underpinned by highly expansionary monetary and fiscal policies) has recovered more strongly from the impact of the COVID-19 pandemic than supply (affected, among other factors, by global value chain bottlenecks).
- More recently, geopolitical tensions deriving from the Russian invasion of Ukraine at end-February are contributing to a further rise in commodity prices, particularly energy and food prices.
- Quantitatively, it is estimated that, in recent quarters, rising commodity prices have been the main factor behind the increase in prices. In any event, the vigorous recovery in demand has also played a very important role in these inflation dynamics, especially in the United States, while bottlenecks have had a particularly acute impact on inflation in the euro area.

Idiosyncratic factors

- Despite the eminently global nature of the drivers of the inflationary episode, its impact is proving uneven across the main advanced economies, depending on various factors.
- Specifically, once the most severe phase of the pandemic was over, demand recovered particularly vigorously in the United States. This has resulted in stronger and earlier underlying inflationary pressures there.
- By contrast, the increase in energy prices is hitting the euro area - especially Spain - harder. This is largely due to the greater share of fuels and electricity in these economies' consumption baskets and also to the depreciation of the euro over recent months.

The spread of inflationary pressures

- While energy and food continue to explain most of the current inflation rates, in recent quarters the rise in prices has gradually spread to other consumer items.
- Specifically, the proportion of the items in euro area households' typical consumption basket with inflation rates of over 2% has risen from somewhat less than 30% in June 2021 to 80% in March 2022. In the same period this percentage has increased from 25% to 65% in the Spanish economy.
- Medium and long-term inflation expectations have also risen. This increase has been sharper in the United States than in the euro area, where in April 2022 inflation expectations remained anchored to the ECB's medium-term inflation target of 2%.

Determinants of the inflationary episode's persistence

- After the persistent upward surprises to price dynamics over the course of 2021, the war in Ukraine has triggered a further upward revision to the short-term inflation forecasts.
- Despite these stronger inflationary pressures in the short term, analysts continue to expect that inflation rates will ease in the medium term. In any event, these forecasts are subject to considerable uncertainty.
- Undoubtedly, price dynamics in coming quarters will hinge decisively on the magnitude and the persistence of the disruptions that the war in Ukraine may entail for economic activity, commodity prices and global production chain bottlenecks overall.

Determinants of the inflationary episode's persistence (cont'd)	• However, other factors may also significantly determine the persistence of the current inflationary episode. Particularly prominent among these factors are the indirect and second-round effects on inflation that may stem from the latest price increases and the economic policy response.
Indirect and second-round effects on inflation	• The rises that have already been observed in the prices of many goods and services could trigger further inflationary pressures in the future via indirect effects. • How long the price dynamics persist will also depend on the intensity of the potential second-round effects. • The longer persistence of the inflationary shock makes it more likely that second-round effects will materialise. These second-round effects would be likelier to emerge and more acute were the medium-term inflation expectations to become de-anchored.
The role of an incomes agreement	• The current inflationary episode amounts to an adverse shock to the terms of trade of Spain and the main euro area countries, which are net importers of energy and other commodities. • Against this background, it is vital that significant indirect and second-round effects be avoided, given that an adverse shock to terms of trade has a greater impact on GDP and employment when such effects materialise. • In Spain, an incomes agreement between social partners would help avoid a spiral of price and cost increases, which would only exacerbate the harmful effects of the current shock. • The asymmetric impact of the current shocks on workers, firms and sectors must be considered when determining the specific features of this incomes agreement. It would also be desirable to avoid arrangements that automatically link wages to past inflation or indexation clauses. • The incomes agreement should likewise include multi-year commitments relating both to wage increases and to job protection. In addition, these wage guidelines should be accompanied by explicit profit margin moderation commitments.
The response of other economic policies	• The fiscal policy response is key to mitigating the effects of the current adverse shock on the hardest-hit households and firms, while simultaneously preventing its persistence over the medium term. • With this dual aim, the fiscal policy response should focus on temporary compensation measures targeting the most vulnerable households and firms. • Meanwhile, central banks must continue the process of normalising their monetary policy and avoid a de-anchoring of inflation expectations from their target over the medium term. • In the current extraordinarily uncertain setting, the ECB has emphasised that its monetary policy response will depend on the performance of economic indicators, in addition to being gradual – provided that euro area medium-term inflation expectations remain anchored around its 2% target – and maintaining all the optionality and flexibility provided by its various instruments.
The uneven impact of rising inflation on Spanish households ...	• The increase in prices affects households differently depending on, among other aspects, household structure, age, education, income and net financial position. • The inflation rate in recent months for lower-income households (bottom quartile) is estimated to be 1.2 pp higher than for higher-income households (top quartile). This owes to staple goods (food, electricity, gas and other fuels), whose prices have recently risen comparatively more sharply, accounting for a larger share of the former's consumption basket. • Households where the reference person was older than 65 faced inflation 1 pp higher than the rest. This gap is mainly due to the higher inflation experienced by the lower-income households within this group. • Some of the measures approved in recent months would have an impact on these distributional effects of inflation.

... and firms

- The impact of the inflationary episode is also highly uneven across sectors, depending mainly on how energy-intensive they are.
- The impact of higher energy prices on firms' costs is also magnified by sectoral linkages.
- According to the simulations conducted by the Banco de España, the most affected sectors in the Spanish economy would be air transport, land transport, basic metals and shipping.
- These developments will foreseeably lead to a deterioration of some firms' economic and financial situation. In particular, according to Banco de España estimates, in 2022 the share in employment of firms with negative profitability would rise by more than 3 pp. However, this increase would stand at more than 6 pp in several sectors of activity.
- In addition, within each sector, smaller firms are relatively more reliant on energy inputs, making them more vulnerable to the current inflationary pressures.

INFLATION: STRUCTURAL DETERMINANTS BEFORE AND AFTER THE PANDEMIC

THE MAIN STRUCTURAL FACTORS THAT COULD SHAPE PRICE DYNAMICS...

IN RECENT DECADES BEFORE THE PANDEMIC BROKE OUT...			IN THE YEARS AHEAD			
Population ageing in developed economies	Digitalisation of activity	Globalisation of activity	Population ageing in a more advanced phase and in emerging market economies	Accelerated digitalisation of activity	Possible reshoring of activity	Green transition

...ALBEIT WITH A HIGHLY UNCERTAIN QUANTITATIVE AND QUALITATIVE IMPACT

In all of these factors, certain aspects entail greater inflationary pressures, while others have the opposite impact

— For example, digitalisation could increase productivity (and exert downside pressure on prices), but could also cause structural changes in markets that result in certain firms enjoying wider margins

A distinction should be drawn between impacts on relative prices and impacts on the aggregate inflation rate

— For example, the household consumption basket changes with age, which causes relative prices to shift. At the same time, the saving rate is higher in an ageing society, which exerts downside pressure on the inflation rate

A distinction should also be drawn between short-term impacts and long-term impacts

— For example, the fight against global warming could generate strong inflationary pressure during the transition process, but these could ease significantly in the medium and long term once a green technological change materialises and renewables become more efficient

SOURCE: Banco de España.

A global challenge with an extraordinarily uncertain economic impact

- The fight against climate change and the transition towards a more sustainable economy is one of the most important challenges facing Spain.
- The assessment of the economic impact of the various physical and transition risks associated with climate change is subject to enormous uncertainty.
- Nevertheless, there seems to be a certain consensus as to the high costs of not adjusting the current path of GHG emissions and the advantages of an orderly adjustment.
- In view of the magnitude of the climate challenge, all economic policies and agents need to contribute very actively to the green transition.
- Further progress in the fight against global warming will require greater international coordination, while taking into account the specific development conditions of each country.
- Having more high-quality harmonised environmental information is vital if the public policies that will pave the way for the green transition are to be designed correctly. Yet it is also essential for the financial system, to enable investors, credit institutions and central banks to adequately assess both their and other economic agents' exposure to the different climate-related physical and transition risks.

The asymmetric impact of climate change in Spain

- There is consensus among the scientific community that the Iberian Peninsula could be significantly affected by the physical risks associated with climate change, and that this impact would be highly uneven across regions.
- In recent years, similarly to other European economies, Spain has made very significant commitments on the environment.
- Meeting the proposed targets will be an enormous transformational challenge for the Spanish economy overall in the coming years.
- However, beyond the aggregate economic effects that may stem from the fight against climate change, this process will foreseeably have a very uneven impact across regions, sectors, businesses and households.
- In particular, there is evidence to suggest that the physical and transition risks linked to global warming may precisely affect some of the most vulnerable households and firms more severely.

THE ASYMMETRIC IMPACT IN SPAIN OF THE PHYSICAL AND TRANSITION RISKS ASSOCIATED WITH COMBATING GLOBAL WARMING

The Iberian Peninsula could be significantly affected by the physical risks linked to climate change:

— This impact would be highly uneven across regions.

— For example, lower rainfall in the southern part and greater water stress in the south east.

The impact of the green transition will be very uneven at sectoral level:

— Manufacturing, agriculture, transport and electricity and gas supply are the most GHG emitting productive activities in Spain.

— That said, the exposure of a particular sector to climate change does not only depend on its direct GHG emissions but also on its energy intensity and its links to other sectors.

Climate change and the green transition will affect different types of firms unevenly:

— Within each sector, smaller firms seem to be less prepared for climate challenges; many of them have still not assessed the impact these challenges may have on them.

— Among the main risks associated with the green transition identified by firms, higher inflationary pressures and greater administrative burdens (linked to new disclosure requirements) stand out.

The impact of the physical and transition risks may vary considerably from one person to another:

— The foreseeable increase in the prices of more polluting goods and services over the coming years will probably have a greater impact on lower-income households, those whose household reference person is aged 35-45, those residing in rural areas, those with a lower level of education and larger households.

— It would be desirable for public policies to have mechanisms to compensate, temporarily, the most vulnerable households in each of these groups.

SOURCE: Banco de España.

Governments must lead the green transition

- Governments have a leading role to play in the green transition, as they have the necessary democratic legitimacy to establish the roadmap and also the most suitable set of instruments to achieve the proposed climate targets.
- Green taxation is the most efficient means of ensuring that economic agents internalise the climate-related consequences of their decisions. In this respect, green taxes in Spain, which consistently raise a lower share of revenue than in the group of EU economies, must be strengthened and their design improved.
- If used efficiently, the revenue raised by higher environmental taxes could significantly reduce the transition costs for the economy overall.
- Public investment and subsidies to encourage private investment are also key levers for driving the green transition. In this respect, fully harnessing the transformational capacity of the NGEU programme in Spain is vital, with a rigorous selection of the investment projects to be funded and roll-out of an ambitious structural reform package.
- Compensatory measures must be deployed to ease the markedly asymmetric impact of the green transition on different types of industries, firms and households. These measures should be essentially temporary, concentrated on the most vulnerable and hardest hit groups, and should be designed so as not to undermine the incentives to reduce pollutant emissions.
- Meeting the environmental targets proposed without wasting resources, and avoiding any unwanted effects on activity, calls for the ongoing assessment of public policies.
- Moreover, in the midst of such an extraordinarily uncertain structural transformation process, it is essential that public policies provide certainty to the different economic agents, while facilitating a stable operational framework within which they can make their consumption, investment and production-related decisions with every assurance.

The financial system also has a key role to play in the climate challenge

- Without the active involvement of the financial system, it will be impossible to efficiently channel the large volume of funds needed to develop new green technologies and to enable households and firms to adopt them across the board.
- All financial system and capital market participants must be able to accurately identify the extent to which they and the other economic agents are exposed to the various physical and transition risks associated with climate change, and to actively factor such information into their risk management.
- Looking ahead, the continued progress of sustainable finance will critically depend on improvements to the information available, on the headway made in defining international standards and on the ex post verification of the commitments undertaken by the issuers of sustainable instruments.

Central banks – within their mandates – must also contribute to the green transition

- Climate change and the transition to a more sustainable economy are also a considerable challenge for central banks.
- These processes of structural change could significantly affect monetary policy conduct, pose considerable risks to financial stability and call for a resolute response in terms of both banking regulation and prudential supervision.
- Accordingly, although this process is at an admittedly incipient stage, the world's main central banks have begun to factor in climate change and green transition-related considerations when determining and implementing their monetary policy.
- In the financial stability arena, stress tests for adverse weather events have recently begun in collaboration with credit institutions. In this respect, the Banco de España's top-down analysis shows that climate risks will have a moderate impact on the Spanish banking sector in the short term.
- Also, in the area of regulation and prudential supervision, work is under way to ensure that credit institutions are ready to identify, measure, manage and properly report the financial risks associated with climate change, thus contributing to the green transition.

THE ROLE OF KEY ACTORS IN THE FACE OF THE CLIMATE CHALLENGE...

GOVERNMENTS

- Increasing green taxation and boosting public investment
- Deploying compensatory measures to mitigate adverse effects on the most vulnerable groups
- Setting environmental standards to enhance the regulation of economic activity
- Providing economic agents with certainty and a stable operational framework

FINANCIAL SECTOR

- Efficiently channelling the enormous volume of funds that needs to be invested in the green transition
- Properly assessing its own and other economic agents' exposure to climate risks
- Developing and harmonising new financial instruments

CENTRAL BANKS

- Incorporating climate considerations into their monetary policy operational frameworks
- Monitoring the risks to financial stability posed by climate change and the green transition
- Enhancing the regulation and prudential supervision of climate risks

... IN A CONTEXT IN WHICH...

Extraordinary uncertainty surrounds the economic impact of climate risks

Achieving a high degree of international coordination is necessary

Increasing the quantity, quality and harmonisation of environmental information is essential

Reviewing public policies continuously and rigorously is more important than ever

SOURCE: Banco de España.

1

AN INCOMPLETE RECOVERY AMID UNCERTAINTY: FROM THE PANDEMIC TO THE RISE IN INFLATION AND THE OUTBREAK OF WAR

AN INCOMPLETE RECOVERY AMID UNCERTAINTY: FROM THE PANDEMIC TO THE RISE IN INFLATION AND THE OUTBREAK OF WAR

1 Introduction

The supply chain disruptions, the pick-up in inflation and, in 2022, the war in Ukraine have hampered the global economic recovery that followed the most acute phase of the pandemic. In the last two years, events on various levels with an impact on global economic activity have successively unfolded at a rapid pace. The restrictions on movement and contact, introduced to contain the pandemic, gave rise to a steep decline in activity in the spring of 2020 without precedent in recent history. The gradual lifting of those measures allowed a progressive recovery to begin in the summer of that year which was, nevertheless, stymied over the course of 2021 by a number of factors. These include the rise in the price of numerous commodities (mainly energy commodities) and the emergence of disruptions in global supply chains (bottlenecks), which have fuelled a sustained and sharp upturn in inflationary pressures. The Russian aggression against Ukraine in February 2022 has cast a dark shadow over the economic outlook and exacerbated price pressures in an environment marked by unusually high levels of uncertainty.

The gradual path of recovery of activity throughout 2021 was, in any event, highly uneven across geographical areas and sectors of activity. In the advanced economies, the swift roll-out of vaccines made it possible to cope with the successive waves of COVID-19 using only targeted restrictions rather than having to reintroduce pandemic containment measures with more adverse effects on economic activity. This gradual improvement in the epidemiological situation, together with the effectiveness of economic policies, has allowed many of these countries to reach their pre-crisis output levels. By contrast, in a large number of emerging economies the pandemic continued to hinder economic activity owing to the slow pace of vaccination. One factor that would explain the difference in progress, in both advanced and emerging market economies, is the sectoral composition of activity. Specifically, the countries that are lagging further behind tend to coincide with those where services in which personal interaction plays a major role (such as tourism-related services) account for a large share of the productive structure.

At the global level, supply was not able to respond quickly enough to the recovery in demand. The gradual lifting of the restrictions gave rise to a relatively swift revival of demand, aided by the broad support provided by macroeconomic policies. But global output did not react as quickly, largely because of the complexity of supply chains, which involve very distant providers in geographical terms that operate to order and with low stock levels. In particular, shortages of intermediate goods and the lack of means of transport disrupted these very fragmented supply

chains at different stages, highlighting their fragility. More recently, these difficulties have been compounded by some countries' zero-COVID policies.

A salient feature of macroeconomic developments since the beginning of 2021 was the rise in commodity prices, particularly energy prices. The ultimate causes of this rise are not easy to disentangle, as discussed in Chapter 3 of this report. As noted above, this is due partly to the rigidity of the supply of some intermediate goods (including energy) following the recovery in demand and partly to the role of gas both as a primary source of energy and in electricity generation, particularly in the European context. As the invasion of Ukraine has tragically highlighted, gas markets are subject to geopolitical vagaries in terms of both cost and security of supply.

Since last year, this increase in commodity prices and the disruptions in supply chains have been leading to a surprisingly steep and persistent upturn in inflation across all geographical areas. Given the a priori temporary nature of the phenomena that originated it, initial assessments of the rise in input costs underlined their probable transitory nature. However, as these cost increases have grown sharper and longer-lasting, firms have started passing them through to their final prices. Moreover, since energy is a direct part of households' consumption basket, the higher energy prices are leading to a decline in the purchasing power of these agents. A potential full pass-through of firms' costs to their final prices and of energy consumer prices to wage growth would set in motion a price-wage feedback loop that would prolong inflation, with the ensuing loss of well-being.

Against this backdrop, the global macroeconomic outlook in early 2022 was moderately optimistic. Now that the Omicron variant has been overcome, the course of the pandemic appears to be having less of an impact on economic activity, particularly in the advanced economies. And, although persistent inflation and bottlenecks were emerging as a growing risk for the sustainability of the recovery, it was still considered that these factors would lose steam over the course of the year.

But Russia's aggression against Ukraine has drastically altered that scenario. The invasion is a shock of major proportions, with adverse consequences in terms of weaker economic growth and greater inflationary pressures. The complex channels through which this global economic disruption could materialise can be grouped into four categories, although they are not strictly independent from each other.

The most relevant channel is probably that related to the importance of Russia and Ukraine as global commodity producers. Europe's dependence on some of these commodities, such as gas, is very high. And although Spain is less dependent on them, it cannot escape rising prices on global markets. Furthermore, the war has raised the possibility that gas supplies could be interrupted, in response to which it would be difficult to find alternative suppliers in the short term. In addition, the war is affecting the supply of some agricultural commodities that are key to feeding the

world's population and of some metals that play a central role in the production of certain goods, such as technological products and motor vehicles.

Second, the war is having a highly significant adverse effect on economic activity through its impact on private agents' confidence. Uncertainty about the duration and the actual course of the war and, therefore, about developments in household and corporate incomes tends to make these agents postpone their consumption and investment decisions.

Third, world trade could be substantially impaired. Spain's direct exposure to the two countries at war is small, but the indirect impact stemming from other more exposed economies and from the adverse effects that are arising in the production chains of some goods could be much more relevant than the direct effects. And there is a risk that these exposures will be exacerbated, in way that is not easy to anticipate, by the trade and financial sanctions introduced.

Lastly, there is a potential financial channel that could transmit the shock to the real economy. For the time being the financial effects, both globally and for Spain, have been small, in terms of both financial flows and their cost. However, the heightening of the inflationary process could have significant implications on monetary policy stance in the advanced economies, resulting in tighter financial conditions worldwide. Nor can it be ruled out that the effects will become more relevant in the future, particularly in the context of the possible implications of excluding Russia from global financial channels.

This extraordinarily uncertain setting makes it difficult to formulate macroeconomic projections. The most recent Banco de España projections, dating from early April, foresaw GDP growth of 4.5% in 2022 assuming no further escalation of the war, meaning that its biggest macroeconomic impact would be felt in 2022 Q2.[1] This high growth largely owed to the remarkable economic buoyancy at end-2021, which implied that the rate would remain high (at 3.1%) even if activity were to remain at its end-2021 level throughout 2022. Under this scenario, average inflation in 2022 would stand at 7.5%, the highest consumer price inflation rate in Spain since 1986.

That baseline scenario is subject to downside risks to GDP growth and upside risks to inflation. Part of those risks have already materialised, according to the information published after the projections cut-off date. Estimated GDP growth in 2022 Q1 has been lower than expected, automatically leading to a significant downward revision of average growth in 2022. Additionally, except for the energy component, consumer prices have recently recorded higher growth than anticipated by those projections. Besides the data already observed, the risks going forward

1 See Box 1, "Macroeconomic projections for the Spanish economy (2022-2024)" in the Quarterly Report on the Spanish Economy, *Economic Bulletin* 1/2022, Banco de España.

would be linked, above all, to the possibility that the fallout from the war could be more persistent and far-reaching, for example in terms of further commodity price increases or a complete halt in trade flows between the European Union and Russia. Moreover, activity and inflation would also perform more unfavourably in a scenario in which firms and workers tried to preserve their margins and wage levels in real terms, respectively, as this is not feasible in the face of a shock that entails a loss of income for the domestic economy vis-à-vis the rest of the world. An upside risk to activity would be the possibility that households will avoid reducing their consumption of goods and services in response to the lower disposable income by using the savings they accumulated during the pandemic. This possibility is moderated by the fact that lower-income households, where energy goods account for a larger share of the consumption basket and which are therefore more affected by energy price increases, were barely able to build up such savings buffers during the health crisis.

In the current setting, economic policies have a crucial role to play. Like other central banks, the European Central Bank (ECB) has begun a process of monetary policy normalisation. In an extraordinarily uncertain scenario, and provided that euro area medium-term inflation expectations remain anchored around its 2% target, the ECB has emphasised that its monetary policy response will depend on the performance of economic indicators, in addition to being gradual and maintaining all of the optionality and flexibility provided by its various instruments. In particular, the ECB Governing Council has insisted that it will take whatever action is needed to fulfil its price stability mandate and to safeguard financial stability.

Fiscal policy in Spain must continue to cushion the effects of the successive shocks of the last two years, but must act selectively and through temporary measures, given the high government indebtedness and the resulting limited scope for action. Following the increase in government debt in the wake of the pandemic, there is barely any budgetary room for manoeuvre. This calls for a very selective and temporary use of such measures, to avoid passing on an excessive burden to future generations and, more worryingly, compromising fiscal sustainability. This need to act in a selective manner makes it all the more advisable to rely on direct grants to support the agents most affected by the energy price increase rather than implement across-the-board price discounts, which are costlier and do not provide the right incentives to reduce consumption of these goods.

The nature of the most recent shocks makes an incomes agreement between firms and workers a particularly appropriate instrument for addressing them. As noted above, the rise in the cost of imported commodities entails a loss of income for the domestic economy, the sharing out of which should be agreed in the context of social dialogue. The agreement, whether explicit or tacit (as seems to have been the case so far), should be based on the premise that a wage-price spiral would entail an additional income loss for the domestic economy owing to the loss of external competitiveness and, therefore, a decline in net exports vis-à-vis the rest of the world.

In addition, pan-European policies can make a very relevant contribution. Current challenges obviously transcend national borders and can be more appropriately addressed through a joint European response. The war provides an opportunity to deepen integration in the continent, even if it has been partly missed due to the failure so far to mutualise the fiscal policy response.

Lastly, the war makes an additional geopolitical argument for decarbonising the Spanish and European economy. Far from pushing concerns about the consequences of climate into the background, the security of energy supply has made transitioning to renewable energy sources that reduce external dependence even more necessary. Chapter 4 of this Annual Report analyses the energy transition challenge for the Spanish economy.

2 The firming of the economic recovery and the rise in inflation at the global and euro area levels

The recovery in global economic activity firmed in 2021 and over the first months of 2022, although growth in this period slowed temporarily and even more so after the invasion of Ukraine by the Russian army in late February. World GDP rebounded by 6.1% in 2021 (see Chart 1.1.1), after the 3.1% decline in 2020, thanks to headway in the vaccination process (which enabled the health restrictions to be eased and bolstered consumer and business confidence) and to continued economic policy support. However, the recovery had a very volatile profile and lost some momentum from late 2021 onwards, as the pandemic worsened in some regions (owing to the emergence of new COVID-19 variants), bottlenecks in global supply chains persisted[2] and, as described in detail in Chapter 3 of this Annual Report, inflation picked up significantly mostly owing to higher energy and food prices.

By geographical area, the pace of economic growth proved uneven. Among the major economies, GDP growth in 2021 was 5.7% in the United States, 5.3% in the euro area and 7.4% in the United Kingdom. China grew by 8.1% in the year as a whole, although it experienced a marked deceleration in 2021 H2 as a result of the slowdown in the residential real estate sector and the imposition of strict health measures in response to fresh COVID-19 outbreaks. Among the emerging economies, the recovery was particularly strong in emerging Asia and Latin America,[3] with GDP growth rates of 7.3% and 6.8%, respectively. However, growth in the latter region's two largest economies (Brazil and Mexico) was dampened in 2021 H2 by the upsurge in inflation, the monetary policy tightening, the course of the pandemic and the persistence of bottlenecks.

2 See Kataryniuk, Del Río and Sánchez-Carretero (2021) and Alonso, Kataryniuk and Martínez-Martín (2021).

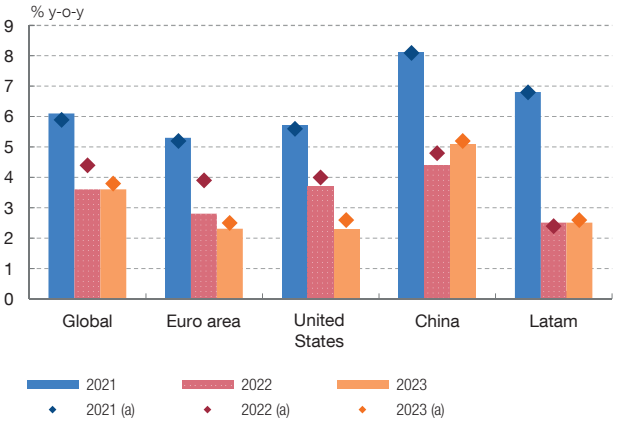
3 See Reports on the Latin American economy at https://www.bde.es/bde/en/areas/analisiseconomi/enfoque/americalatina/

Chart 1.1

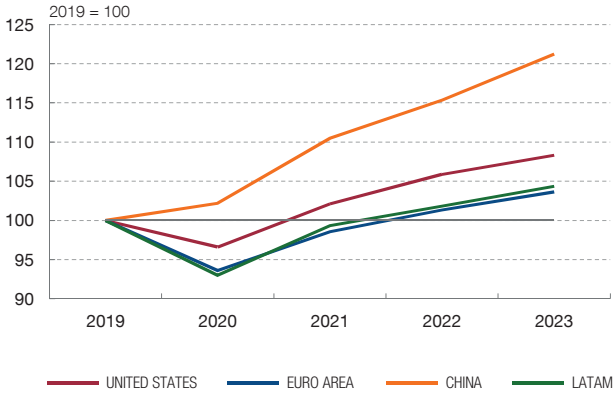
THE FIRMING OF THE GLOBAL ECONOMIC RECOVERY IN 2021

The global economic recovery strengthened in 2021, although growth in activity slowed as the year progressed, even more so after the invasion of Ukraine and the imposition of sanctions against Russia. Growth in activity was uneven across geographical areas, economic sectors and demand components. The recovery is also heterogeneous across euro area countries.

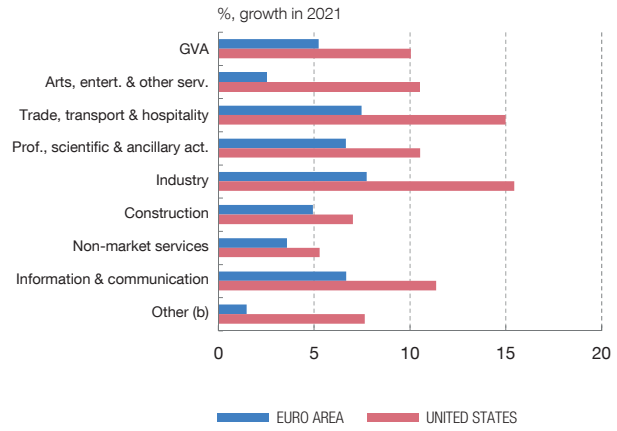
1 GDP GROWTH PROJECTED BY THE IMF IN THE APRIL 2022 WEO



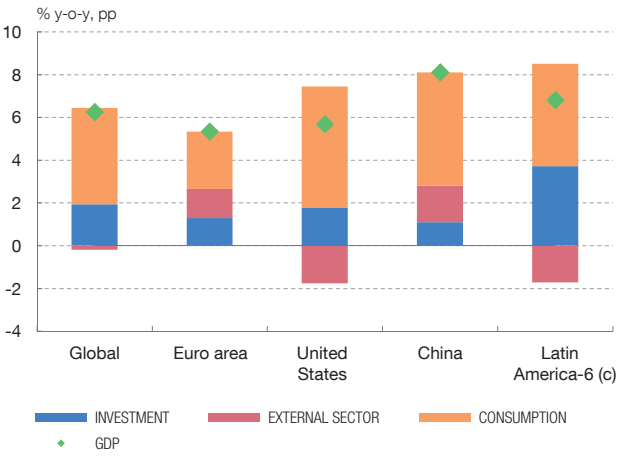
2 GDP LEVEL BY REGION: APRIL 2022 PROJECTIONS



3 GVA GROWTH BY SECTOR



4 BREAKDOWN OF 2021 GROWTH



SOURCES: Banco de España, national statistics, Eurostat, IMF (April 2022 World Economic Outlook) and Refinitiv.

a October 2021 World Economic Outlook projections.
b "Other" includes the primary sector and other market services (financial activities, insurance and real estate activities).
c Aggregate of Argentina, Brazil, Chile, Colombia, Mexico and Peru.

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Cross-country differences in the extent to which pre-crisis levels of activity have been regained are largely explained by the productive structure (mainly in terms of the importance of the sectors most exposed to social interaction and to global supply chains), differential access to vaccines and the different capacity of economic policies to provide support. Thus, while the United States had already exceeded such levels in 2021 H1, the euro area as a whole did not do so until the end of the year (see Chart 1.1.2). Among the largest economies of the area, only France and the Netherlands returned to their pre-pandemic levels in 2021. According to the latest International Monetary Fund (IMF) projections, Germany and Italy will regain those

levels in 2022 and Spain will not do so until 2023. Although the emerging economies have, on the whole, recouped their pre-COVID-19 levels, cumulative growth since late 2019 is considerably lower than it would have been had the pre-crisis growth trend held unchanged.

The mixed pace of the recovery also affected the different economic sectors. The shift from demand for services (affected by the health restrictions) towards demand for goods drove a rapid recovery in the industrial sector initially (see Chart 1.1.3), leading to supply and demand mismatches against a backdrop of disruptions in global production and distribution chains.[4] From 2021 H2, however, headway in the vaccination campaign, particularly in the advanced economies, stimulated service sector activity as mobility increased due to the easing of the pandemic containment measures.

The global recovery was mainly underpinned by private consumption (see Chart 1.1.4). The lifting of the restrictions on movement and public policies to support household income boosted private consumption, particularly in the United States. Nevertheless, the household saving ratio has remained above its pre-pandemic level, possibly owing to the increase in the precautionary component in an ongoing, highly uncertain context. Investment in capital goods, which had gained momentum in 2021 H1 fuelled by particularly favourable financing conditions, was weighed down in H2 by the persistence of bottlenecks, higher energy prices and the resurgence of the pandemic in the final months of the year. Similarly, the recovery in residential investment was also constrained by shortages of materials and, in some economies, of construction workers.

The bottlenecks that emerged in global value chains slowed the recovery in international goods trade, which had already surpassed pre-pandemic levels at end-2020 (see Chart 1.2.1). The pick-up in demand for manufactured goods, together with logistical difficulties in transport services and the health measures in Chinese manufacturing sites and ports associated with the zero-COVID policy implemented by several Asian countries, led to a significant increase in supplier delivery times (particularly for specific inputs such as semiconductors, electronic equipment and metal components), which disrupted international production chains and limited global goods trade growth.[5] Trade in services grew steadily throughout the year, reaching pre-health crisis levels only in Q4.

Goods trade developments also showed cross-regional divergences and were marked in Europe by the United Kingdom's exit from the single market. Trade growth was significant in the emerging economies overall, particularly in the Asian

4 Chapter 3 of this report provides a detailed description of the bottlenecks in production chains and analyses their impact on inflation. See also Attinasi, Bobasu and Gerinovics (2021) and Frohm et al. (2021).

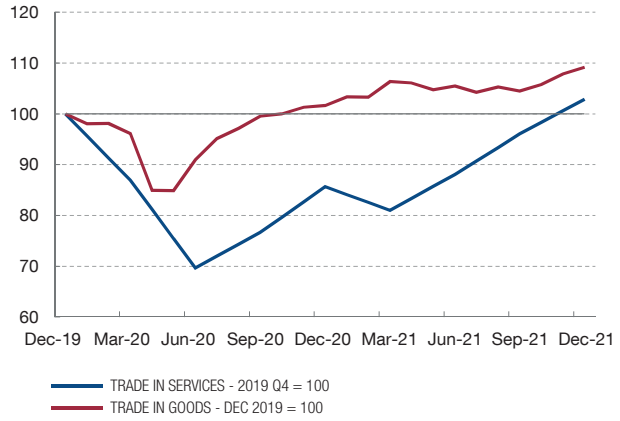
5 Kataryniuk, Pérez and Viani (2021) and Di Stefano (2021) analyse the impact of the health crisis on global value chains and conclude that, although it was very significant, there was no evidence at that time that multinational corporations were planning a significant relocation of their productive activity to their countries of origin owing to the pandemic.

Chart 1.2

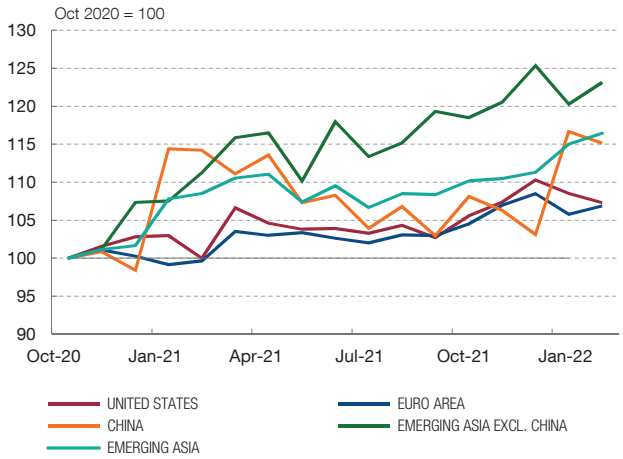
THE RECOVERY IN WORLD TRADE HAS BEEN WEIGHED DOWN BY BOTTLENECKS AND FRESH OUTBREAKS OF THE PANDEMIC

Prolonged bottlenecks in global production and distribution chains have slowed the recovery of international goods trade, which could be further severely affected by the war and the sanctions against Russia. Goods trade growth also showed some cross-regional divergences and was marked in Europe by the United Kingdom's exit from the single market.

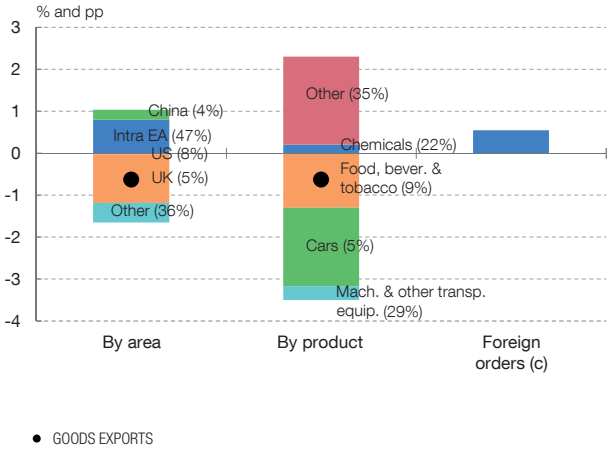
1 DEVELOPMENTS IN INTERNATIONAL TRADE (a)



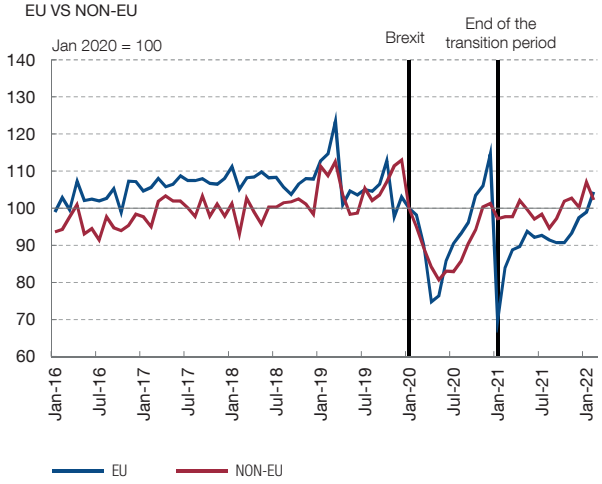
2 GOODS TRADE BY REGION



3 EURO AREA. VOLUME OF REAL GOODS EXPORTS GROWTH IN 2021 WITH RESPECT TO 2019 AND CONTRIBUTIONS (b)



4 UNITED KINGDOM: BILATERAL GOODS TRADE VOLUMES EU VS NON-EU



SOURCES: CPB, Office for National Statistics and OECD.

a Trade in services data are nominal and published quarterly. The weighted average of the countries with available data is reported. Goods trade data are expressed in real terms.
b The share of each product and destination in total euro area goods exports in 2021 is given in brackets.
c European Commission business and consumer survey. Standardised series. Change in 2021 with respect to 2019.

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region, but was more contained in the main advanced economies (see Chart 1.2.2), where the impact of the disruptions to global value chains was more marked due to the importance of the most affected industries in their productive structure and to severe input shortages.[6] In the case of the European countries, moreover, the end of

6 See Frohm et al. (2021).

the Brexit transition period in January 2021, which marked the United Kingdom's exit from the European single market and the subsequent entry into force of the Trade and Cooperation Agreement with the European Union, had a negative impact on euro area exports (see Chart 1.2.3). Thus, the end of the transition period coincided with a marked reduction in the merchandise trade volume between the United Kingdom and the European Union,[7] which only returned to pre-Brexit levels in February 2022 (see Chart 1.2.4). This limited recovery is partly explained by the fact that European firms with a higher exposure to the United Kingdom appear to have taken advantage of the transition period to gradually relocate their trade activities to other EU countries, as suggested by the evidence available for Spain.[8]

In 2021 and in 2022 to date, inflation increased significantly worldwide to rates not seen for several decades (see Chart 1.3.1). Among the advanced economies, consumer price tensions are particularly high in the United States, where the inflation rate reached 8.5% in March 2022, the highest level since 1982. But the upsurge has also been very marked in the euro area, where the harmonised index of consumer prices (HICP) posted a year-on-year increase of 7.5% in April, an unprecedented figure in the history of the monetary union. Among the emerging market economies, inflation rose especially in Latin America, reaching 9.3% in March for the region overall, while it was very moderate in China. Price increases, which are proving more intense and persistent than anticipated, have affected above all commodity prices, mainly energy and agricultural commodities, which were also hit in 2021 H2 by the geopolitical tensions that culminated in the outbreak of the war in Ukraine at the end of February 2022 and in the harsh sanctions imposed on Russia by the international community (see Chart 1.3.2). As discussed in Chapter 3, underlying inflation (which excludes energy and food) has also trended upwards, albeit in a more subdued manner, particularly in the euro area, where it rose by 3.5% in April (compared with 6.5% in March in the United States).

Expectations of a faster-than-anticipated withdrawal of monetary stimuli in response to the uptick in inflation and higher risk aversion following the outbreak of the war in Ukraine have tightened global financial conditions since the beginning of 2022, particularly in the emerging markets (see Chart 1.4.1). Long-term yields on higher-rated sovereign bonds, which had remained low throughout 2021, albeit with some volatility, picked up somewhat sharply since the beginning of this year (see Chart 1.4.2). Corporate credit risk premia (especially in the high-yield segment) and euro area sovereign spreads have also increased (see Chart 1.4.3) and are now higher than before the pandemic.

The greater risk aversion has been reflected in increases in implied bond and equity market volatilities and rises in the systemic risk indices, which have been

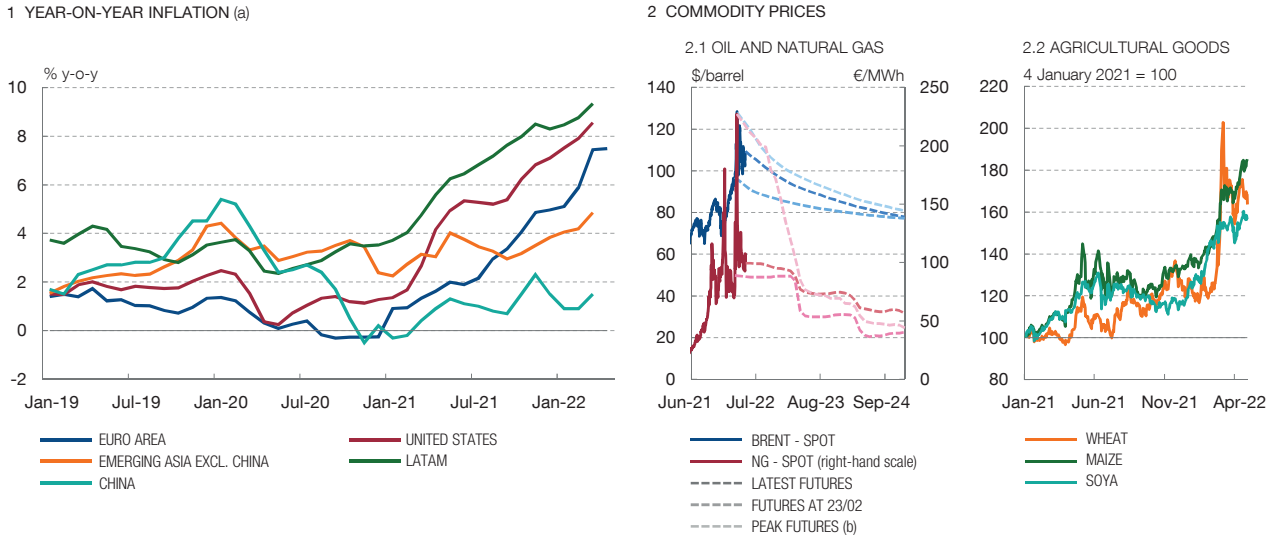
7 See Buesa et al. (2021).

8 See Gutiérrez, Lacuesta and Martín Machuca (2021).

Chart 1.3

THE PICK-UP IN INFLATION IS PROVING STRONGER AND MORE PERSISTENT THAN ANTICIPATED

Inflation increased significantly worldwide to rates not seen for several decades, spurred by the rise in energy commodity and food prices and by the persistence of bottlenecks. The war in Ukraine has led to a further rise in the prices of energy and some agricultural products, and adds considerable uncertainty to the short and medium-term inflation outlook.



SOURCES: Bloomberg, Refinitiv and national statistics.

a The Latam aggregate is the average of five Latin American countries (Brazil, Colombia, Chile, Peru and Mexico).
b Oil prices peaked on 8 March and natural gas prices on 7 March.

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more significant in the euro area than in the United States (see Chart 1.4.4). The main stock market indices, which remained on a rising trend in 2021 underpinned by better-than-expected corporate earnings and progress in the vaccination campaign worldwide, slipped at the beginning of 2022, influenced by the rise in interest rates and the invasion of Ukraine (see Chart 1.4.5). In foreign exchange markets, the euro continued to depreciate against the dollar and, to a lesser extent, against its other main trading partners (see Chart 1.4.6). The depreciation of the euro against the dollar appears to reflect the expectation of a widening divergence between monetary policy cycles in both areas and the fact that the dollar has acted as a safe-haven currency in the current setting of geopolitical tensions, which is comparatively worse for Europe.

The war in Ukraine has worsened the global growth outlook for the coming quarters. The war itself, and the international community's response with harsh economic sanctions against Russia, have increased uncertainty, tightened financing conditions, exacerbated bottlenecks and pushed up energy and food prices (thus eroding households' purchasing power and increasing firms' production costs). These effects tend to be bigger in a geographical area, such as Europe, which depends to a greater extent on Ukraine and, above all, on Russia, for the supply of some commodities.[9]

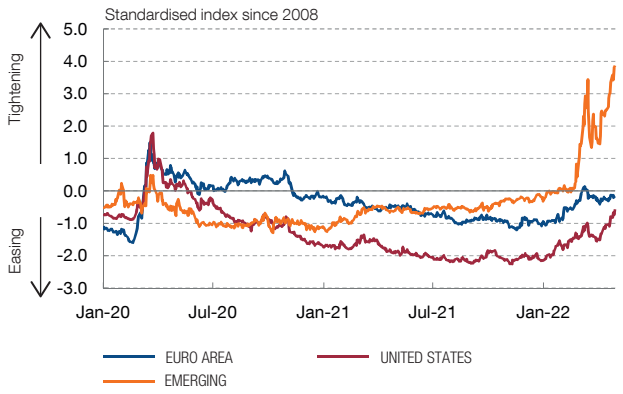
9 See Alonso et al. (2022).

Chart 1.4

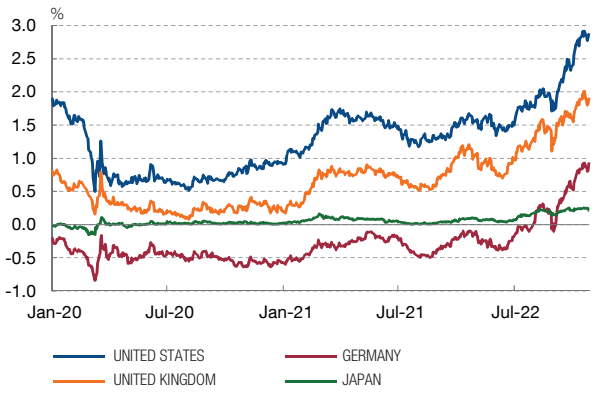
GLOBAL FINANCIAL CONDITIONS HAVE TIGHTENED RECENTLY

Financial conditions have tightened since early 2022, particularly in the emerging market economies. Long-term yields on higher-rated government bonds and euro area sovereign spreads picked up in 2022, on expectations of a faster-than-expected withdrawal of monetary stimuli in response to the uptick in inflation. Increased uncertainty and heightened risk aversion have been reflected in higher financial asset price volatility and rises in the systemic risk indices. These developments, together with the rise in long-term interest rates, have affected the performance of the major stock market indices and exchange rates.

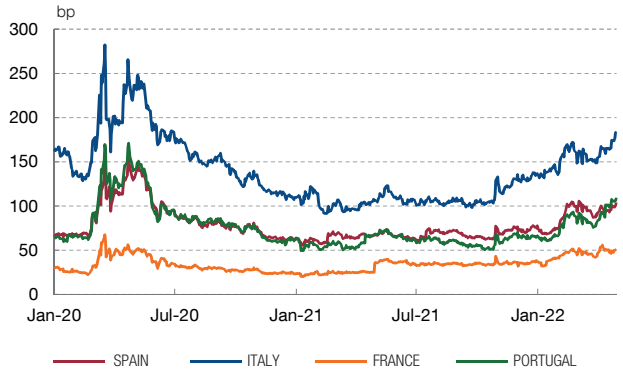
1 GOLDMAN SACHS FINANCIAL CONDITIONS INDICES



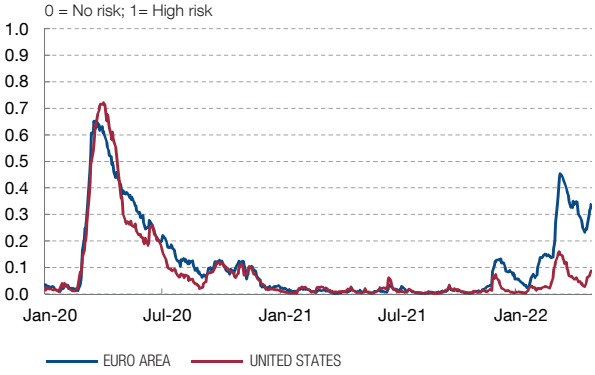
2 TEN-YEAR SOVEREIGN YIELDS



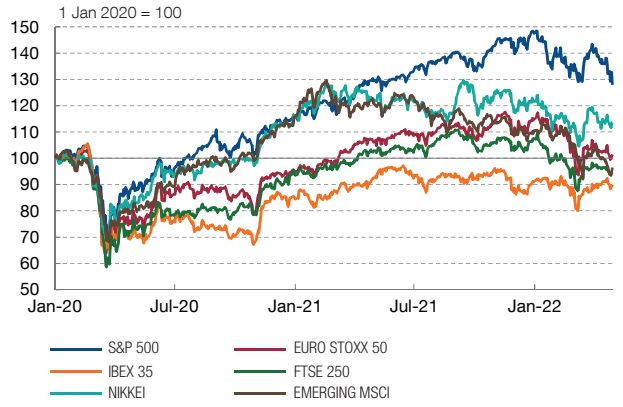
3 TEN-YEAR SOVEREIGN SPREADS VIS-À-VIS GERMANY



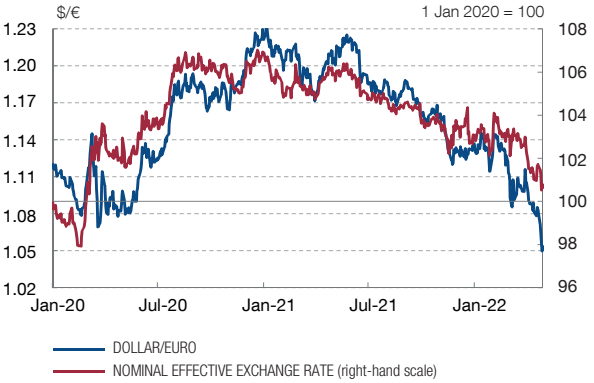
4 COMPOSITE INDICATOR OF SYSTEMIC RISK (a)



5 STOCK MARKET INDICES



6 EURO EXCHANGE RATES (b)



SOURCES: Refinitiv Datastream, Bloomberg Data License and ECB.

a The ECB's Composite Indicator of Systemic Stress (CISS).
b An increase (decrease) indicates an appreciation (depreciation) of the euro.

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In general, the change in the relative price of exports and imports (the terms of trade) stemming from higher commodity prices will bear down on the economic activity of countries that are net importers and will benefit net exporters, particularly emerging market economies that are not highly integrated into global value chains, such as those in Latin America.

Economic policies, which played a key role in the stabilisation phase of the health crisis, must also come to the fore in the current phase, where the extraordinary increase in uncertainty and inflationary pressures are jeopardising the continuity of the recovery. As analysed in Section 4, and, more extensively, in Chapters 2 and 3 of this Annual Report, the growth outlook will largely depend on the proper calibration of the fiscal and monetary policy responses. These should maintain a medium-term orientation that ensures expectations are anchored around the price stability and fiscal sustainability targets, while retaining sufficient flexibility in the short term, which is necessary in the current climate of heightened uncertainty. Alongside these policies, structural reforms aiming to raise potential growth and enhance economies' flexibility to respond to future shocks are also particularly relevant in the current context. Beyond the consequences of the war for growth and inflation, the outlook for global activity is also influenced by the still uncertain course of the pandemic. The uneven pace of vaccination worldwide and the possible emergence of new COVID-19 variants mean that the health crisis has not yet been fully resolved. It is essential in this connection to reinforce multilateral collaborative initiatives, such as COVAX,[10] whose aim is to accelerate the manufacture of vaccines and to ensure fair and equitable access to all countries.

3 Positive and negative aspects of the recovery in Spain

The gradual recovery of the Spanish economy over the course of 2021 lasted until the Russian invasion of Ukraine in early 2022. Between the onset of the pandemic and the outbreak of the war, economic activity in Spain was influenced by epidemiological developments and the measures adopted to contain the disease (see Figure 1). The sharp fall in GDP in 2020 Q2, in the wake of the first lockdown, was followed by an equally sharp rebound in the summer months of that year. But the recovery stalled thereafter until 2021 Q2, when a phase of stronger output growth began as the toll of the pandemic on public health and economic activity weakened, thanks to the headway made in the vaccination campaign. Against the background of continued favourable financial conditions, these developments were initially supported almost exclusively by domestic demand, although net exports also made a significant contribution to output growth in 2021 H2. In any event, the strength of

10 COVAX is the vaccines pillar of the Access to COVID-19 Tools (ACT) Accelerator, a global collaboration initiative promoted by the World Health Organization to accelerate the development, production and equitable access to COVID19 tests, treatments and vaccines.

Figure 1.1

THE SPANISH ECONOMY: BETWEEN OVERCOMING THE PANDEMIC AND THE UNCERTAINTY CAUSED BY THE WAR IN UKRAINE

	KEY DEVELOPMENTS	ECONOMIC POLICIES
2021 H1	Economic activity in Spain was influenced by epidemiological developments and the measures to contain the disease, which hindered its recovery, particularly in the services sector. Progress in the vaccination campaign raised hopes that the health crisis would be overcome and, therefore, that a more vigorous recovery in activity would be seen in the second half of the year, underpinned by favourable employment developments.	Monetary and fiscal policies provided crucial support to activity in the face of fresh waves of the pandemic, although the vaccine roll-out raised the prospect of their progressive normalisation.
2021 H2	The lifting of the containment measures was conducive to the sectoral shift of activity towards services. However, the supply chain disruptions and rising commodity prices, particularly of energy commodities, hampered the recovery in manufacturing. Uncertainty over the duration of the inflationary pressures and the bottlenecks, together with the new variant of the virus, threatened the recovery path in the final stages of the year. By contrast, expectations of a possible release of the built-up savings and of the rollout of NGEU funds suggested activity would be buttressed somewhat.	The process of monetary policy normalisation began, due to the increase in inflation, although the broadly expansionary stance remained.
2022 Q1	The recovery regained momentum in the initial weeks of the year thanks to the improving epidemiological situation and some timid signs of the bottlenecks clearing. However, the invasion of Ukraine has entailed, though various channels, a new shock to economic activity and prices: a fresh rise in commodity prices, private agents losing confidence and a slowdown in international trade. The war has generated considerable uncertainty, with risks to the downside for activity and to the upside for inflation.	Monetary policy must be guided by the price stability mandate and not overreact to developments in the more volatile components. Fiscal policy must mitigate the adverse effects of the new shock, but selectively given its scant room for manoeuvre (particularly in Spain). An incomes agreement would be highly desirable.

SOURCE: Banco de España.

the recovery was increasingly dampened over the course of 2021 by disruptions in global supply chains and inflationary pressures. And, just as the first signs of an easing of these forces were beginning to emerge, the war broke out.

Spanish GDP is returning to its pre-pandemic level slower than the euro area as a whole. Specifically, the gap between GDP in 2022 Q1 and 2019 Q4 is still 3.4%. By contrast, the euro area had already surpassed pre-pandemic levels of activity at the beginning of this year. From the demand component standpoint, Spain's slower recovery is attributable to the less favourable behaviour of private consumption, housing investment and tourism exports. From the supply side, the relative delay in Spain's recovery can be explained by the comparatively higher share in GDP and employment of the sectors

requiring greater social interaction. Additionally, structural factors, such as Spanish firms' small size, may have amplified the adverse impact of the pandemic in Spain.

3.1 Bottlenecks and inflation, magnified by the war in Ukraine, are holding back the recovery

The successive waves of the pandemic tended to have less consequences for public health as the vaccination process progressed. The epidemiological situation deteriorated significantly in early 2021, but the improvement observed from March led to the end of the third state of alert on 9 May (see Chart 1.5.1). Two further outbreaks followed, although their severity was comparatively lower. The first of these episodes, which took place at the beginning of the summer, was more pronounced in Spain than in other European countries and had a negative impact on the tourist season. The second one, associated with the more contagious Omicron variant, caused an explosive increase in case numbers from December onwards to very high levels in mid-January 2022, both in Spain and in the rest of Europe. Since then the epidemiological situation has improved substantially.

A crucial factor in explaining the gradual reduction in the severity of the disease over the successive waves is the growing proportion of fully vaccinated people. Spain soon took the lead in the international vaccination process. By the end of the summer of 2022, 80% of the population was fully vaccinated (see Chart 1.5.2). In last year's successive outbreaks, vaccination reduced the severity of the disease and, therefore, the number of hospitalisations and deaths relative to the number of cases.

This gradually diminished the impact of the pandemic on activity. The improved health situation allowed the measures restricting contact to be gradually eased and mobility to be restored (see Chart 1.5.3). However, this process was incomplete – as was, therefore, the recovery in activity – since it has not allowed pre-crisis output levels to be regained nor has it reached all productive sectors equally.

In 2021 overall, GDP grew by 5.1%. Output growth was mainly underpinned by the contribution of domestic demand (4.7 percentage points (pp), including the 0.5 pp contribution of the change in inventories) (see Chart 1.5.4). Net external demand contributed almost 0.5 pp. In 2022 Q1 the consequences of the war resulted in GDP growth moderating significantly, to 0.3% quarter-on-quarter.

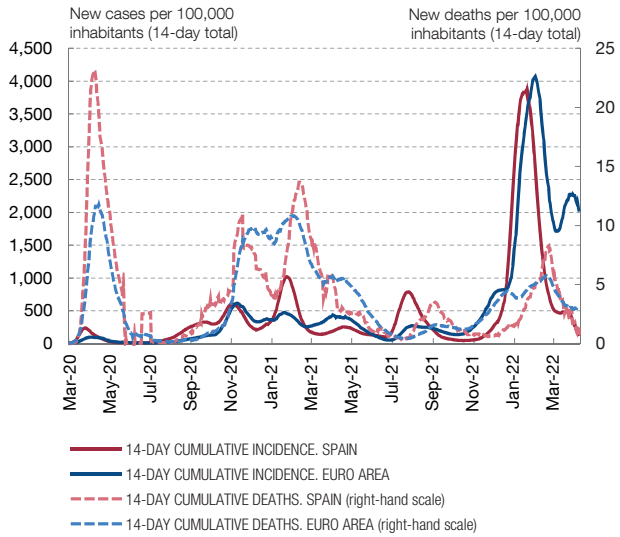
Over the course of 2021 and in 2022 to date there has been an intense shift in the strength of activity across sectors. The stringent restrictions in response to the pandemic remained in place in 2021 H1, leading to a sluggish performance of services requiring social interaction, with manufacturing showing greater buoyancy. But, as the year progressed, activity in the hospitality and leisure sectors became more dynamic as vaccination enabled the pandemic containment measures to be lifted (see Chart 1.6).

Chart 1.5

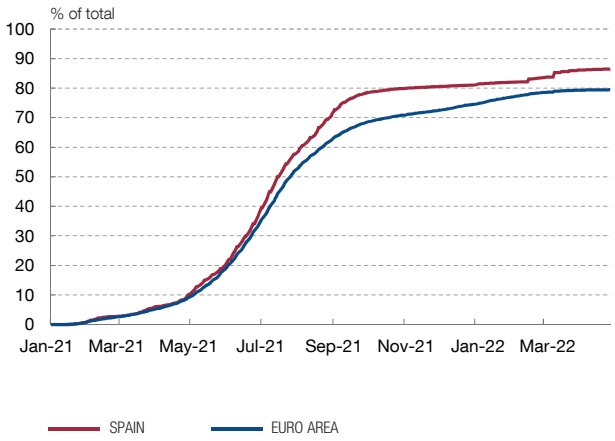
IN SPAIN, ACTIVITY RECOVERED GRADUALLY ON THE BACK OF THE IMPROVED HEALTH SITUATION

The Spanish economy recovered gradually in 2021, albeit incompletely, helped by the waning impact of the pandemic on activity thanks to the vaccination process.

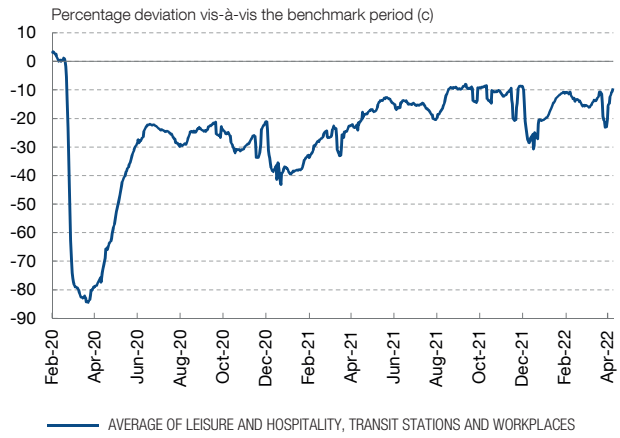
1 COURSE OF THE COVID-19 PANDEMIC IN SPAIN AND THE EURO AREA (a)



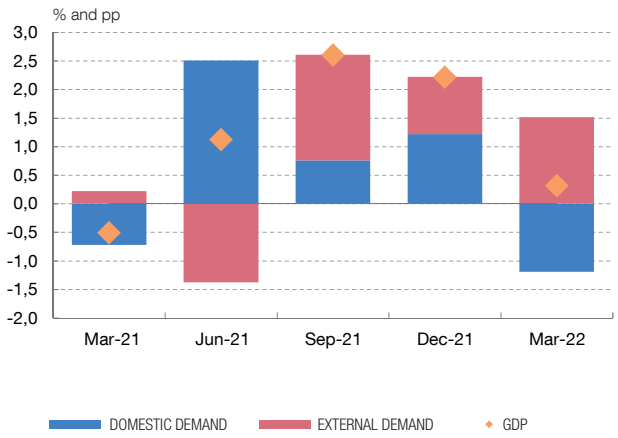
2 PERCENTAGE OF FULLY VACCINATED POPULATION (b)



3 GOOGLE MOBILITY INDICATOR



4 QUARTER-ON-QUARTER REAL GDP GROWTH AND CONTRIBUTIONS



SOURCES: Our World in Data, INE, Google and Banco de España.

a Latest data: 9 April.
b On information up to 27 April.
c Percentage deviation from the mobility observed during a pre-pandemic reference period (3 January - 6 February 2020). 7-day moving averages.

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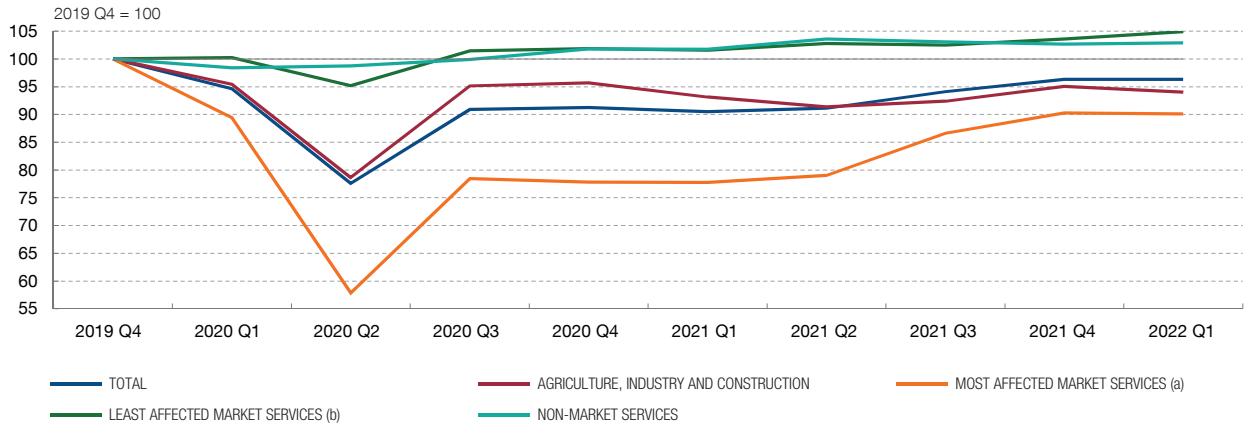
At the same time, disruptions in maritime transport, supply difficulties affecting certain inputs and their rising cost affected the recovery in the primary, industrial and construction sectors from mid-2021. Within the manufacturing sector, the production of transport equipment was particularly exposed to the disruptions in production processes, owing to the wide mismatches between supply and demand that emerged in the semiconductor and integrated circuit industry in the final stretch of 2020 and which intensified

Chart 1.6

THE RECOVERY IN ACTIVITY HAS BEEN UNEVEN ACROSS THE SECTORS OF ACTIVITY

The sectors hardest hit by the pandemic are lagging behind the rest, many of which have reached pre-crisis levels.

1 CHANGE IN GROSS VALUE ADDED, BY SECTOR



SOURCES: INE, Ministerio de Inclusión, Seguridad Social y Migraciones and European Commission.

a Trade, transportation and hospitality, professional, scientific and administrative activities and arts and recreation services.
b Information and communication, financial and insurance activities and real estate activities.

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progressively over the course of 2021. This has led to production cuts at numerous car factories in Spain and in the rest of Europe.[11] This activity is very sensitive to disruptions in international supply chains, since production is highly fragmented across different locations and it operates with low stock levels, based on the "just in time" model. It is also a very significant sector, not only because of its share in the economy as a whole (2.7% of total GVA in 2019, including the motor vehicle manufacturing and sale sectors), but also because of the significant spillover effects on the activity of other sectors.[12]

As in other geographical areas, consumer prices have accelerated sharply. The year-on-year rate of change has risen almost continuously between December 2021 and March 2022, going from -0.6% to 9.4%, its highest value since 1985.[13,14] For the most part, this increase in headline inflation is attributable to the rise in energy prices,

11 Industrial output indices in Spain for the car and other transport equipment (trains, aircraft, ships) manufacturing sectors are 21.5% and 6.6% below pre-pandemic levels, respectively.

12 Manufacture of motor vehicles is the sector which is most detracting from GDP due to the impact of global supply chain bottlenecks. Specifically, it is estimated that the shocks on this sector would have reduced the average GDP growth rate by 0.2 pp in 2021 and could lower it by another 0.5 pp in 2022 (see Fernández-Cerezo, Montero and Prades (2021)). The direct effects of the fall in production in the automotive sector would lie behind somewhat less than 30% of this downward revision, while the rest would be due to both domestic and international spillover effects.

13 The HICP series begins in 1997. For the period 1985-1996 the comparison is made against the consumer price index (CPI).

14 In April, the HICP decelerated to 8.3%, according to the leading indicator. However, at the cut-off date for this report, the breakdown by component is not yet available, making it difficult to evaluate the most recent data, although the partial information available suggests that the reduction in the rate is the result of the slowdown in the energy component, while the non-energy index continued to rise.

which accounts for almost two-thirds of the total increase (see Chart 1.7.1). However, food, services and non-energy industrial goods prices have also risen at a higher pace throughout this period. The underlying inflation indicator, which measures the change in prices in the latter two components, which typically show smaller swings, has rebounded between December 2020 and March 2022 from -0.1% to 3%. This increase can also be observed, albeit less intensely, when other alternative inflation measures are considered based on the exclusion of the most volatile components (see Chart 1.7.2).

As described in further detail in Chapter 3 of this report, there are three factors behind this increase in inflation. The first, essentially mechanic in nature, is linked to the sharp slowdown in the price of numerous goods and services in the first months of the pandemic, which led to the emergence of powerful base effects on year-on-year inflation as of March 2021.[15] The second factor is linked to the response of supply to the recovery in demand once the worst of the health crisis had passed and to the changes in households' consumption patterns stemming from the pandemic containment measures and the pandemic itself. In this setting, as noted above, the imperfect adaptation of production processes to these demand developments, together with the proliferation of disruptions in international maritime transport, has altered global supply chains,[16] resulting in significant rises in the price of a wide range of intermediate goods. The third factor, partly related to the previous one, is the global increase in energy prices, as detailed below.

Hydrocarbon and electricity prices have increased markedly since early 2021. Oil and gas prices have risen very sharply since the beginning of last year, partly due to the progressive escalation of geopolitical tensions. Further, the increase in the price of gas (a commodity used by combined cycle power plants) and, albeit to a lesser degree, of greenhouse gas emission allowances caused electricity prices on wholesale markets to surge, given the price-setting mechanisms in these markets.[17] This inflation has affected retail electricity prices in Spain significantly more than in other European countries (see Chart 1.7.3).[18]

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15 Base effect is the name given to the effect that arises when the year-on-year rate of change in a given month is affected by abnormally low or high month-on-month changes observed in the same month a year earlier. For a more detailed explanation of this effect, see Banco de España (2016).

16 See Kataryniuk, Del Río and Sánchez Carretero (2021) and Attinasi et al. (2021).

17 The wholesale electricity market operates under a marginal pricing model, whereby all power generators receive the market clearing price, which is set at the marginal generation costs of the most expensive technology. In Spain, developments in wholesale electricity markets mirrored those in other European countries, with prices increasing by 575% between end-2020 and March 2022. More than 80% of this increase owed to the rise in gas prices, while the higher price of emission allowances accounted for almost 10%. For more details on this estimate, see Pacce, Sánchez and Suárez-Varela (2021).

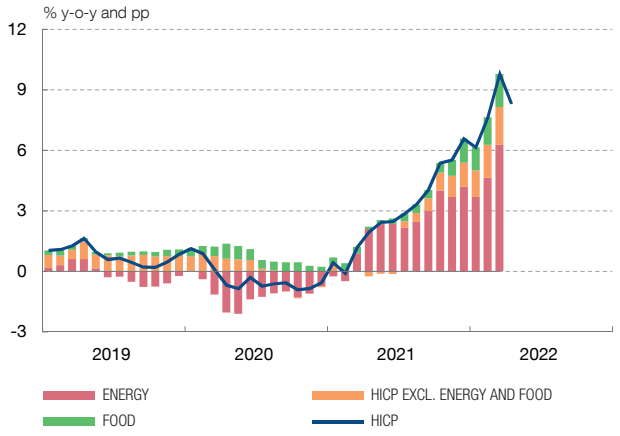
18 Retail prices have risen more sharply in Spain due to the differences in the price-setting mechanisms in each country, which mean wholesale market developments are passed through to retail prices at different speeds. This pass-through is particularly swift in Spain, while in other countries the spillover from the recent price rises in wholesale markets is yet to be observed.

Chart 1.7

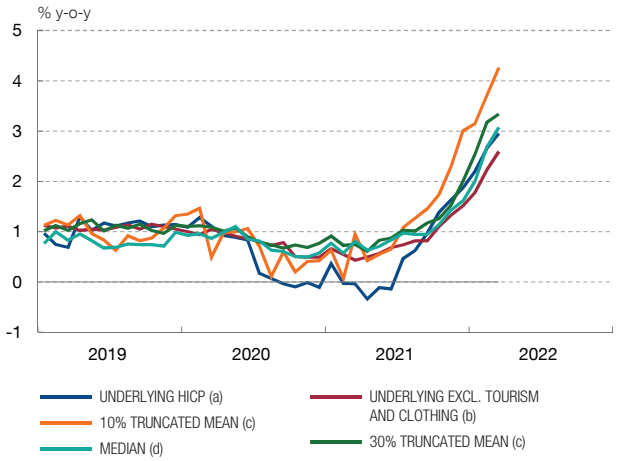
THE INCREASE IN ENERGY PRICES EXPLAINS MUCH OF THE RISE IN INFLATION, BUT THE GROWTH IN OTHER CONSUMER PRICES HAS ALSO QUICKENED

Inflation has risen sharply since early 2021, driven essentially by the price of electricity and oil derivatives. However, the rate of price growth for other goods and services in the consumption basket has also risen to varying extents. This owes to a number of factors, including the recovery in demand following the gradual reopening of the economy, in step with the lifting of the pandemic containment restrictions, and the supply disruptions caused by production bottlenecks.

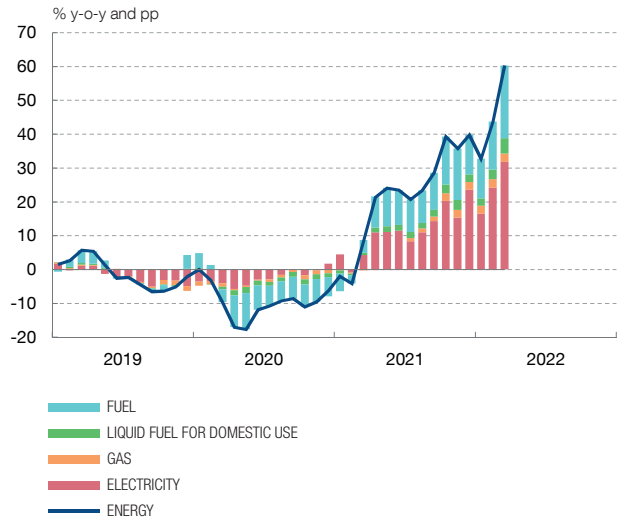
1 HEADLINE HICP. CHANGE AND CONTRIBUTIONS



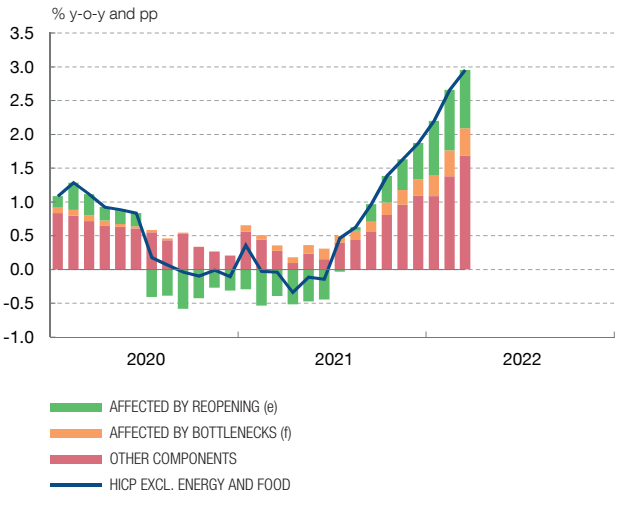
2 MEASURES OF UNDERLYING INFLATION



3 ENERGY HICP. CHANGE AND CONTRIBUTIONS



4 HICP EXCL. ENERGY AND FOOD. CHANGE AND CONTRIBUTIONS



SOURCES: INE and Banco de España.

a HICP excluding energy and food.
b HICP excluding energy, food, clothing and footwear, package holidays, accommodation services and air transport.
c The trimmed mean is defined as the average rate of inflation after trimming out the components with the smallest and largest price change. For the 10% (30%) trimmed mean, the top and bottom 5% (15%) of components at each tail of the distribution of price changes are removed.
d The median refers to the middle value in the distribution of price changes for all HICP components.
e Includes: clothing and footwear, air transport, recreation and culture services and accommodation services.
f Includes: vehicles, spare parts and accessories, and furniture and fittings.

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To date, the pass-through of the higher cost of inputs to the different components of the non-energy consumption basket has been partial. Energy inflation has fed through quickly and in full to the corresponding consumer price components. However, the rise in input prices (energy and non-energy alike) has so far only partially fed through to the prices of the other consumption basket components (see Chart 1.7.4). This is consistent with the available empirical evidence, which suggests that the changes in input prices (those hit hardest by the bottlenecks) have a relatively small impact on the HICP and with a certain lag.[19] In the current episode, this is borne out by the results of various surveys of non-financial corporations (NFCs), such as the Purchasing Managers' Index (PMI) and the Banco de España Business Activity Survey (EBAE),[20] which indicate that since early 2021 firms have indeed only partially passed rising costs through to the final prices of their products. This would have narrowed profit margins somewhat, despite the recovery in demand.

The war in Ukraine has further driven up energy prices and has exacerbated some of the distortions in global value chains. At the start of the year, the tensions in global supply chains showed early signs of easing. However, once the war broke out, disruptions to supplies from Russia and Ukraine cast a shadow over those indications. Prices in hydrocarbon markets, and in some metal and agricultural commodity markets, have also tightened further. Thus, certain factors that were initially thought to be temporary are proving more persistent, driving up the likelihood of a widespread spillover to other nominal variables of the economy and the emergence of adverse effects on global activity. In particular, a protracted spell of high input costs means less scope for profit margins to continue to absorb these higher costs, thus translating into greater pass-through to final consumer prices. In a setting in which employees' real income is also declining, more persistent inflation could ultimately carry over to wage demands and, therefore, to labour costs, leading to the price-wage feedback loop known as second-round effects.

3.2 The limited recovery in household and business spending

Financial conditions, which remained accommodating throughout 2021, began tightening in the early months of this year. Over the course of 2021, the spending decisions of private agents in the economy benefited from the enduring period of favourable financing conditions. Interest rates on new lending declined across the board as the year progressed, reaching historical lows in all segments (see Chart 1.8.1). However, this trend came to an end in 2022. Although bank lending rates held at low levels in the early months of the year, the recent increase in interbank market yields suggests that

19 In a simple correlation analysis for the period 2003-2021, the strongest correlation between the increase in producer prices for intermediate goods and underlying inflation occurs with a lag of six months. This is a shorter delay than identified for the euro area, where the feed-through of intermediate goods prices to non-energy industrial goods prices would take between 12 and 18 months (see Koester et al., (2021)).

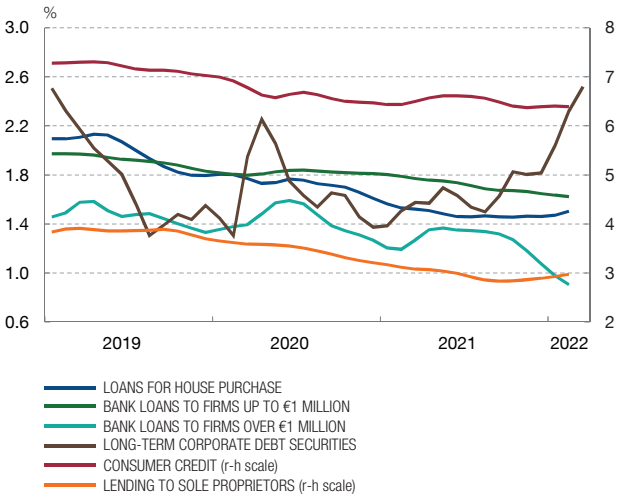
20 See Izquierdo (2022) (only available in Spanish).

Chart 1.8

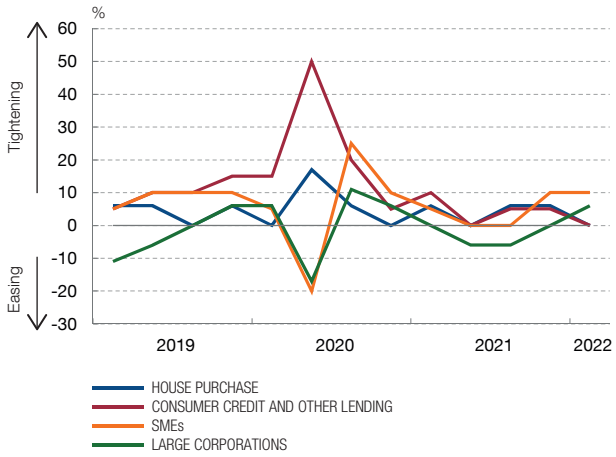
FINANCIAL CONDITIONS REMAINED ACCOMMODATIVE IN 2021, WITH CREDIT SLUGGISH IN MOST SEGMENTS

Interest rates on new bank lending reached new historical lows, while the cost of debt security financing rose from the summer onwards. Credit standards in lending to households and firms tightened slightly over the course of 2021, while easing somewhat in lending to large corporations. However, in 2022 Q1 standards for lending to firms appear to have tightened somewhat. New lending to households for house purchase held at high levels, but new lending in other segments was lacklustre. The debt ratio of the non-financial private sector declined thanks to the rise in GDP.

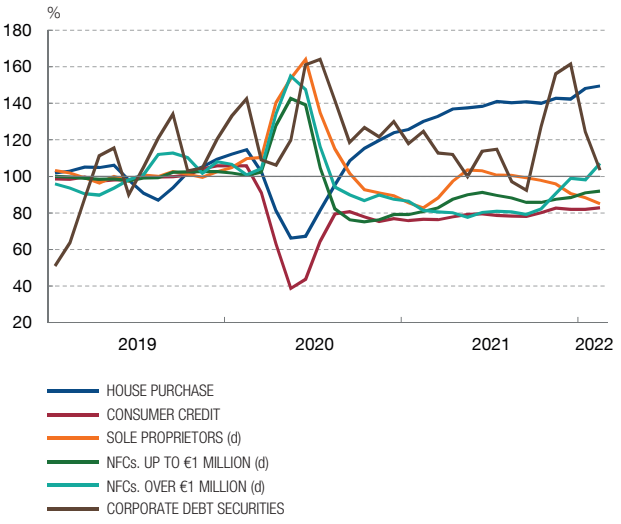
1 COST OF FINANCING (a)



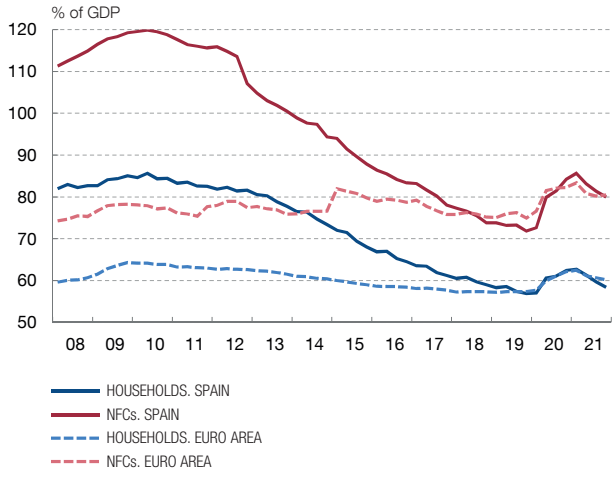
2 BLS: CHANGE IN CREDIT STANDARDS (b)



3 NEW LENDING (c)
3-month cumulative seasonally adjusted flows



4 NON-FINANCIAL PRIVATE SECTOR INDEBTEDNESS



SOURCES: Banco de España, ECB and Thomson Reuters.

a Bank lending interest rates are narrowly defined effective rates (NDERs), i.e. they exclude related charges, such as repayment insurance premia and fees. They are also trend-cycle interest rates, i.e. they are adjusted for seasonal and irregular components (small changes in the series with no recognisable pattern in terms of periodicity or trend).
b Bank Lending Survey. Indicator = percentage of banks that have tightened their credit standards considerably × 1 + percentage of banks that have tightened their credit standards somewhat × 1/2 – percentage of banks that have eased their credit standards somewhat × 1/2 – percentage of banks that have eased their credit standards considerably × 1.
c Bank financing series include financing granted by deposit institutions (DIs) and specialised lending institutions (SLIs).
d Includes renegotiations of previous loans.

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the cost of credit has also begun to rise. Long-term corporate financing gained momentum in the first few months of the year, as a result of rising long-term risk-free interest rates.

According to the Bank Lending Survey (BLS), the supply of credit shrank slightly in some market segments over 2021 and in 2022 Q1 (see Chart 1.8.2). Over the course of last year, credit standards became slightly more restrictive in lending to households and SMEs; by contrast, standards in lending to large corporations eased slightly. In 2022 Q1, credit standards tightened somewhat for firms, irrespective of their size. Against the described background of favourable financial conditions and no credit supply constraints, the mixed developments in demand for financing across the segments was reflected in likewise uneven performances in the corresponding flows (see Chart 1.8.3). These credit flow developments, together with the favourable income trajectory, allowed household debt ratios to decline from mid-2021 (see Chart 1.8.4).

Although significant, the recovery in consumption has not sufficed for this aggregate to return to pre-pandemic levels. Consumption grew at an annual average rate of 4.6% in 2021. However, in 2022 Q1 it declined markedly (-3.6% quarter-on-quarter). Thus, the current level remains well short of the 9.7% recorded in 2019 Q4 (see Chart 1.9.1). Several factors have stymied the recovery in consumption. First, in 2021 gross disposable income failed to reach pre-health crisis levels in nominal terms, despite its relatively high growth rate in the year. Second, over the entirety of last year, concern regarding the health consequences of the pandemic continued to curb Spanish household spending on contact-intensive activities, such as tourism. However, consumption of those services partially normalised over the course of the year (see Chart 1.9.2). Third, supply difficulties for some inputs have caused production to decline in certain industries, limiting households' capacity to cover the demand for certain goods. This is particularly true of vehicles, whose sales continued to decline in 2021 and in 2022 Q1.[21] Fourth, inflation has been a very significant constraint, eroding households' purchasing power. Lastly, the outbreak of the war may have reinforced households' cautious attitude towards their spending decisions.

In this context of a subdued recovery in real consumption, the saving rate declined over the course of 2021. However, this variable held at comparatively high levels in historical terms (see Chart 1.9.3). Specifically, the saving rate was 11.4% of disposable income, 3.6 pp lower than in 2019 but 3.1 pp higher than in 2019. In nominal terms, consumption grew somewhat more robustly than income in 2021, which in part owed precisely to the rise in inflation in the second half of the

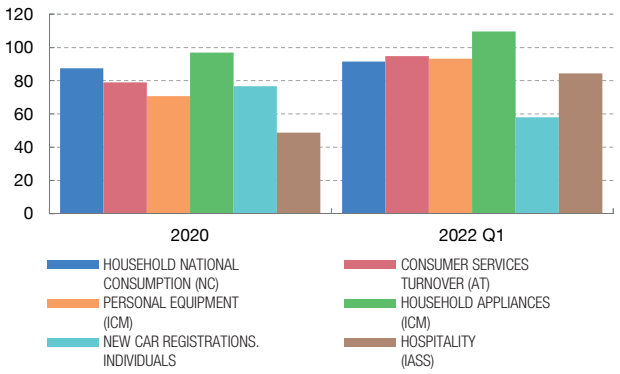
21 By contrast, turnover has been particularly buoyant in the electronic equipment industry, to which such inputs (particularly microchips) were redirected in the early stages of the pandemic when automotive firms scaled back their orders. Spending on this item comfortably outstripped pre-health crisis levels, possibly indicating a persistent shift in consumption patterns in favour of higher-tech goods, a process that the accelerated digitalisation prompted by the pandemic appears to have spurred. Spending on household appliances, which had shown marked resilience in 2020, grew robustly in 2021.

Chart 1.9

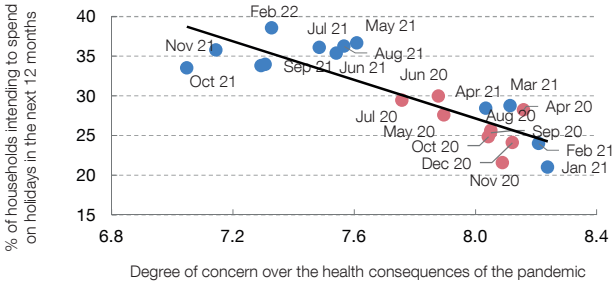
AS COMPARED WITH PRE-PANDEMIC LEVELS, THE RECOVERY IN HOUSEHOLD CONSUMPTION HAS BEEN PARTIAL, WHILE IN AGGREGATE TERMS THE STOCK OF SAVINGS BUILT UP IN 2020 APPEARS NOT TO HAVE BEEN PUT TOWARDS CURRENT EXPENDITURE

The increase in household consumption, which has been uneven across the spending items, was insufficient to reach pre-pandemic levels. The impetus in consumption was limited by the partial nature of the recovery in income, a persistent pandemic-induced adverse impact on the most contact-intensive spending items and the bottlenecks. The saving rate held at a high level, with higher-income households, which built up the bulk of the forced savings in 2020, not putting these funds towards consumption.

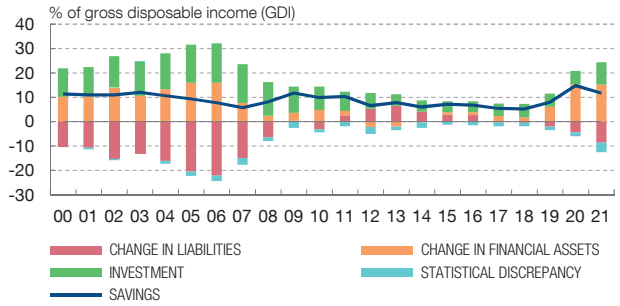
1 CHANGE IN HOUSEHOLD SPENDING (ANNUAL AVERAGE, VS LEVEL OBSERVED IN 2019 Q4) (a)



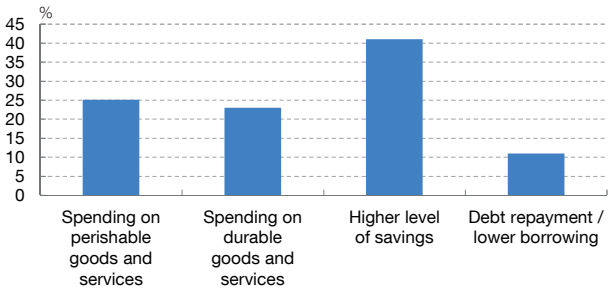
2 CONCERN OVER THE HEALTH CONSEQUENCES OF THE PANDEMIC VS INTENTION TO SPEND ON HOLIDAYS IN THE NEXT 12 MONTHS



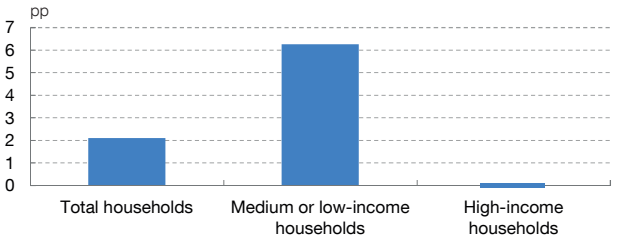
3 USE OF HOUSEHOLDS' GROSS SAVINGS (b)



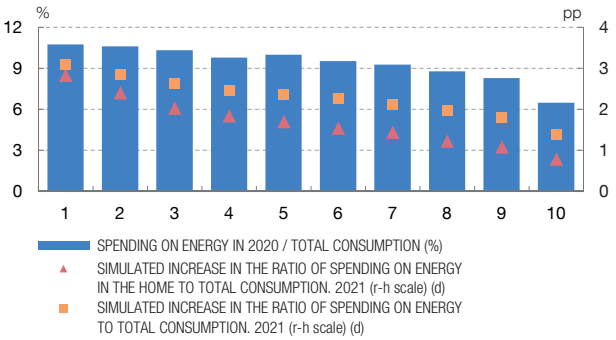
4 EXPECTED USE OF THE SAVINGS BUILT UP BETWEEN JANUARY 2020 AND MARCH 2021. PERCENTAGE DISTRIBUTION. SPAIN



5 MARGINAL IMPACT OF HAVING A STOCK OF SAVINGS ON THE PROBABILITY OF REPORTING A SPENDING INCREASE IN 2021 (c)



6 MEDIAN IMPACT OF THE ENERGY PRICE INCREASE (2021 AVERAGE VS 2020 AVERAGE). BREAKDOWN BY INCOME DECILE



SOURCES: INE, Agencia Tributaria, ANFAC, European Central Bank (Consumer Expectations Survey) and Banco de España.

a Spending on personal equipment and household appliances is based on the retail trade index (ICM). The consumer services figure is based on the turnover of large corporations in this sector, drawn from information provided by the Spanish tax authority (Agencia Tributaria, AT). Activity in the hospitality sector is measured using the services business activity index (IASS). For the spending items based on AT and IASS data, no information is available for March, meaning the 2022 Q1 values are averages for January and February 2022 as compared with 2019 Q4.

b Savings include capital transfers. Investment is gross capital formation plus acquisitions less disposals of non-produced, non-financial assets.

c Results drawn from the ordered probit estimation. It captures the difference in the probability of reporting an increase in spending between households that had saved and those that had not, for total households and each income group.

d Assuming stability in the quantities of energy consumed, and price increases equal to the average observed in 2021.

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year. In any event, the partial recovery in consumption and the persistence of relatively high saving rates were in keeping with the weakness in consumer credit flows (down 22% on mid-2019 levels), despite the favourable financing conditions.

These developments seem to indicate that, in aggregate terms, in 2021 households did not use the surplus savings built up since the onset of the pandemic to purchase consumer goods and services. In 2020, households put a very large share of their income toward saving. This owed, first, to precautionary saving amid the widespread uncertainty caused by the health crisis, and, second, the impossibility of consuming certain services due to the pandemic containment restrictions.[22] Over the course of 2021, despite the gradually declining uncertainty over the health situation and the progressive lifting of restrictions, it appears that households continued to save more than their historical behaviour would suggest, meaning that this stock of savings might even have grown further, at least in aggregate terms.

Information from surveys indicates that, around spring 2021, households expected to put a significant proportion of the savings built up since the start of the pandemic towards spending. The ECB's Consumer Expectations Survey (CES) conducted in March 2021 points in this direction (see Chart 1.9.4). However, the information available suggests that, in practice and in aggregate terms, households did not use the savings built up in 2020 to purchase consumer goods and services over the course of 2021, as they had reported that spring. This does not rule out some groups of households having used a significant share of those savings in this way.

Higher-income households, which accounted for the bulk of the surplus savings accumulated during the pandemic, appear not to have resorted to that stock of savings to increase their consumption. Higher-income households built up a larger volume of funds, in proportion to their income, during the first year of the pandemic. However, in 2021 their spending remained well below pre-health crisis levels, suggesting they had not resorted to the savings built up in 2020, partly because the spending items that remained constrained by the pandemic in 2021 make up a comparatively larger share of their consumption basket (see Chart 1.9.5). By contrast, lower-income households had accumulated more modest surplus savings in 2020. This owed to (i) the crisis affecting their income more severely and (ii) the services whose consumption was limited by the pandemic accounting for a lower share of their consumption basket. However, those funds appear to have been released more freely in 2021.[23] Nonetheless, the use that this group of households

22 Cuenca, Martínez Carrascal and Del Río (2021) includes an analysis of household saving developments in the first few quarters of the pandemic.

23 This appears to owe to a combination of factors. First, the labour market recovery, which would have benefited, precisely, lower-income households, may have allowed greater normalisation in their spending levels by reducing the need for precautionary saving. In addition, the lower share in their consumption basket of items that remained restricted by the pandemic would likewise have contributed towards this normalisation. Lastly, the lower-income households that built up a stock of surplus savings in 2020 probably used those funds to contend with the increase in energy prices in 2021, thus avoiding the need to reduce spending on other items.

has made of their stock of savings does not seem to have affected the aggregate saving rate sufficiently to return it to its pre-pandemic level.

The rise in energy prices is having a significant impact on the purchasing power of household income. Lower-income households are particularly affected by the upturn in prices, since energy bills account for a large proportion of their total spending. Specifically, the rising price of electricity, gas and other fuels observed in 2021 would have increased the share of these items in total nominal spending by 3.1 pp and 1.4 pp in the top and bottom deciles, respectively (see Chart 1.9.6).[24] That gap between income groups is even wider for energy consumed in the home. In addition, lower-income households have less scope to cushion the impact of this inflation on their consumption by reducing their savings, for two reasons: (i) they tend to have lower saving rates, and (ii) only a small proportion of these households were able to build up surplus savings during the pandemic.

Housing starts fell sharply in the early months of the pandemic and have risen steadily since. Building permits have reached levels similar to those seen prior to COVID19. However, the drastic fall-off in housing starts in 2020 Q2 and Q3 continued to weigh down on construction completion volumes over the course of 2021 and the first few months of 2022, and, therefore, on residential investment. More recently, the pace of new construction may have been adversely conditioned by a certain labour supply shortage in some construction sector trades. Supply difficulties affecting particular construction materials, reflected in a steady and marked increase in their cost, may also have begun to have an adverse impact on construction activity.

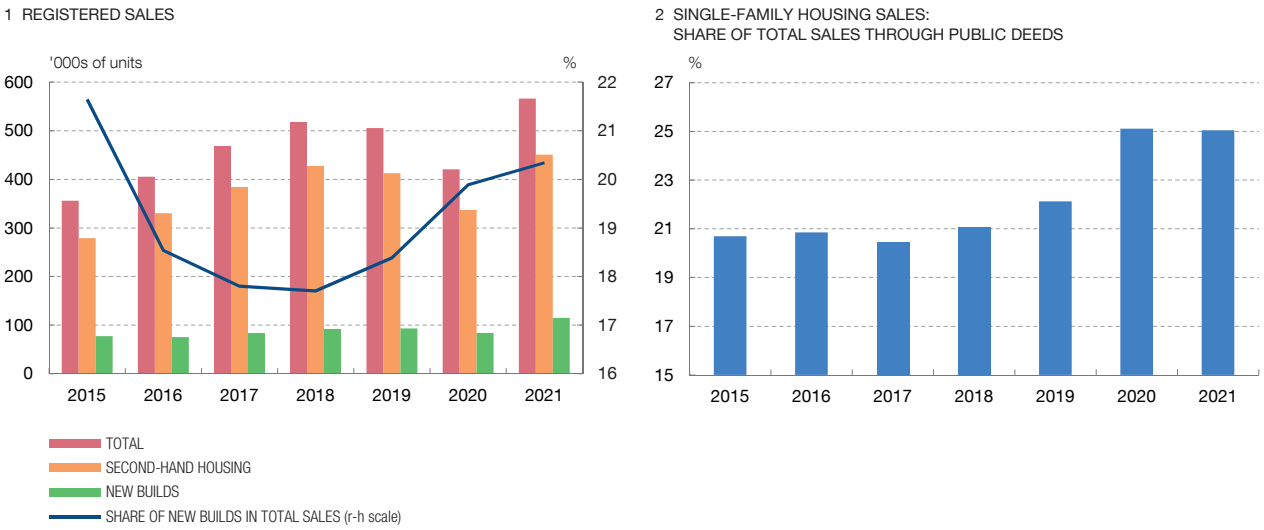
House sales and purchases by households surged in 2021. In contrast with the sluggishness in construction, house sales were more buoyant than in the pre-pandemic period, with this performance extending into early 2022. Housing transactions were particularly robust in the new build segment, where the volume of transactions in 2021 was high enough to more than offset the decline observed during the height of the pandemic restrictions (see Chart 1.10.1). As a result, the share of this market segment in the total has continued to rise, although the second-hand segment has accounted for the bulk of transactions. Various factors were behind the robust housing demand in 2021, including the improved general economic situation amid accommodative financial conditions, the materialisation of investment decisions postponed after the onset of the pandemic and the pandemic-induced shift in household preferences towards larger houses with outdoor space, such as single-family homes (see Chart 1.10.2).

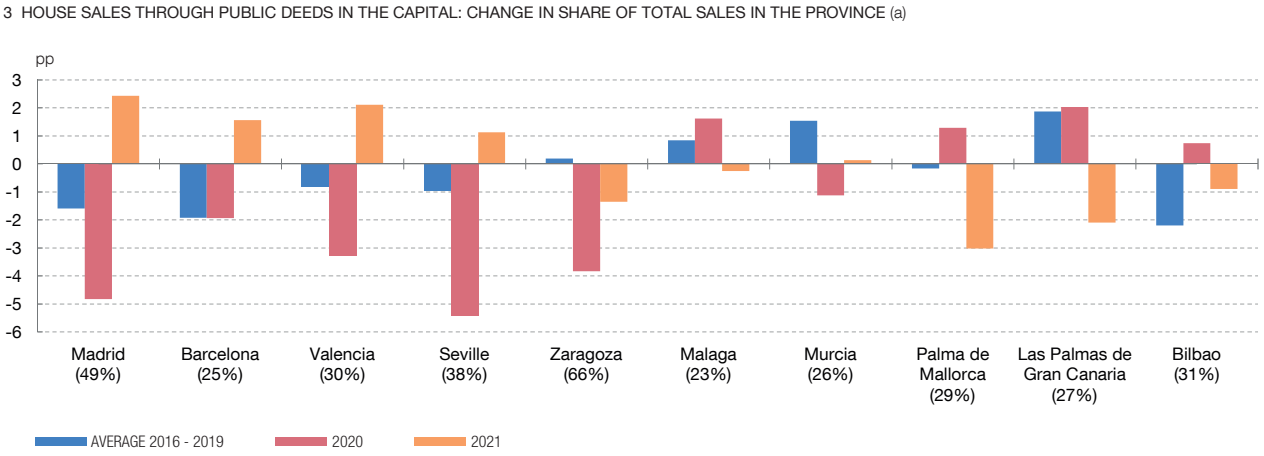
24 These figures are the median impacts in each of these population groups. For a discussion of the macroeconomic effects of higher electricity prices, see Hurtado et al. (2022). Moreover, Chapter 3 sets out the specific inflation rates for the consumption baskets of each group of households, by level of income.

Chart 1.10

HOUSE PURCHASES STOOD CLEARLY ABOVE PRE-PANDEMIC LEVELS IN 2021

New builds continued to grow as a share of total sales, although they remain in the minority. Some of the pre-pandemic trends that accelerated once COVID-19 hit have slowed or partially reversed, as evidenced by the stabilising share of single-family homes in total purchases and the most populous capitals accounting for a larger share of sales within each province.





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

a Beneath the name of each capital (in brackets) is its share in sales in each province in 2021. The ten most populous provincial capitals are selected.

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In the near future, residential investment will be fuelled by spending as part of the Next Generation EU (NGEU) programme. Implementation of the Urban Rehabilitation and Regeneration Plan, under the Recovery, Transformation and Resilience Plan (RTRP), should provide very significant support for residential investment, given the large volume of funds earmarked to housing rehabilitation, particularly for energy efficiency improvements. Residential investment is also set to be galvanised by EU-funded RTRP projects aimed at rehabilitating residential environments and constructing social rental

housing in energy-efficient buildings. That said, implementation of these projects may be delayed by the persistent bottlenecks in the sector.

However, it does not appear that the changes in household preferences will provide an additional impetus to residential investment. Since mid-2021, demand for single-family homes, as a percentage of total sales, has stabilised. Moreover, in the more densely populated urban areas the shift in demand towards suburban locations, which was accelerated by the pandemic (due to remote working and housing supply better matching households' new preferences, with lower average prices than in city centres), tended to reverse in 2021 (see Chart 1.10.3).

Private productive investment grew relatively robustly in 2021. Specifically, this growth stood at an estimated 8.8% (see Chart 1.11.1). When assessing this performance, it should be borne in mind that business investment typically fluctuates far more than final demand. However, in 2021 the growth in the latter variable (7.1%) was not starkly different from that in private productive investment. Growth in this aggregate was fuelled by the effects of the pandemic, both in terms of spurring digitalisation and firms having to adapt to the pandemic containment measures. However, the modest momentum in investment was consistent with the persistent high uncertainty (albeit lower than in 2020) as to how the pandemic would unfold. Its recovery was also curbed by the sector's impaired financial situation as a result of the health crisis, the bottlenecks affecting production, rising energy costs and, in some sectors, the still partial recovery in capacity utilisation as compared with pre-pandemic levels. National Accounts information for Q1 points to investment in capital goods being more buoyant than investment in other construction.

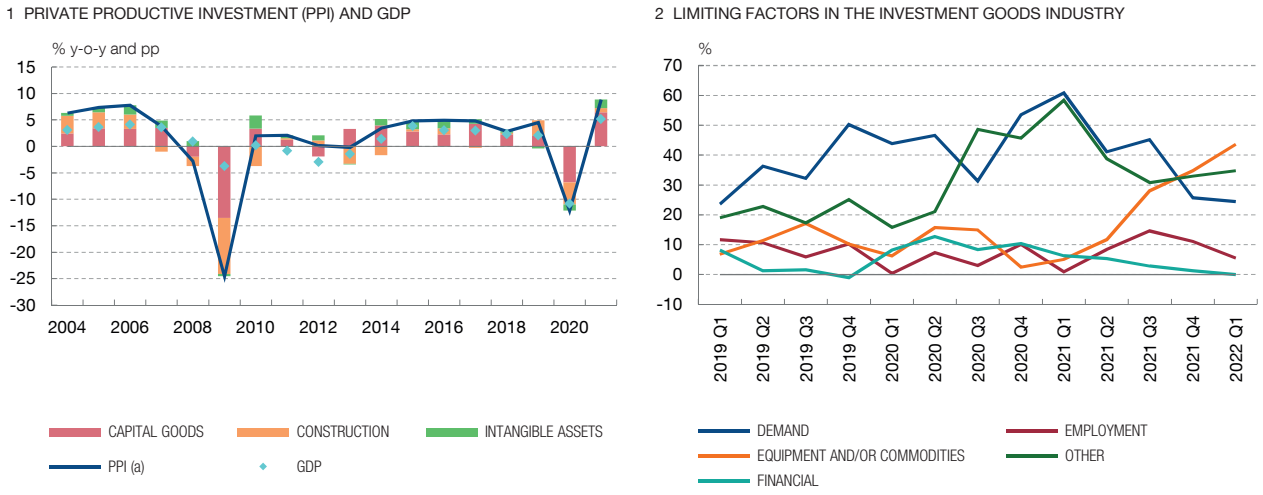
The flow of bank credit to firms showed scant momentum, compared with a stronger performance from funds raised on fixed income markets. The lacklustre credit performance in 2021 owed in part to firms' relatively low external financing needs, after they built up considerable liquidity buffers in 2020. Further, this sluggishness in credit came in tandem with bank financing being substituted for debt security issuance, which held at historically high levels in 2021 (see Chart 1.8.3). The upshot was a moderate increase in firms' outstanding external financing in 2021, although GDP growth meant that the debt ratio declined by 4.3 pp to 79.9% (see Chart 1.8.4). However, firms operating in certain sectors have seen their balance sheet position deteriorate significantly following the pandemic, which may have stymied their investment.

Global value chain disruptions affected capital goods production. The European Commission's business confidence surveys provide information on the factors that companies report as limiting their production. In the capital goods sectors, the proportion of firms reporting shortage of material as a constraint has grown steadily between 2021 Q1 and 2022 Q1, to become the main factor limiting their production (see Chart 1.11.2). The considerable impact of bottlenecks on capital goods sectors is consistent with the high proportion of imported inputs that they use.

Chart 1.11

BUSINESS INVESTMENT HAS SHOWN SOME BUOYANCY, BUT NOT ENOUGH TO RECOVER PRE-PANDEMIC LEVELS

Private productive investment, which increased 8.8% in 2021, has not yet recovered pre-pandemic levels. Several factors limited its growth, such as the impairment of firms' financial situation as a result of the health crisis, bottlenecks and rising energy costs.



SOURCES: INE, Banco de España, European Commission and IHS Markit.

a PPI in real terms is estimated by deducting investment in housing and public sector investment from total investment. All of the information required for these calculations is provided by the INE, except for the public investment deflator which is estimated based on data for other deflators.

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The surge in energy costs limited the recovery in investment, albeit highly unevenly across sectors. The cost of energy used in the production process as a percentage of turnover stood at around 2% in 2019, according to information from the Business Structure Survey conducted by the National Statistics Institute (INE).[25] However, this aggregate figure masks considerable disparity by sector of activity and by firm size, indicating a highly uneven impact of increased energy costs on total costs. Specifically, energy costs represent more than 12% of turnover in transportation and in manufacture of construction materials, and 6% in manufacture of certain mineral-derived products and in mining and quarrying. By contrast, these costs amount to less than 0.6% of turnover in manufacture of transport equipment; information and communication activities; professional, scientific and technical activities; administrative and support service activities; and in electricity, gas, steam and air conditioning supply. Moreover, the structure of energy spending also varies substantially by activity. For instance, for transportation and trade the largest

25 See Matea, Rosa, Martínez Casares and Vázquez Martínez (2021). The elasticity of activity in response to the rising price of an energy source may be broken down into two parts: (i) the parameter measuring the decrease in firms' energy consumption due to the increased cost of that energy source, and (ii) the parameter that proxies the fall in output associated with lower energy usage. For example, for the first of these parameters, and for electricity in Spain specifically, Labandeira, Labeaga and López (2016) find a value of around 0.3. The second parameter is proxied by the ratio between the cost of the energy and turnover (e.g. 0.002 for electricity). The product of these two parameters indicates that a 20 pp increase in the price of electricity could reduce the economy's aggregate output by 0.1 pp in the short term.

component in the energy bill is fuel (other than electricity) and natural gas, while for industry and services electricity is the main component. Lastly, a breakdown by firm size shows that, in the trade, transportation and services sectors, medium-sized enterprises (20 to 49 employees) consume somewhat more energy than other firms. Conversely, in industry no significant differences in energy consumption by firm size are observed.

Capacity utilisation has only partially recovered following the decline in 2020. Capacity utilisation has increased most robustly in the consumer goods and intermediate goods sectors, where pre-pandemic levels were surpassed in early 2022. This explains why demand for investment goods is higher in these sectors.

The cross-sector differences in activity developments were reflected in disparate performances from the various investment components in 2021. Investment in other construction and in transport equipment performed less favourably than investment in machinery and in intangible goods, both of which had already reached their pre-pandemic levels by end-2021. The uneven trajectories of the various investment components owe to the divergent activity developments across the sectors. These sectors invest in the various types of assets very differently and have been affected to varying extents by the health crisis and the global supply chain disruptions.

The recovery in investment in machinery has been comparatively stronger. This is due to the pandemic containment measures having a lesser impact on manufacturing sectors, which account for a large proportion of such investment.[26] By contrast, in other sectors that were particularly hard hit by the pandemic, such as hospitality, investment in machinery accounts for a very small share of total gross capital formation in this asset.

Investment in transport equipment has been hampered by developments in the transportation and storage sector. These sectors, which account for a larger relative share of this investment component,[27] have been severely affected both by the restrictions imposed to contain the pandemic and the disruptions in global supply chains. Both factors have constrained the renovation of plant capacity at firms in these sectors and, thus, their gross fixed capital formation in transport equipment. These developments appear to have been partly offset by increased investment in transport equipment by other industries, such as the trade sector, which have had to ramp up investment in such assets due to the pandemic prompting an increase in online sales. Lastly, the health crisis has also spurred the digitalisation of firms and, consequently, their investment in intangible assets.

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26 In 2019, the latest year for which a breakdown of investment by sector of activity is available, investment by the manufacturing sectors in machinery and other equipment accounted for 26% of the total investment in such assets. See Pacce (2022).

27 In 2019, the transportation and storage sector accounted for 34% of investment in transport equipment. Administrative and support service activities and retail and wholesale trade were the next two largest sectors in terms of investment in transport equipment (with shares of 26% and 16% of the total, respectively).

To date, NGEU has provided a relatively modest boost to investment. The information available suggests a relatively low volume of project implementation under the programme so far, although this should increase over the next two years. Further, there are reasons to expect investment in intangible assets to grow. These include the organisational changes prompted by the pandemic (the digitalisation of activity, the roll-out of remote working and online sales, among others) and the challenges associated with the changing geopolitical situation (e.g. cyber security). The persistence of international transport disruptions could also drive up investment in those sectors.

3.3 Developments in foreign trade: the recovery in tourism

Net external demand contributed nearly 0.5 pp to GDP growth in 2021. This contrasts with the robustly negative contribution of the previous year (-2.2 pp). Developments in the different flows – exports or imports, goods or services (both tourism and non-tourism) – were highly uneven. Specifically, at end-2021 trade in goods stood at levels only slightly higher than a year earlier, due to the growing impact of global bottlenecks. By contrast, exports of tourism services recovered vigorously over the course of the year, as a result of the improving health situation and the gradual lifting of the containment measures. These developments extended into early 2022, a period of continued sluggishness in trade flows of goods and buoyancy in inbound tourism.

In 2021 total exports performed in line with the developments observed in destination markets (see Chart 1.12.1). Price competitiveness contributed negatively to total export growth. The cumulative loss of competitiveness reflected (i) the positive differential, against the euro area, in industrial producer export price inflation and in domestic manufacturing producer price inflation, and (ii) the nominal effective exchange rate appreciation against other developed countries.

The buoyancy of goods exports was hampered over the course of the year by global production chain disruptions. Further, in early 2021 Brexit had something of an adverse impact on goods exports, although this was temporary and limited.[28]

Developments in goods exports are uneven by geographical area and by product type. In terms of geographical area, sales to the rest of the euro area have been more buoyant than non-EU sales (see Chart 1.12.2). By product type, supply disruptions are affecting car exports in particular. These have declined significantly

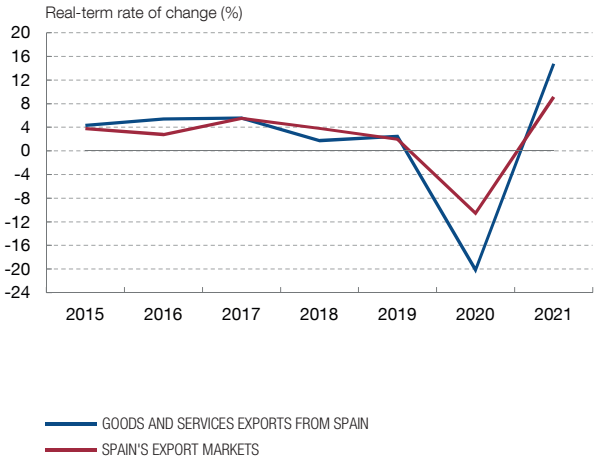
28 The United Kingdom's departure from the European Union and the frictions caused by new customs procedures hampered goods exports to the United Kingdom (which represented 6.8% of the total in 2019). In fact, as early as after the Brexit referendum Spanish trade began to be diverted towards other European markets due to uncertainty surrounding negotiations over the new framework for bilateral relations between the European Union and the United Kingdom (see Gutiérrez, Lacuesta and Martín Machuca (2021)).

Chart 1.12

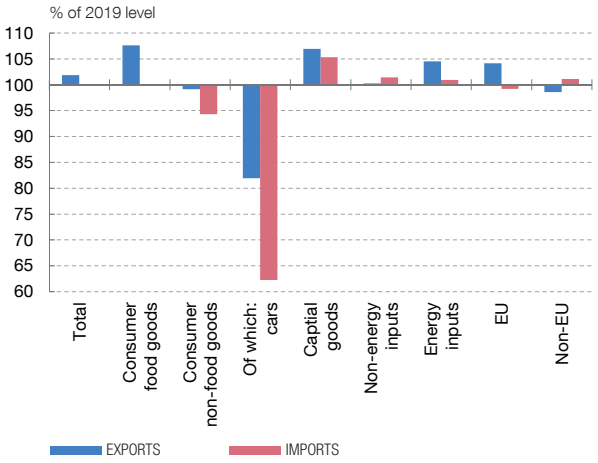
NET EXTERNAL DEMAND MADE A POSITIVE CONTRIBUTION TO GDP IN 2021

Net external demand added nearly 0.5 pp to GDP growth in 2021 thanks to the recovery in tourism exports. Within goods exports, the negative performance of car exports is noteworthy. The number of exporting firms increased in 2021, following a decline in the previous year.

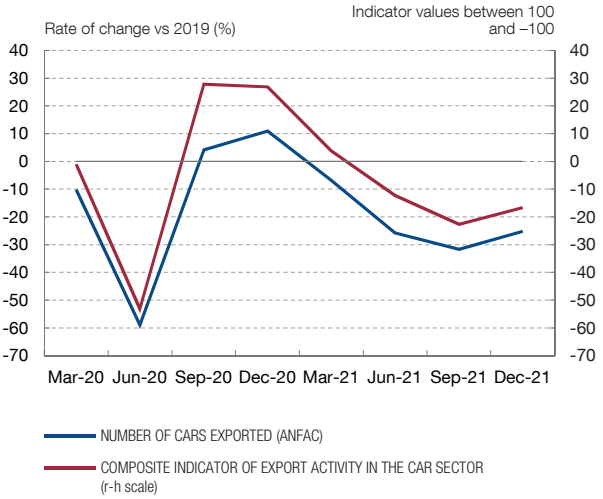
1 CHANGES IN EXPORTS



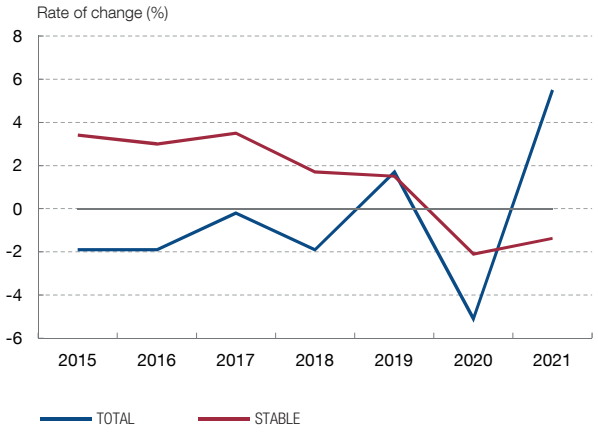
2 REAL GOODS EXPORTS AND IMPORTS
2021 (as a % of 2019 level)



3 CAR EXPORTS



5 NUMBER OF EXPORTERS (a)



SOURCES: ECB, Banco de España, Ministerio de Industria, Comercio y Turismo, Ministerio de Asuntos Económicos y Transformación Digital and INE.

a Excludes operators exporting less than €5,000. A stable exporter is a firm that has been exporting for at least four consecutive years.

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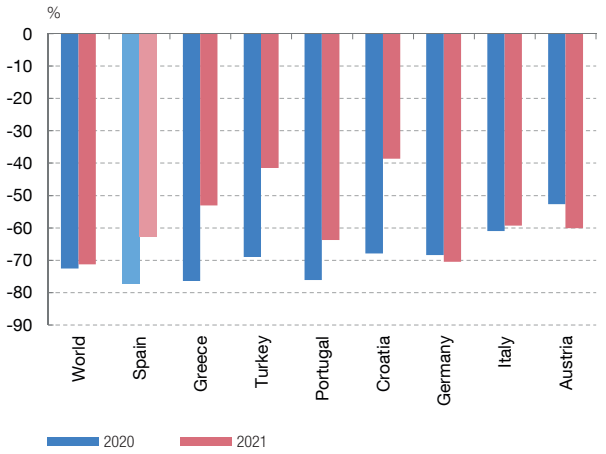
(above all since mid-2021), reflecting this sector's strong level of integration in global value chains and, in particular, its reliance on certain electronic components, such as microchips, whose global production capacity has proven insufficient to satisfy demand. In 2021 as a whole, car exports were down by just over 20% on 2019 levels (see Chart 1.12.3). In 2022, the war in Ukraine has affected the global production of certain vehicle components, although Spanish manufacturers are less reliant than others on Ukraine-based suppliers.

Chart 1.12

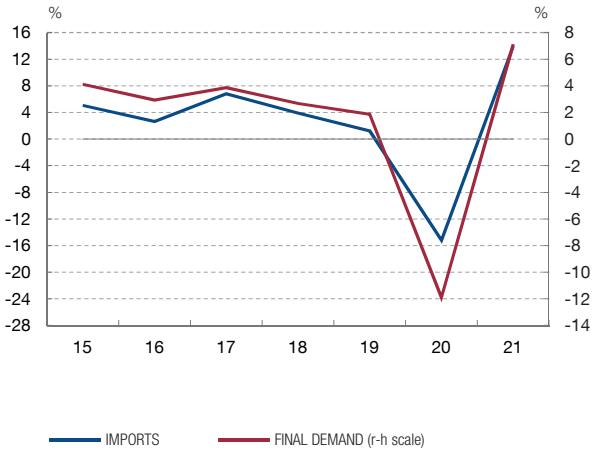
NET EXTERNAL DEMAND MADE A POSITIVE CONTRIBUTION TO GDP IN 2021 (cont'd)

The travel surplus stood at 1.4% of GDP (according to the Rest of World Account), compared with 0.7% of GDP in 2020. The recovery in tourism was, however, less robust than in other countries. The country's net lending capacity increased as a result of the recovery in the tourism services balance and the increase in capital transfers.

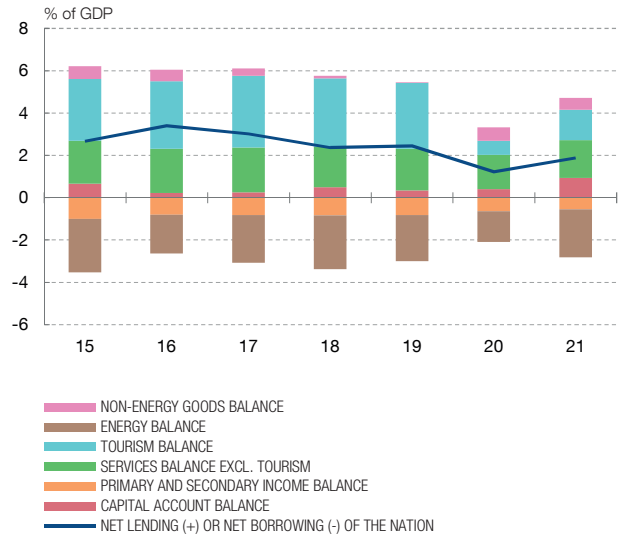
5 INTERNATIONAL TOURIST ARRIVALS
Rate of change vs 2019



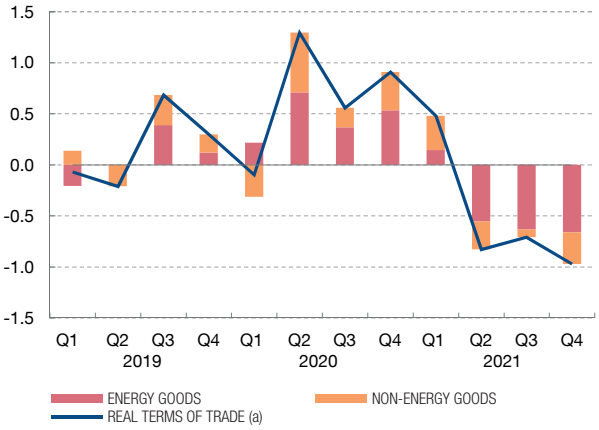
6 IMPORTS AND FINAL DEMAND
Real-term rate of change



7 NET LENDING (+) OR NET BORROWING (-) OF THE NATION



8 INCOME EFFECT OF REAL TERMS OF TRADE
(in pp of GDP)



SOURCES: ECB, Banco de España, Ministerio de Industria, Comercio y Turismo, Ministerio de Asuntos Económicos y Transformación Digital, INE and World Tourism Organization.

a Calculated as the difference between the year-on-year growth rates in the prices of export goods and import goods (according to the unit value index) weighted by the respective shares in GDP of export goods and import goods.

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The number of goods export companies recovered over the course of 2021. The total number of exporters exceeded pre-pandemic levels by 5.5% (see Chart 1.12.4).[29] However, in 2021 the stable export base (firms that have

29 Only exporters with sales abroad exceeding €5,000 are considered, given the particularities of firms whose exports fall below this threshold. In any event, the latter account for a negligible share of total exports.

been exporting for at least four consecutive years) was still 1.4% down on two years earlier.

Real tourism exports recovered gradually but robustly over 2021, in keeping with the easing of international travel restrictions. The recovery, in tandem with headway in the vaccination campaign, was partial and fluctuated in line with renewed outbreaks of the pandemic. In December 2020, tourist arrivals and expenditure were down to 15.5% and 13.9%, respectively, of their December 2019 levels. However, by February 2022 those figures had climbed to 72.1% and 80.6%, respectively. As compared with other international destinations, tourism activity in Spain has been stymied by (i) unfavourable epidemiological developments in the country at the beginning of the summer high season and (ii) reliance on British tourism, which has recovered more slowly than other tourism source markets (see Chart 1.12.5).[30] This is borne out by estimates using panel data of overnight stays by foreigners in a broad set of European countries.[31] Further, a particularly high share of tourist arrivals were by plane, a mode of travel that was hit harder by containment measures than overland transport.

The growth in imports during 2021 was in keeping with the recovery in final demand (see Chart 1.12.6). The buoyancy in imports was consistent with sizeable purchases of products with a high import content, such as medicines/pharmaceuticals, IT and telecommunications products and industrial machinery.[32] This countered, at least partially, the weakness in car purchases and paved the way for a more robust performance from goods imports over the course of the year, outstripping pre-crisis levels by just over 6.1% in 2021 Q4. Meanwhile, tourism imports recovered considerably more sluggishly than tourism receipts, reflecting the shift in the Spanish market towards domestic tourism.

The Spanish economy's net lending capacity recovered slightly in 2021. In the two years leading up to the pandemic, this variable stood at 2.4% of GDP (see Chart 1.12.7). However, in 2020 the health crisis halved this balance as a result of the deteriorating travel surplus, partly offset by the decline in the goods trade deficit, thanks above all to the lower cost of imports. These effects tended to reverse in 2021. On the one hand, the sharp rise in commodity import prices led to a marked deterioration in the real terms of trade (see Chart 1.12.8). Specifically, in 2021 the euro-denominated price of imported oil rose by 57% in annual average terms, significantly driving up the net energy import deficit. On the other hand, the improving

30 Authorities in Britain (the largest tourism source market, accounting for around 20% of the total) maintained stringent restrictions on overseas travel until the end of June 2021 (see García, Gómez Loscos and Martín (2021)).

31 Specifically, according to an estimate based on monthly panel data of overnight hotel stays by foreigners between June 2020 and January 2022, the greater the incidence of the pandemic (compared with the euro area as a whole) and the greater the reliance on British tourism, the slower the recovery in overnight hotel stays in each country (compared with 2019 levels).

32 See García, Martín and Viani (2020) for a specific analysis of medical products.

health situation led to stronger inbound tourism flows. Likewise, the non-travel service balance and the primary and secondary income balance improved, albeit to a lesser degree. These developments, together with the expanding capital account surplus (driven by income from NGEU funds), saw lending capacity increase in 2021 by 0.7 pp to 1.9% of GDP. Despite the external surplus, the net debtor position vis-à-vis the rest of the world remains relatively high (70% of GDP at end-2021).

3.4 The partial correction of public finances

Public finances continued to show a considerable imbalance in 2021. The budget deficit corrected in 2021 from 10.3% to 6.9% of GDP (see Chart 1.13.1).[33] This improvement owed to both a slowdown in expenditure and to a robust income recovery. The relatively upbeat view of these developments is attenuated by certain underlying circumstances.

A significant portion of the easing in expenditure growth owed to the marked reduction in pandemic-related spending. The improvement in the health situation and, subsequently, in economic activity allowed the general government sector to somewhat reduce the support it had been providing to private agents since the onset of the crisis. According to the National Audit Office (IGAE), total pandemic-related spending declined by 19% between 2020 and 2021, falling from 3.9% of GDP to 3%.[34] In the main, this decline owed to the reduction in the number of furloughed workers and in the number of self-employed individuals whose activity has been suspended temporarily.

By contrast, spending not linked to the health crisis remained buoyant, growing 6.9% on the previous year. This includes NGEU-related spending, which generates an expansionary fiscal impulse but has zero impact on the deficit since it is EU funded. The IGAE has not reported what portion of 2021 spending and income was accounted for by NGEU. However, the information available on income from abroad suggests it was far lower than that initially budgeted (2.6% of GDP). The increase in non-pandemic-related spending also owes to the introduction of the Minimum Income Scheme and to the compensation provided to pensioners for the deviation between actual inflation and that forecast in the 2021 State budget. The changes in the various items, pandemic-related or otherwise, saw

33 The 2020 figure has been revised down by 0.7 pp from that published previously. This owes to the change regarding the date on which Sareb was reclassified as part of the general government sector. Although Sareb was initially only included in public finances from end-2020, a decision was later made to include it since its creation in 2012. As a result, public finance data from that year forward have been revised, the upshot being a larger deficit between 2012 and 2019 and a lower deficit in 2020.

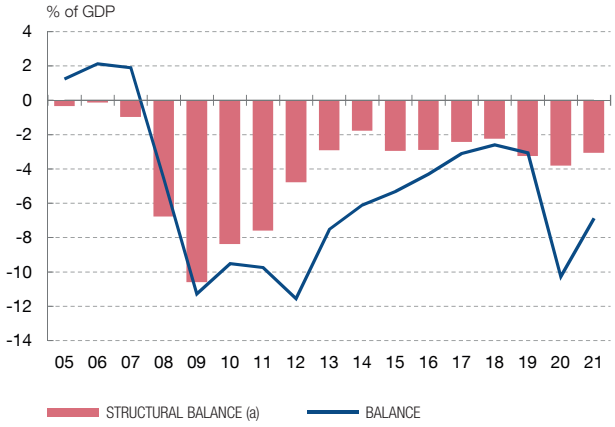
34 The items considered include social benefits for furloughed workers and the self-employed, other social benefits for temporary labour incapacity, waived social security contributions, spending on health and social care and subsidies and capital transfers to firms, including expected net losses on State-backed loans to firms, which were included for the first time in 2021 and were quantified at €4.4 billion. Excluding this item, the drop in pandemic-related spending would have been significantly larger (-29%).

Chart 1.13

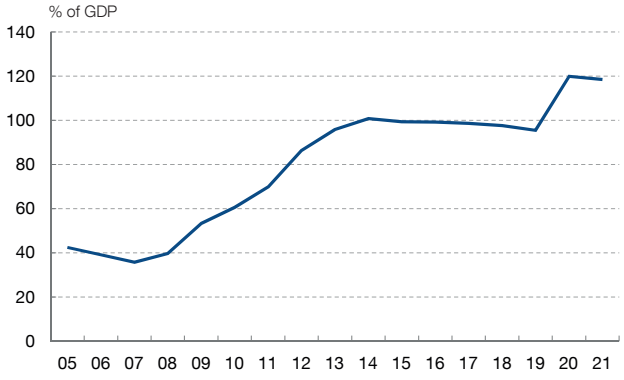
PUBLIC FINANCES RECOVERED PARTIALLY IN 2021

The general government deficit declined from 10.3% of GDP in 2020 to 6.9% in 2021, owing to strong revenue growth and the slowdown in expenditure. However, it remains at a very high level. The debt-to-GDP ratio ended the year at 118.4%, up 22.9 pp on the end-2019 level, which represents a considerable source of vulnerability for the Spanish economy going forward.

1 GENERAL GOVERNMENT TOTAL AND STRUCTURAL BALANCE



2 PUBLIC DEBT



3 GENERAL GOVERNMENT REVENUE AND EXPENDITURE

Percentages of GDP	2020	2021	2021-2020	Y-o-y rate (%)	Rate vs 2019 (%)
Revenue	41.5	43.7	2.2	13.2	7.9
Indirect taxes	11.3	12.1	0.9	15.6	2.2
Direct taxes	11.2	11.9	0.7	14.5	11.2
Social security contributions	14.5	14.3	-0.1	6.3	7.3
Other revenue (b)	4.6	5.4	0.8	25.9	16.3
Expenditure	51.8	50.6	-1.2	5.0	15.8
Compensation	12.5	12.2	-0.3	4.9	9.4
Other final consumption expenditure	8.9	8.9	0.0	7.0	9.9
Social benefits	20.4	18.9	-1.4	-0.2	15.9
Actual interest paid	2.2	2.2	-0.1	3.4	-8.0
Gross capital formation	2.6	2.7	0.0	8.2	21.3
Other (b)	5.0	5.7	0.7	21.7	61.2
Balance	-10.3	-6.9	3.4	-28.1	117.3
Debt	120.0	118.4	-1.5	6.1	20.1

SOURCES: Banco de España, IGAE and Ministerio de Hacienda.

a Banco de España estimate.
b Includes NGEU revenue/expenditure. By convention, the expenditure allocated to the programme must exactly match the revenue, meaning its effect on the balance is zero.

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total expenditure increase by 5% last year, outstripping the spending in 2019 (the last year prior to the onset of the pandemic) by 16%.

The tax amendments implemented in 2021 had a roughly neutral aggregate impact on the fiscal policy stance. The low quantitative importance of the discretionary tax increases introduced in 2021 is consistent with the need to buttress

what is a partial recovery.[35] Over the course of 2021, the moderate tax increases established at the start of the year were partially offset, in terms of total tax revenue, by the tax cuts introduced to cushion the impact of the sharp increase in electricity prices on household purchasing power.[36]

In 2021, government receipts recovered more robustly than the macroeconomic variables proxying its tax bases would suggest. Total tax revenue grew very markedly as compared with 2020 (by 13%), with the items that had fallen furthest in 2020, such as indirect taxes, recording the sharpest gains. The notable revenue growth is consistent with the developments in the main tax bases (both on income and consumption) recorded by the Spanish tax authorities. These clearly exceeded pre-pandemic levels, in contrast to their National Accounts equivalents. In fact, the effective tax burden, including social security contributions, were, as a percentage of GDP, 3.7 pp higher in 2021 than in 2019.[37] It is worth pointing out that there is considerable uncertainty at present over the causes of the recently divergent performances of tax and National Accounts variables, which have historically been closely correlated. In particular, on the information available it is impossible to precisely quantify what portion of the relatively sharper increase in public revenue as compared with GDP observed in recent quarters owes to structural factors – e.g. associated with the growing digitalisation of activity prompted by the pandemic – or to essentially temporary factors – in which case public revenue could eventually be expected to perform less buoyantly than economic activity at some point over the coming quarters.

Quantifying the general government structural balance is particularly complex in the current setting, although a prudent estimate would point to Spain's economy still maintaining a relatively high structural deficit in 2021. Indeed, in addition to the difficulty in assessing the economy's potential output following the pandemic, there is the aforementioned uncertainty over the causes behind the considerable buoyancy of public revenue in recent quarters. The lessons of the expansionary spell enjoyed by the Spanish economy in the run-up to the global financial crisis suggest a prudent approach is advisable. In particular, during that expansionary period public revenue was also robustly buoyant; this was often treated as a structural phenomenon, but ultimately proved eminently temporary – and closely linked to real estate activity. In this connection, if, in the current context, a prudent approach is adopted, whereby a not insignificant portion of the recent increase in public revenue is deemed temporary, the Spanish economy's structural deficit at end-2021 would still be at high levels, above the average for the period 2013-2019 (see Chart 1.13.1).

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35 Specifically, new taxes were introduced on financial transactions and on certain digital services, the rate of VAT on sugary beverages and on insurance contracts was raised, income tax (IRPF) rates were raised in the highest income brackets, and corporate income tax deductions were reduced. Overall, these measures increased tax revenue, in ex ante terms, by 0.3% of GDP.

36 These measures lowered tax revenue by an estimated 0.2% of GDP.

37 These figures do not include funds received under the NGEU framework.

The government debt ratio declined slightly in 2021. The imbalance in public finances continued to drive up the debt ratio numerator. However, this ratio fell slightly (by 1.6 pp to 118.4%) thanks to the upturn in nominal GDP, whose growth rate was 7.2%. As a result, the correction to the sharp, pandemic-induced increase in the debt-to-GDP ratio (more than 20 pp) was minimal (see Chart 1.13.2).

3.5 The labour market proved highly robust until the outbreak of the war

The recovery in employment was particularly vigorous in 2021, but it has shown some signs of waning in early 2022. Robust job creation in 2021 meant that in November effective social security registrations – i.e. total registrations excluding furloughed employees – recovered their pre-pandemic level. These favourable developments have continued, albeit with some signs of reduced momentum, in the first months of this year. The effects of the war on net job creation in Spain were barely noticeable in the February data, given that the war broke out with just three business days left in the month. However, the March data were somewhat less encouraging. Specifically, the monthly rate of change in social security registrations in March was 0.7%, 0.1 pp below the average for the period 2016-2019, with the favourable performance of the services sectors (boosted by the elimination of the pandemic containment measures) standing in contrast to less encouraging developments in the manufacturing sectors most affected by the uncertainty induced by the war, the bottlenecks and higher commodity prices. As a result, effective social security registrations stood 2.1% above their level in February 2020, the month immediately before the outbreak of the pandemic.

The pattern of the recovery displays notable cross-sector differences. This unevenness is consistent with the developments observed in activity at sectoral level, which have been highly influenced by the different impact the containment measures have had on each productive sector (see Chart 1.14.1). In particular, the labour market recovery is weaker in some services, such as hospitality and recreation and leisure. This is consistent with their sensitivity to the restrictions on activity and movement and, especially, with the incomplete recovery in tourism flows. These sectors are still a long way off recovering their February 2020 employment levels. Conversely, employment is clearly above pre-crisis levels in information and communication activities (boosted by factors such as the e-commerce boom and remote working) and in non-market sectors (driven by hiring needs during the pandemic). In the public sector, employment is around 10 pp higher than the pre-pandemic level, while in the private sector the difference decreases to approximately 1.5 pp.

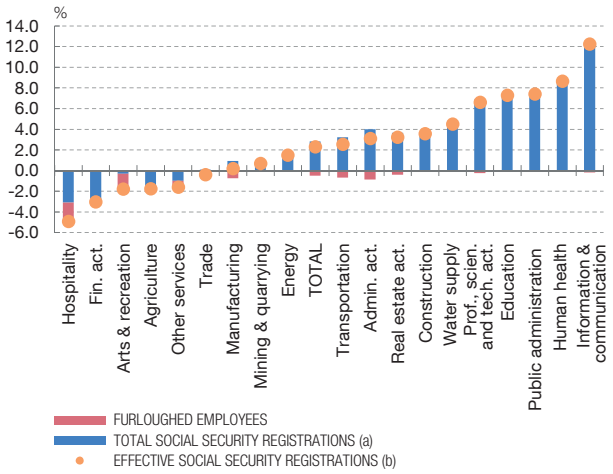
Total hours worked in 2021 performed somewhat less favourably than the number of persons employed. Other sources of quarterly data help flesh out the labour market performance over the last year. Specifically, both the Spanish Labour Force Survey (LFS) and the Quarterly National Accounts (QNA) confirm the labour market's vigorous

Chart 1.14

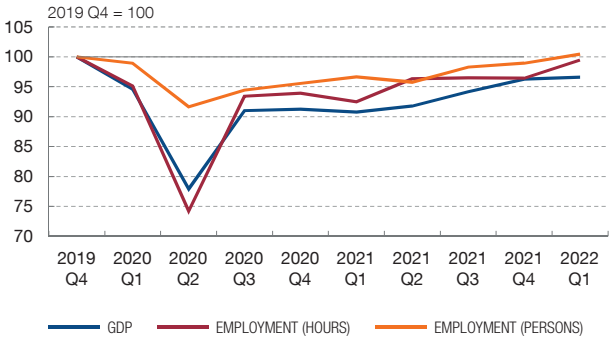
EMPLOYMENT HAS SHOWN HIGH MOMENTUM

Employment has recovered more vigorously than GDP. The recovery in employment by productive sector is indicative of the different impact of the containment measures on each sector, which is reflected in the differences across regions and groups of workers.

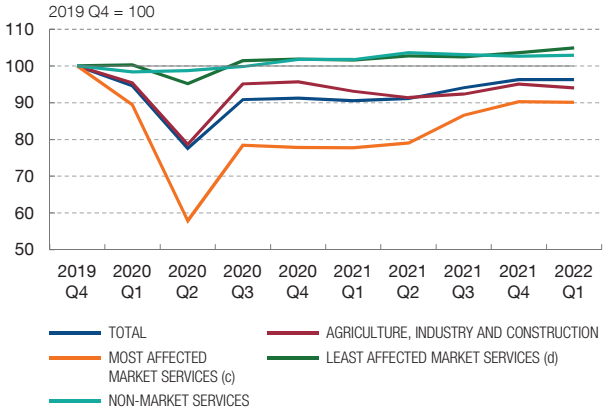
1 TOTAL SOCIAL SECURITY REGISTRATIONS, FURLOUGHED EMPLOYEES AND EFFECTIVE SOCIAL SECURITY REGISTRATIONS, BY SECTOR. CHANGE IN MARCH 2022 VERSUS FEBRUARY 2020



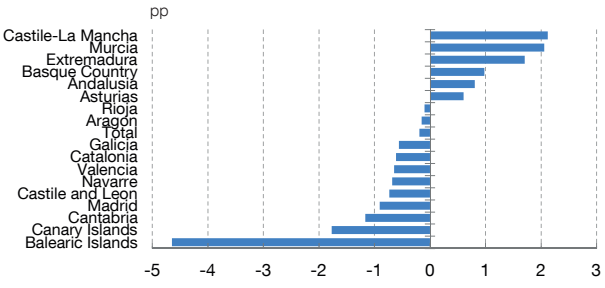
2 GDP AND EMPLOYMENT



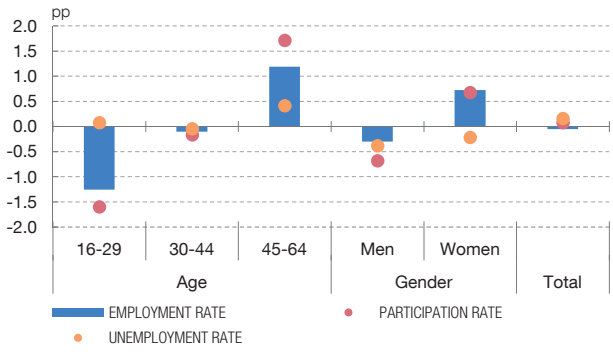
3 GROSS VALUE ADDED, BY SECTOR



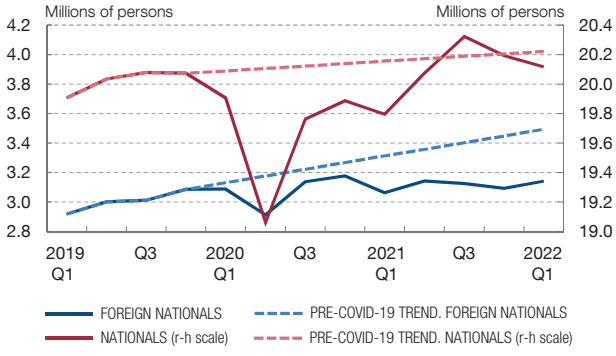
4 EFFECTIVE EMPLOYMENT RATE, BY REGION
Change between 2019 Q4 and 2021 Q4



5 CHANGE IN THE EFFECTIVE EMPLOYMENT RATE BETWEEN 2021 Q4 AND 2019 Q4 (e)



6 LABOUR FORCE



SOURCES: INE, Ministerio de Inclusión, Seguridad Social y Migraciones and Banco de España.

a Seasonally adjusted series.
b Effective social security registrations are defined as total registrations less furloughed employees.
c Trade, transportation and hospitality; professional, scientific and technical activities and administrative activities; and arts and recreation.
d Information and communication; financial and insurance activities; and real estate activities.
e The effective employment rate is defined as persons employed as a percentage of the labour force, deducting from the total figure for persons employed in the LFS the furloughed employees in 2021 Q4, according to Ministry of Inclusion, Social Security and Migration data.

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recovery throughout 2021, albeit at a somewhat slower pace than social security registrations. On both statistics, employment, measured in numbers of persons, was very close to its pre-crisis level in 2021 Q4 (see Chart 1.14.2). In terms of total hours worked, there was still a 4 pp gap in that period. However, it has narrowed significantly in 2022 Q1.

One discernible characteristic since the crisis began is employment, measured in numbers of persons, performing markedly better than GDP. Various explanations for this have been offered, none of which are easily verifiable. These include: the pandemic restrictions (e.g. limitations on capacity) forcing firms to maintain a higher volume of employment for a given level of activity; the public sector's greater hiring needs to deal with the fallout from the health crisis; and employees returning from furlough in droves in expectation of a recovery in activity that subsequently did not fully materialise. The discrepancy between GDP and hours worked since the recovery began was less stark and, in addition, decreased significantly in 2021 H2.

The apparent discrepancy between the behaviour of activity and employment's more positive performance was particularly marked in some sectors. In the aggregate of agriculture, industry and construction, effective social security registrations exceeded the pre-crisis level by 0.7 pp on average in 2022 Q1, while their overall GVA remained 6 pp below that level (see Chart 1.14.3). The divergence was particularly notable in construction: in 2022 Q1 employment in this sector was 3.8 pp above its pre-crisis level, but GVA remained 12.9 pp below that mark. These differences are not easy to interpret. They are perhaps attributable to GVA and employment adjusting to such a severe crisis at different speeds, such that the differences tend to disappear when observing the relationship between the two variables over a longer period.

The uneven behaviour of employment across sectors is reflected in the performance of this variable at regional level. According to the LFS, in 2021 Q4 effective employment in Spain as a whole was 0.2 pp below its 2019 Q4 level (see Chart 1.14.4). However, this figure conceals very high regional heterogeneity, which is the result of differences in the sectoral composition of economic activity. Specifically, the recovery in employment in the regions that are most reliant on tourism (above all inbound tourism, such as the island regions), lagged farther behind. In the Balearic Islands and the Canary Islands it stood 4.6 pp and 1.8 pp, respectively, below its pre-pandemic level. By contrast, in the regions with a lower share of inbound tourism and where the primary sectors and public employment are more important, such as Castile-La Mancha, Murcia and Extremadura, effective employment at end-2021 was approximately 2 pp above its pre-health crisis level. In the first few months of 2022, the most tourism-dependent regions were still lagging farthest behind in the employment recovery process.[38]

38 The seasonality of these series prevents a consistent comparison between the situation in 2022 Q1 and 2019 Q4. Yet compared with 2019 Q1 the negative gap in terms of the employment rate remains wider in the island regions. However, this comparison also includes developments throughout 2019, a period unaffected by the pandemic.

The significant disparity in the changes in the employment rate by gender and age group replicate the changes observed in participation rates. At end-2021, the employment rate, i.e. the percentage of the persons employed within a population group, for both older workers and women exceeded that observed two years earlier.[39] Conversely, the employment rate of the under-30s had fallen steeply in that period. These changes are similar to those observed in the respective participation rates, i.e. the percentage of economically active persons within a population group (see Chart 1.14.5). As a result of the changes in economically active persons and persons employed being similar, the movements in unemployment rates are smaller, with a notable slight increase among the over-45s. Once again, developments in 2022 Q1 are in line with these patterns, with unemployment rates remaining similar to those of the pre-pandemic period and stronger labour-market participation developments among older workers.

After the initial decline when the pandemic broke out, a recovery in labour supply has been observed recently. This recovery has been confined to nationals (see Chart 1.14.6). Conversely, the migratory flows of foreign nationals are recovering considerably more slowly and, as a result, a notable gap with regard to the pre-crisis trend has opened up.[40] This could have important consequences for some productive sectors. Indeed, the information from the Banco de España Business Activity Survey (EBAE)[41] shows that labour supply shortages are reported more often as a constraint on economic activity in sectors characterised by a higher share of foreign employment, such as hospitality and construction.

3.6 A slower economic recovery than our peers

GDP in Spain is further adrift of its pre-pandemic level than in the rest of the euro area. All countries underwent a steep decline in activity at the onset of the pandemic, as a result of the first lockdowns, and a sharp subsequent rebound. However, the differences in terms of the gap between end-2021 GDP and its pre-crisis level are notable. Spain is the laggard of the main euro area countries (see Chart 1.15.1). Specifically, GDP in 2022 Q1 was 3.4% below its pre-pandemic level, whereas in the euro area taken as a whole it was already 0.4 pp above that level.

From the sectoral standpoint, the gap between Spain and the rest of the euro area is indicative of the Spanish economy's specialisation in the sectors hardest hit by the pandemic. Specifically, services sectors – in which social

39 The rate's numerator is calculated as the difference between employment according to the LFS and furloughed employees.

40 See Cuadrado and Montero (2022)

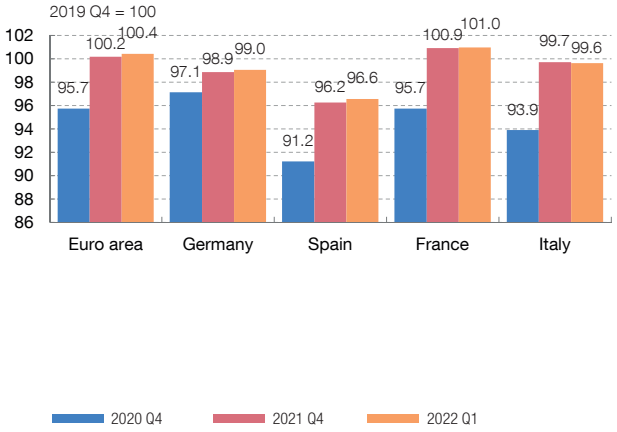
41 See Izquierdo (2022).

Chart 1.15

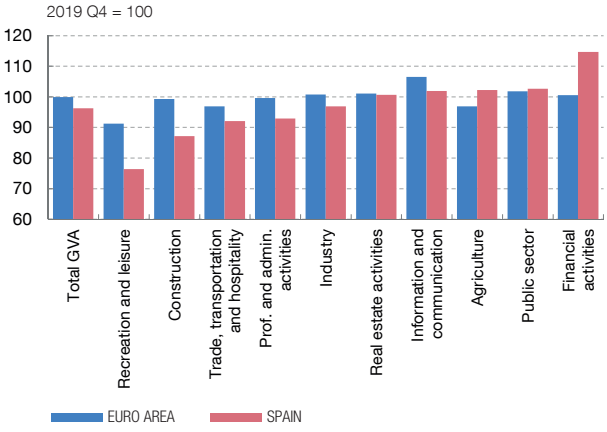
THE PANDEMIC HAS HAD A PARTICULARLY SEVERE ECONOMIC IMPACT ON SPAIN, WHICH IS RELATED TO ITS PRODUCTIVE SYSTEM

The gap between output and its pre-crisis level is wider in Spain than in the euro area as a whole. This is above all because the pandemic containment measures especially affected the services most dependent on mobility and social contact, whose share in Spain is comparatively higher. By demand component, the recovery in private consumption, residential investment and tourism exports is lagging farther behind than in the euro area.

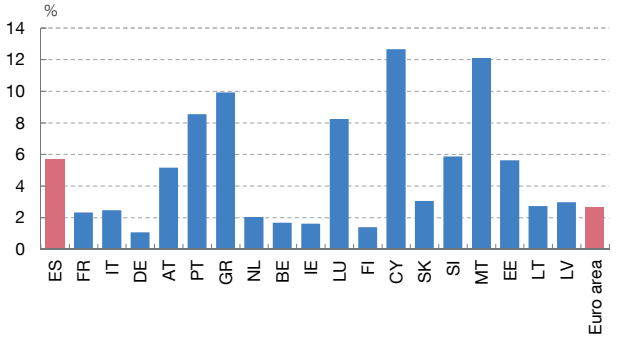
1 RETURN OF GDP TO PRE-PANDEMIC LEVELS



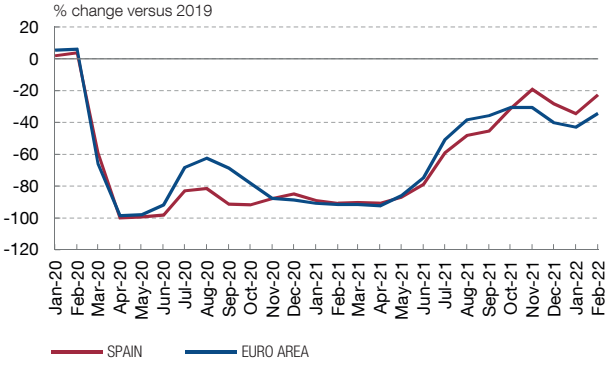
2 RETURN OF REAL GVA TO PRE-PANDEMIC LEVELS (2021 Q4)



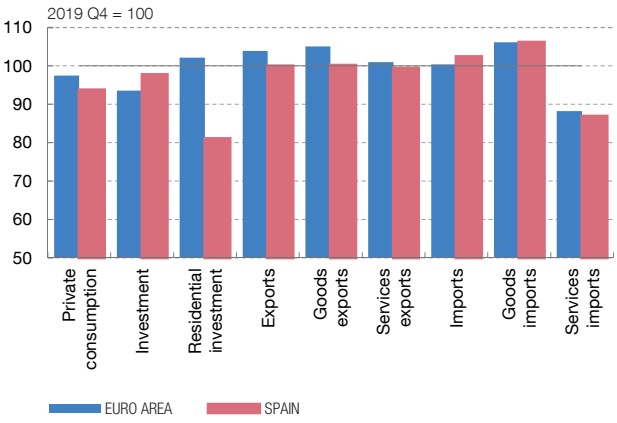
3 RELATIVE SHARE OF TOURISM EXPORTS IN GDP (2019)



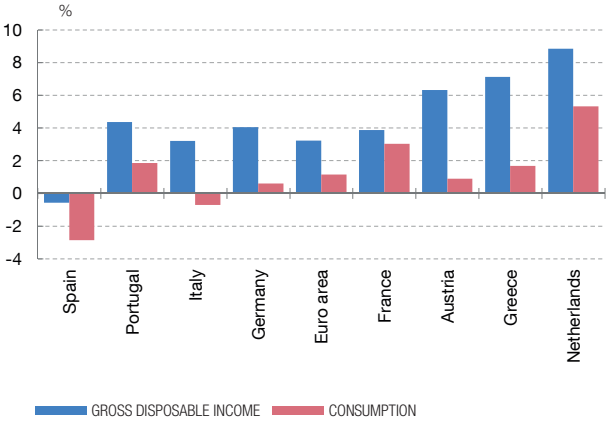
4 FOREIGN OVERNIGHT STAYS AT TOURIST ACCOMMODATION



5 RETURN OF DEMAND COMPONENTS TO PRE-PANDEMIC LEVELS (2021 Q4)



6 CHANGE IN HOUSEHOLDS' NOMINAL CONSUMPTION AND GROSS DISPOSABLE INCOME BETWEEN 2021 Q4 AND 2019 Q4 (a)



SOURCES: INE, Eurostat and Banco de España.

a The latest data on gross disposable income refer to 2021 Q3 in the case of France, Greece and the Netherlands.

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interaction plays an important role – such as hospitality and tourism account for a particularly high share of Spain's productive system.[42]

In addition, these sectors have performed less favourably than in the euro area as a whole. In Spain the sector whose level of activity (measured by GVA) was at end-2021 farthest from its pre-health crisis level was recreation and leisure, with an economic activity gap versus the pre-pandemic level of 23.6%, compared with just 8.9% in the euro area as a whole. Unlike in the euro area, in Spain there is also a significant gap between the current and 2019 Q4 activity levels in trade, transportation and hospitality, construction and professional and administrative activities (see Chart 1.15.2). Industry as whole has also performed worse in Spain, in part due to the importance of the automotive industry. Conversely, in the sectors that have led the recovery, such as financial activities and public administration, GVA has outstripped its pre-pandemic level in Spain more than in the euro area.

From the standpoint of the components of demand, Spain's straggling recovery is attributable to services exports, private consumption and residential investment. Services exports are yet to return to their pre-crisis level in Spain (0.6% below that level), whereas in the euro area they already exceed it by 1%. Within services exports, the tourism component has, in all countries, performed less favourably than the non-tourism component. This is a direct consequence of the restrictions on social interaction and movement both domestically and internationally that resulted from the containment measures adopted to mitigate the health crisis.

Spanish activity has been hit comparatively harder by the adverse impact of the pandemic on tourism exports. First, tourism exports' share of GDP is greater in Spain (5.7%, i.e. 3 pp higher than in the euro area as a whole) (see Chart 1.15.3). Second, inbound tourism recovered more slowly in Spain, due to dependence on the UK market and less favourable epidemiological developments than in alternative tourist destinations in the summers of 2020 and 2021 (see Chart 1.15.4).

Private consumption has not recovered its pre-crisis level in either Spain or the euro area as a whole, but the gap is much narrower in the latter. Thus, in Spain private consumption was 6.3% below its pre-crisis level at end-2021, compared with 2.5% in the euro area (see Chart 1.15.5). The poorer performance of this demand component in Spain is related to the less favourable behaviour of household disposable income (see Chart 1.15.6). This, in turn, is linked, among other factors, to the relative behaviour of employment, whose decline was steeper in Spain during the initial phase of the pandemic, owing partly to hospitality and tourism accounting for greater shares of Spain's productive system. In 2021 Q4, in hours worked terms,

42 Gómez and Del Río (2021) empirically quantify the impact of productive specialisation, of the severity of the pandemic and the stringency of the containment measures, and of other additional factors such as the prevalence of remote working. Their findings confirm that the health crisis has particularly afflicted economies like Spain that are more dependent on contact-intensive services.

employment was 3.6% below its pre-pandemic level in Spain, whereas in the euro area the gap was 1.8%.

Lastly, residential investment has proven to be weaker in Spain. The recovery in residential investment has been much slower in Spain, where this aggregate remains almost 20 pp below its pre-pandemic level, in contrast to the euro area, where it is already 2.1 pp higher.

3.7 The Spanish economy amid uncertainties

Economic developments in the early months of 2022 have been marked by the persistence of the production bottlenecks, the surge in commodity and input prices and, above all, Russia's aggression against Ukraine. In the first few months of the year, the course of the epidemic has gradually ceded centre stage to these three developments, which are not independent of each other and share the traits of a supply-side shock that undermines economic activity and pushes inflation up.

Global supply chain disruptions are adversely impacting activity both via the direct effect on the most affected sectors and via the spillover to other sectors. At the beginning of 2022, before the war broke out, it seemed as though the supply disruptions – which had become increasingly prominent throughout 2021 and were, as an immediate consequence, extending delivery times and raising the prices of domestically produced and imported inputs – were starting to ease somewhat (see Chart 1.16.1).[43] In any event, the sectoral spillover effects are above all responsible for the impact on aggregate growth.[44] The percentage of Spanish firms that, at the beginning of 2022, saw their production constrained by supply shortages (25%) was clearly above the historical average for the period 1995-2020 (see Chart 1.16.2). Nevertheless, the Spanish economy has been less affected by the bottlenecks than other euro area countries, such as Germany, where the impact has been particularly severe.[45]

The current inflationary episode, which, as mentioned above, has largely centred around the energy component, is also affecting activity. An important ingredient of the surge in inflation is the increase in the price of electricity, which has an adverse impact on economic output through various channels, including higher production costs and the erosion of household disposable income. The impact of such a shock can be assessed using the analytical tools available to the Banco de España. Specifically, it is estimated that a permanent increase of 10% in the price of electricity gives rise to a cumulative impact over three years of between 0.2 pp and 0.4 pp on prices and between -0.2 pp and -0.3 pp on GDP.[46]

43 See Alonso et al. (2021).

44 See Fernández-Cerezo, Montero and Prades (2021).

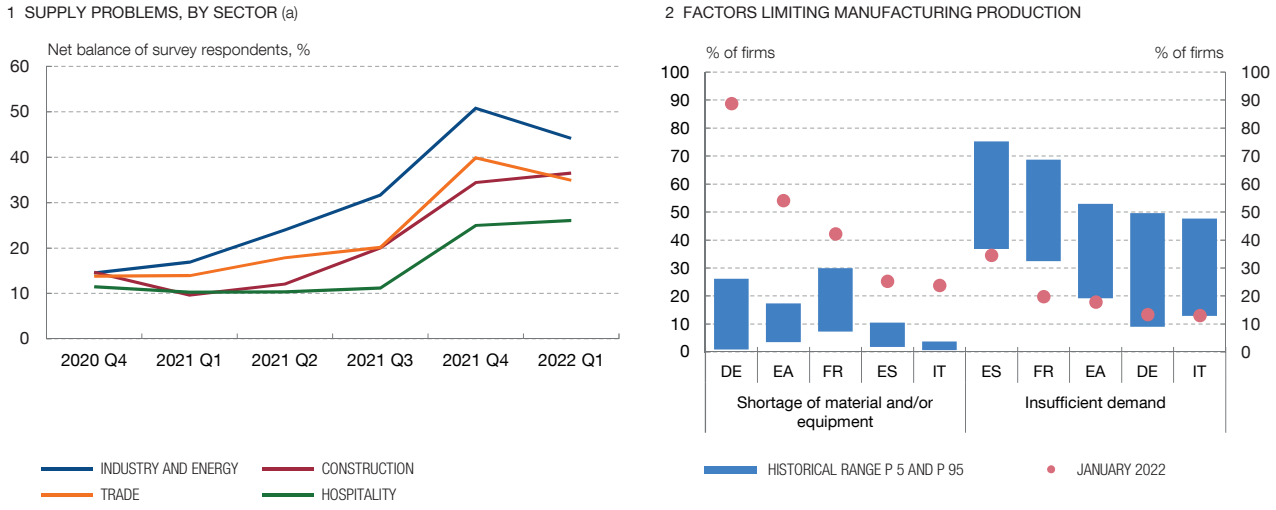
45 See Kataryniuk, Del Río and Sánchez Carretero (2021).

46 See Hurtado et al. (2022).

Chart 1.16

THE BOTTLENECKS ARE AFFECTING THE RECOVERY

Supply chain disruptions have had an increasingly adverse effect on activity since mid-2021. The constraints associated with the lack of supplies have been greater in the manufacturing sectors.



SOURCES: Banco de España and European Commission.

a EBAE.

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3.7.1 The effects of the war on the Spanish economy

The repercussions of the aggression against Ukraine are felt through multiple channels. Much uncertainty surrounds the course and duration of the conflict. There are several transmission channels for the economic effects of the war. First, Russia and, to a lesser degree, Ukraine are major producers of certain energy and non-energy commodities. The outbreak of the war has given rise to a significant increase in many of their prices. A second channel through which the effects of the war spread is the direct trade exposure to the countries participating in the conflict, in addition to the indirect exposure via a fall in demand from other, more exposed countries. Additionally, there is the possibility of the global production chain disruptions being compounded, particularly amid the trade and financial sanctions imposed on Russia. A third channel is the potential effects of higher uncertainty on the future path of private agents' incomes, which will influence their consumer spending and investment decisions. The magnitude of the impact on economic activity through this channel is per se very difficult to measure. A final potential transmission channel for the effects of the war is the conflict's financial implications, insofar as escalating inflationary pressures result in a tightening of the monetary policy stance.

The direct effects of the war on Spanish foreign trade will be moderate, as its bilateral trade flows with Russia are relatively limited. Goods exports to the two countries at war accounted for around 0.9% of the total in 2019, while imports

represented around 1.6% (0.2% and 0.3% of GDP, respectively) (see Chart 1.17.1). Turning to tourism flows, in 2019, the year before the pandemic, Russia accounted for 1.6% of total foreign visitors (see Chart 1.17.2). However, after COVID-19, in a setting in which the farther away the country of origin the greater the reduction in tourism flows, this percentage fell to 0.4% in 2021. Russian tourists' spending per capita is higher than the average, such that they account for a higher share of total spending (2.2% in 2019 and 0.7% in 2021) than of overall tourists. In addition, it seems likely that the war will further weaken the flows of tourists from outside Europe to Spain. In 2021, non-European visitors accounted for almost 9.3% of tourists in Spain and 17.2% of their spending (around 15.3% and 25.7%, respectively, in 2019).[47] On the information available, just over two months after the conflict began, there are no indications that tourism in Spain has been significantly affected. For instance, air traffic at Spanish airports has continued to gradually improve.

Although imports from Russia account for a small share of total imports, the share is somewhat higher in the case of energy goods. Energy products imported from Russia accounted for 6% of the total in 2019. In any event, this figure was significantly lower than that of countries such as Germany (17%) and Italy (22%). Nevertheless, Spain is highly reliant on energy from the rest of the world and the war is having a severe impact on the cost of these energy goods on global markets regardless of their origin.[48] Accordingly, the rise in prices has represented a major negative shock to Spain's international purchasing power (which will foreseeably have an adverse impact on growth). Given the crucial role of these commodities in production processes and the limited capacity in the short term to substitute these energy inputs from Russia, a hypothetical interruption of the supply of energy products from Russia to Europe would have a significant impact on activity and inflation in the euro area. That impact would be more pronounced in the economies that are more dependent on Russian gas, with the consequent indirect effects on the Spanish economy.[49]

The indirect effects of the war on economic activity, the magnitude of which will hinge on its duration and severity, will foreseeably be significant. Aside from the impact via the deterioration of world trade, as mentioned above the war will have effects via its impact on uncertainty, which leads private agents to delay their spending decisions (see Chart 1.17.3). The decline in household confidence in March, after the conflict broke out, was the largest in the time series, which dates back to July 1986 (see Chart 1.17.4), and households' purchasing power is suffering from the additional rise in energy goods and food prices (see Chart 1.17.5). These effects are

47 However, this adverse impact could be partially offset by an increase in European tourism flows to Spain to the detriment of non-European destinations (amid higher transport costs) and of competitor destinations close to the conflict zone, such as Turkey.

48 Oil and gas prices had already begun to rise in early 2021, before the outbreak of the war, as a result of growing geopolitical tensions in eastern Europe.

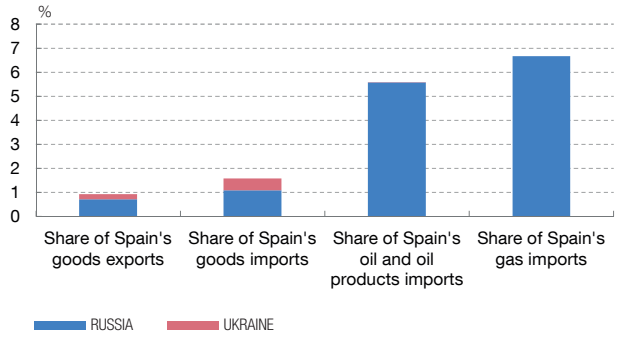
49 See Quintana (2022).

Chart 1.17

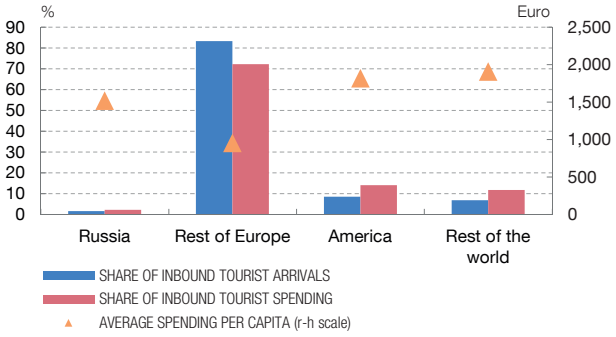
THE EFFECTS OF THE WAR ON ECONOMIC GROWTH IN SPAIN WILL BE SIGNIFICANT, DESPITE THE LIMITED DIRECT EXPOSURE TO RUSSIA AND UKRAINE

The relative share of Russia in Spain's foreign trade of goods and services is moderate (although the dependence on imports of energy products from that country is greater). However, the war in Ukraine may have considerable adverse effects on the economy through various channels, such as the rise in commodity prices, the deterioration in confidence and higher uncertainty (which could weigh heavily on private economic agents' spending decisions), and the downturn in world trade.

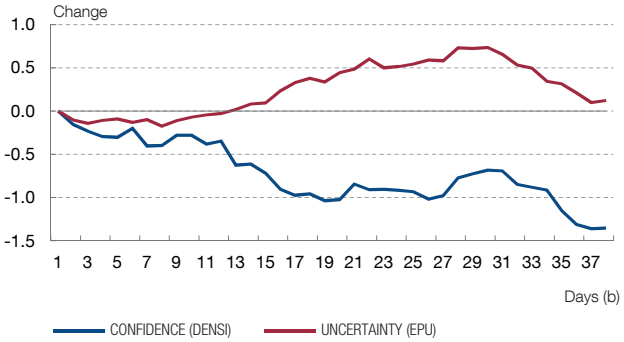
1 FOREIGN TRADE IN GOODS EXPOSURE TO RUSSIA AND UKRAINE
% of foreign trade in 2019



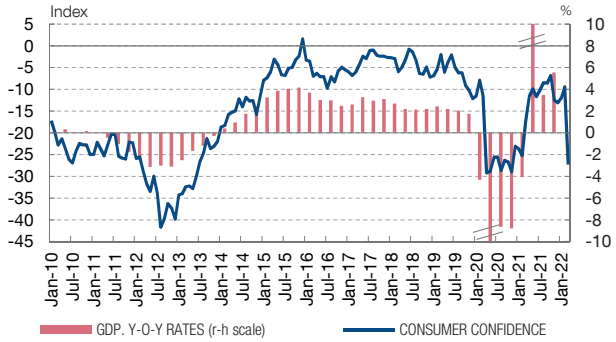
2 THE RUSSIAN SOURCE MARKET'S SHARE OF SPAIN'S INBOUND TOURISM
2019



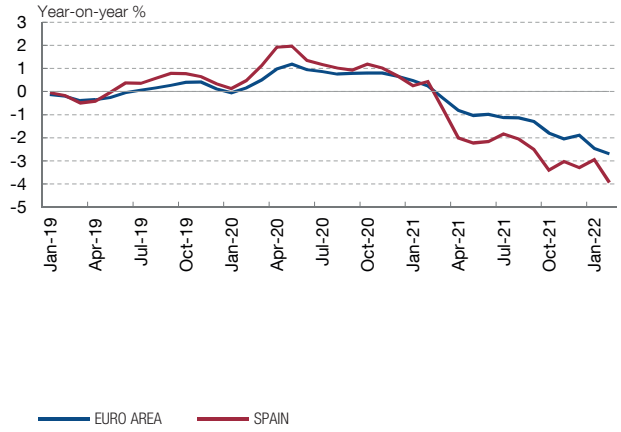
3 CONFIDENCE AND UNCERTAINTY (a)



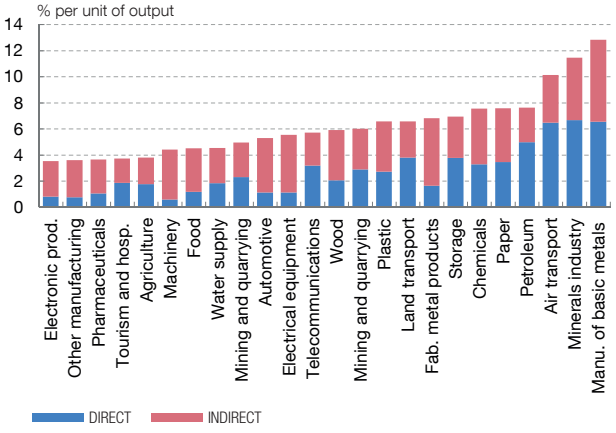
4 CONSUMER CONFIDENCE AND GDP



5 CHANGE IN PURCHASING POWER ASSOCIATED WITH CHANGES IN THE ENERGY PRICE (c)



6 THE MOST ELECTRICITY AND GAS-INTENSIVE SECTORS (d)



SOURCES: Departamento de Aduanas e Impuestos Especiales, INE, Geopolitical Risk Index, Economic Policy Uncertainty Index, Refinitiv, Factiva, European Commission, Eurostat, OECD (Inter-Country Input-Output: ICIO) and Banco de España.

a The DENSI and the EPU Index are constructed drawing on the "economic sentiment" and the "economic policy uncertainty" contained in the articles published in Spain's main newspapers. The DENSI takes into account the difference between the number of articles containing keywords related to potential upturns in economic activity in the short term and the number of those containing keywords related to potential downturns in economic activity in the short term, while the EPU Index is based on the number of articles on economic policy uncertainty.
b Days since the start of the war in Ukraine (24 February).
c The indicator proxies the year-on-year change in household purchasing power stemming from the changes in the price of energy if their gross disposable income grew at the same pace as the HICP.
d Direct and indirect energy intensity calculated using the OECD Inter-Country Input-Output Tables (2021) with information for 2018. Direct energy intensity reflects the consumption of electricity and gas per unit of output, whereas indirect energy intensity considers the amount of energy needed to produce the inputs from other sectors required in the production process.

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particularly significant in the case of low-income households, for whom these items account for a higher proportion of total spending. Turning to the impact on firms, a slowdown in their turnover and, above all, a rise in their production costs, which has been particularly sharp in the most electricity and gas-intensive sectors, is to be expected (see Chart 1.17.6). Some of the sectors (in particular, air transport, sea transport and the automotive industry) are, in addition, among those that were hardest hit by the health crisis and face this new shock without yet having recovered their pre-pandemic levels of activity.

Consequently, as a result of the developments associated with the war, a delay in the gradual recovery that was under way in the Spanish economy should be expected. This shock comes at a time when, as mentioned above, activity was yet to fully recover its pre-pandemic level and a set of households, firms and sectors remained in a relatively vulnerable position. Against this backdrop, the most important determinant of activity's buoyancy in the short and medium term is the uncertain course of Russia's aggression against Ukraine, with repercussions for activity and inflation whose magnitude is hard to predict. The war has compounded the global bottlenecks and the upward pressures on energy prices and production costs, factors that were already hindering the observed developments and clouding the future outlook. The persistence of the strains on prices and costs may tend to cause the feedback known as second-round effects, insofar as higher costs are more likely to be passed through to the final prices of goods and services and wages are more likely to reflect the higher inflation rate of the consumption basket.

3.7.2 The Spanish economy: outlook and risks

According to the Banco de España April 2022 macroeconomic projections, GDP will grow by 4.5% in 2022, 2.9% in 2023 and 2.5% in 2024.[50] This path is a continuation of the recovery, driven by the improved epidemiological situation, projects linked to NGEU, financing conditions that remain favourable and the measures adopted to combat the escalating energy prices. The implicit assumption in this scenario is that the war will not permanently affect the economy's productive capacity, which explains why at end-2024 activity will be at a level similar to that estimated in December 2021 (see Chart 1.18.1).

A very high average inflation rate of 7.5% was projected for 2022. While this sharp growth is explained, above all, by the energy component, other prices are also expected to accelerate temporarily (see Chart 1.18.2). Subsequently, the price growth rate will ease significantly to 2% in 2023 and 1.6% in 2024. However, this projection rests on two crucial assumptions: that the decline in energy prices signalled by the futures markets will bear out and that there will be no second-round effects.

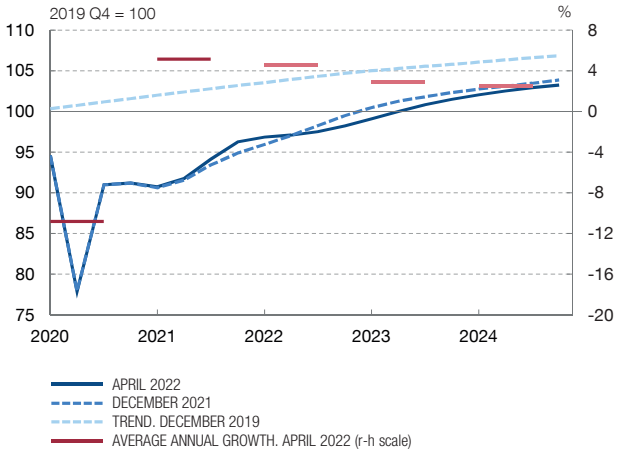
50 See Banco de España (2022).

Chart 1.18

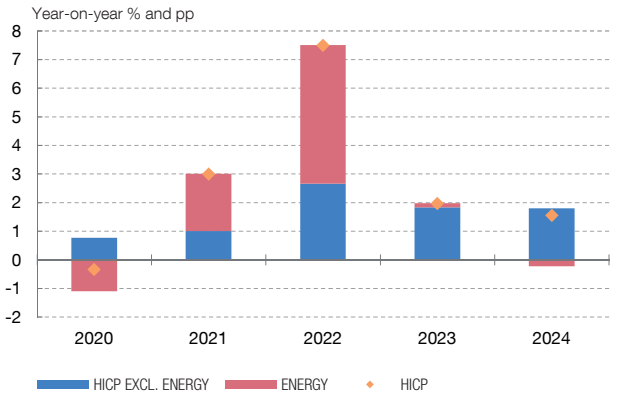
THE CONSEQUENCES OF THE WAR AUGUR LOWER ECONOMIC GROWTH AMID HIGHER INFLATION

The war is a highly severe shock that will have a significant impact on activity (downwards) and inflation (upwards). The impact on inflation in 2022 will be significant. Yet if the paths of commodity prices on the futures markets bear out and second-round effects are limited, price growth will return to moderate rates in 2023. This outlook is, nevertheless, subject to a high level of uncertainty.

1 REAL GDP (a)



2 HICP: GROWTH AND CONTRIBUTIONS (a)



SOURCES: INE and Banco de España.

a The GDP projections are Banco de España projections prepared at different points in time (indicated in the legend), whereas the HICP projections were calculated in April 2022.

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The war also represents an additional source of pressure on public finances. If no corrective measures are implemented, the budget deficit will remain very high in 2024 (4.7% of GDP). Based on the paths projected for the general government budget balance and for nominal GDP, the government debt-to-GDP ratio will still be very high in 2024 (113.8%, 6.2 pp below the all-time high reached in 2020, but nearly 20 pp above the end-2019 level). This underscores the need to design a fiscal consolidation plan that ensures that government debt is sustainable.

New information that has since become available has affected some of the projections' key figures. Against such a changing backdrop, the macroeconomic projections are highly likely to fall quickly out of date. As a result of the war, GDP growth in Q1 was more moderate than that estimated in the Banco de España's latest projections. In the absence of any additional consideration, the figure would mechanically entail an approximately 0.5 pp lower average GDP growth rate for 2022. On the consumer prices front, information that has become available since the cut-off date for the projections points to the energy component growing slightly more moderately. Conversely, the indicator that excludes this component was stronger than expected.

In acknowledgement of the high level of uncertainty, the baseline scenario of the April projections was supplemented by various sensitivity analyses.

Specifically, four possible reasons for deviations from this baseline scenario were analysed. The first three were downside risks: (i) a stronger and more persistent increase in commodity prices; (ii) a complete suspension of bilateral trade flows between Russia and the EU; and (iii) the hypothetical emergence of second-round effects. The fourth, an upside risk to activity, was an increase in household demand, associated with a sharper reduction in the surplus saving built up during the pandemic.[51] These risks are not independent; two or more of them may materialise simultaneously (and possibly more or less severely than considered), in which case, the aggregate impact of these shocks would not be the mere sum of their individual effects.

Overall, the risks are tilted to the downside in the case of activity and to the upside in that of inflation (pending the assessment of the impact of the Iberian mechanism to cap the price of gas and lower that of electricity which was recently approved in Spain and Portugal, in accordance with the European Commission, and which will foreseeably exert downward pressure on energy prices in Spain). Under the alternative assumption about future energy price developments, GDP would fall by 0.7 pp in cumulative terms to 2024, while inflation would be 0.4 pp higher in 2022 and 2023 (see Chart 1.19.1). An interruption of bilateral trade with Russia, particularly one involving energy supply cut-offs, could have a severe impact on activity and prices. However, its magnitude is subject to a significant amount of uncertainty, since it is hard to judge the feasibility of substituting these supplies in the short term. Under plausible assumptions about this substitutability, after one year GDP could be 0.6-1.3 pp lower than its level were there to be no supply cut-offs, while consumer prices would be 1-1.5 pp higher (see Chart 1.19.2). Under the scenario in which profit margins and wages respond to the increase in energy prices, the cumulative adverse impact on activity and prices, compared with the current projections, could be approximately -1.5 pp and 3.2 pp, respectively, in 2024 (see Chart 1.19.3). Finally, households' greater use of the savings accumulated during the pandemic, in order to maintain their level of consumption following the loss of purchasing power, would raise GDP by 0.4 pp in 2022 and by a further 0.2 pp between 2023 and 2024 (see Chart 1.19.4).

Lastly, other sources of uncertainty remain. The probability of the pandemic having a direct adverse impact on economic activity in Spain in the future is lower thanks to the high vaccination rate. Yet the incidence of the virus remains high in other geographical areas where the share of the vaccinated population is lower. Accordingly, economic activity will continue to be affected in these locations.

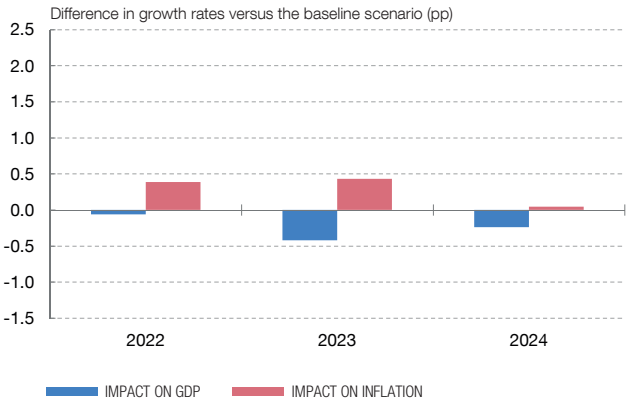
51 The release of the surplus saving accumulated due to the pandemic may significantly underpin activity. This at a time when the decline in households' real disposable income triggered by rising energy prices, together with the indirect effects of such increase and the hypothetical second-round effects, is probably the main channel through which the war in Ukraine will affect the GDP growth outlook in 2022. Consumer Expectations Survey (CES) data for 2021 Q4 suggest that the accumulated savings could drive household spending in 2022. Specifically, the survey results reveal that the outlook for spending on goods and services in 2022, in particular on items such as holidays and cars, was more positive in the households that saved in 2020. In any event, a high degree of uncertainty continues to surround the pace at which the savings built up during the pandemic will be released.

Chart 1.19

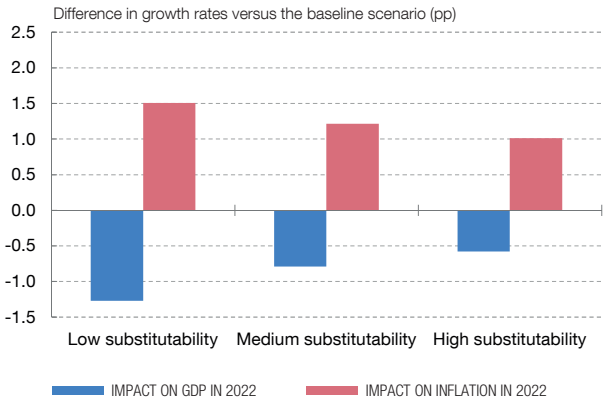
SOURCES OF UNCERTAINTY AND THE ASSOCIATED RISKS

The complexity of the repercussions of the war and the uncertainties surrounding its course complicate the assessment of its impact. One way of illustrating this uncertainty is by conducting different sensitivity analyses that enable the implications of the materialisation of different risks to be evaluated. Overall, the risks are tilted to the downside in the case of activity and to the upside in the case of inflation.

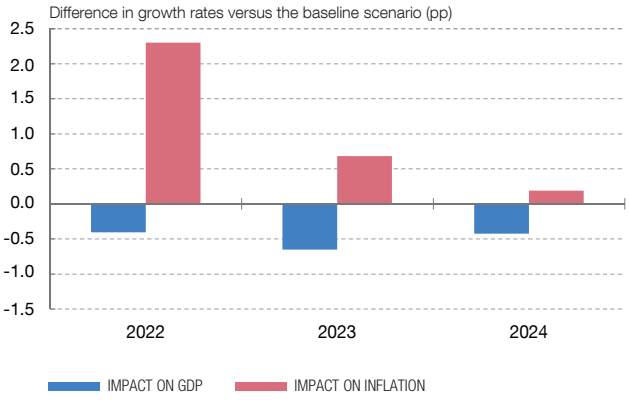
1 PERSISTENCE OF HIGH ENERGY PRICES (a)



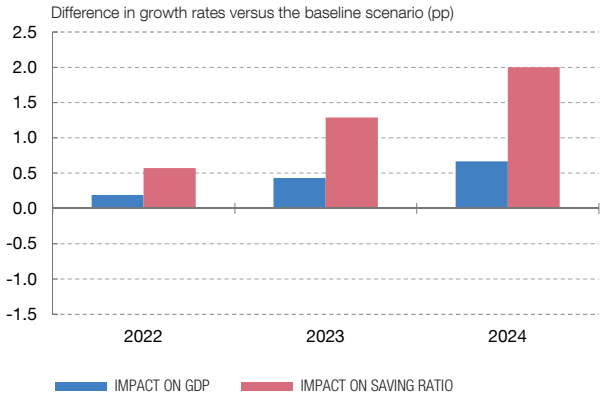
2 CUT-OFF OF TRADE WITH RUSSIA (b)



3 SECOND-ROUND EFFECTS (c)



4 HIGHER PRIVATE CONSUMPTION MOMENTUM (d)



SOURCES: INE, Google and Banco de España.

a A future path for energy prices that levels off around the peak reached since the beginning of the war (observed at mid-March) is envisaged.
b The cut-off of all bilateral trade, including energy commodities, between Russia and the EU is envisaged.
c Business owners and employees seeking an increase in their prices and wages to nullify the initial impact of the energy shock on their incomes, which triggers second-round effects on prices and wages, is envisaged.
d Households using two-thirds (one-third under the baseline scenario) of the savings they have built up since the onset of the pandemic in the period 2022-2024 is envisaged.

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The virus being widespread in these regions also gives rise to the possibility of new, more vaccine-resistant variants emerging. Domestically, the pattern of the recovery in output will also depend on the pace, scope and effectiveness of the implementation of NGEU and on the path of the recovery in international tourism flows. A final source of uncertainty is the extent of the scarring that the pandemic may have left on employment and the productive system. However, the available evidence suggests, for the time being, that the scarring is relatively limited, as discussed in the following section.

4 Economic policies amid uncertainty

Economic policies continued providing a very high level of support to activity in 2021. The incomplete recovery, against the background of fresh waves of the virus, meant that monetary and fiscal policy remained particularly expansionary. On the monetary policy front, the reformulation of the US and euro area central banks' strategies afforded these institutions more flexibility amid uncertainty. The incomplete recovery meant that, overall, central banks were patient and avoided responding mechanically to the rise in inflation, as tightening the monetary policy stance prematurely could have jeopardised the continuity of the recovery. Fiscal policies continued to support the incomes and the financial position of the agents hardest hit by the pandemic. However, they did so more selectively due to (i) the measures to contain the health crisis becoming increasingly targeted and, therefore, tending to affect an ever smaller group of agents, and (ii) the limited fiscal space after the sharp rise in government debt in 2020.

Yet the persistence and intensification of the upsurge in inflation meant that, over the course of the year, monetary policies began to normalise. The monetary policy stance in many jurisdictions has gradually tightened in response to the threat of inflationary dynamics beginning to jeopardise inflation expectations remaining anchored around monetary policy targets.

The war has made economic policy conduct even more complicated. Even before the war broke out, economic policymakers faced a complex situation marked by intensifying inflationary pressures and the incomplete recovery in activity. The war has given rise to a downturn in economic activity, a further deterioration in the inflation outlook and a particularly marked increase in uncertainty. As a result, it has compounded the challenges of finding the right economic policy stance.

Monetary policy should monitor the pass-through of higher prices to agents' inflation expectations. The gradual rise in the medium-term inflation expectations, which in the case of the euro area are currently very close to the ECB's target of 2%, suggests that continuing with the normalisation of monetary policy is advisable. This should be a gradual process, given the great uncertainty associated with the current setting, as long as the medium-term inflation expectations remain anchored to the inflation target.

The war has brought to the surface new needs that fiscal policies should try to address, within the limited fiscal space available. The increase in inflation, a substantial proportion of which pre-dated the war and has affected energy prices above all, has a significant impact on lower-income households, who see their purchasing power squeezed more by rising energy prices, and on the firms operating in the most energy-intensive productive sectors. When resources are limited and inflation is high, budgetary policy should strictly target mitigating the impact on these hardest-hit agents via swiftly implemented measures of limited duration.

4.1 The role of global and euro area budgetary policies

In 2021 fiscal policy remained expansionary in the advanced economies and retained its tighter stance in emerging market economies. In the first case, maintaining the fiscal impulse in 2021, on the grounds of the persistence of the health crisis, resulted in many of the revenue and expenditure measures adopted in 2020 being renewed. The result of these two years of stimulus measures in these countries has been a marked increase in budget deficits and government debt (see Charts 1.20.1 and 1.20.2). This is in contrast to the more subdued growth of these two variables in the emerging market economies, whose fiscal space to contend with the fallout from the pandemic was smaller. In the specific case of the euro area, the activation of the general escape clause of the Stability and Growth Pact (SGP)[52] and the reform of the State aid framework[53] enabled a highly expansionary domestic fiscal policy stance in 2020 and 2021, which was also facilitated by the PEPP as a crucial tool for averting financial fragmentation. In addition, this expansionary stance has been supplemented by supranational policies, including most notably NGEU, whose implementation to date is analysed in Chapter 2.

The invasion of Ukraine has upended the fiscal policy objectives for 2022, with fiscal policy instead being forced to address the economic fallout from the war. Energy prices had already risen markedly in 2021, with electricity prices increasing particularly sharply. Pressures on energy prices have intensified as a result of the war. Consequently, as detailed in Chapter 3 of this report, during the final stretch of 2021 and in early 2022 European countries adopted a raft of measures aimed at offsetting the higher electricity prices, such as reduced electricity charges and taxes, transfer programmes focused on the most vulnerable households and a temporary tax on the windfalls earned by non-CO_2-emitting power plants as a result of rising gas prices. The war in Ukraine will also drive up government spending on other items to address the new needs that have emerged, such as accepting refugees from Ukraine and military spending. For example, Germany has announced that it will earmark €100 billion to increase its military spending to 2% of GDP.

In the current circumstances, there are obstacles to implementing these new government spending needs. Inflation rate surprises may be helping to contain government debt and budget deficit ratios in the short term. Yet, at the same time, these inflationary pressures involve a slight tightening of global financing conditions, which will tend to increase the public sector's borrowing costs. Furthermore, while to differing degrees, at domestic level there is generally limited elbow room for fiscal policy action given the pandemic-induced increase in debt. The NGEU's Recovery and Resilience Facility (RRF), funded via common European debt, provides some additional fiscal space, particularly to the countries with higher levels of government

52 See Alonso and Matea (2021).

53 See Alonso et al. (2021)

Chart 1.20

FISCAL POLICY HAS REMAINED EXPANSIONARY IN THE ADVANCED ECONOMIES, IN CONTRAST TO THE TIGHTER STANCE IN THE EMERGING MARKET ECONOMIES

The persistence of the health crisis and the expiry of the fiscal measures adopted in 2020 justified the continuation of the fiscal impulse in 2021. This has resulted in sharp rises in budget deficits and government debt, in contrast to the more subdued increase in the emerging market economies. Looking ahead, the gradual reduction in the budgetary shortfalls caused by the crisis should be based on a determined shift towards a more growth-friendly composition of public finances and on structural reforms that increase the economies' potential growth. In this regard, in the European Union the RRF aims to boost government investment and may provide substantial support in this connection, in particular by speeding up the green and digital transitions.

SOURCES: Banco de España, IMF (Fiscal Monitor, October 2021), European Commission (2021) and national stability programmes.

a France, Germany, Greece, Italy, Portugal and Spain.
b France, Germany, Italy and Spain. Forecasts made in the spring of each year (publication of the stability programmes) for the current and following years.

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debt. The great challenge here is maximising the impact of these funds, €64.3 billion of which were disbursed in 2021 (see Chart 1.20.3).[54] Execution of the RRF is expected to gather pace in 2022, with the additional disbursement of around €76 billion. Going forward, one of the pillars of the gradual absorption of budgetary shortfalls must be a determined shift towards a more growth-friendly composition

54 Of this total for the EU as a whole, €57.5 billion is for the four main economies, Greece and Portugal. See European Commission (2022).

of public finances. Here, structural reforms must also play a part in boosting economic growth. In this regard, the main European countries' stability programmes envisage an increase in government investment, underpinned by the RRF funding (see Chart 1.20.4).[55]

The current shocks could be tackled more appropriately by strengthening the coordination between countries. The severity of the EU-wide supply shock (amplified after the outbreak of the war in Ukraine), its exogenous nature and the strong cross-border impact of domestic fiscal policies all warrant this coordination. First, in an integrated area such as the EU – and even more so in the case of the euro area – coordination boosts the effectiveness of the domestic fiscal policy measures implemented to mitigate, in the short term, the effects of the shock on growth and employment. Indeed, where the measures to support consumers and specific sectors and firms might interfere with the rules of the single market, coordination becomes a necessity. Second, one of the channels through which the war adversely affects the EU economies is the impact on them of the international community's severe sanctions against Russia. That said, while the expected benefits of these sanctions – in terms of their contribution to ensuring security in Europe – are common, their costs – in terms of lower growth and higher inflation – impact the different countries unevenly, depending on factors such as their trade exposure to Russia, their energy mix and the geographical origin of their oil and gas imports. Against this backdrop, the EU Member States' unified action would be boosted were the incentives better aligned via supranational financing and risk-sharing arrangements that help mitigate the unevenness of the costs borne. Lastly, it may also make sense to pool some of the costs associated with the measures required to increase Europe's strategic autonomy in key sectors. This is particularly true of energy generation, with the invasion of Ukraine underscoring the need to speed up the transition to the primary sources available in Europe so as to reduce dependence on third countries.

4.2 The contribution of monetary policies

In response to sharply increasing inflation, the central banks of the advanced economies have begun to tighten their monetary policy stance. In the United States, the Federal Reserve raised its policy interest rate by 25 basis points (bp) in March 2022 and again by 50 bp in May, to a target range of 0.75%-1%, aside from signalling further hikes for the remainder of 2022 and announcing that it will begin reducing its holdings of Treasury securities, agency debt and mortgage-backed assets. The Bank of England has raised its base rate by a cumulative 90 bp since December 2021, to 1%. The central banks of Canada and New Zealand (which had

55 ForteCampos and Rojas (2021) describe the historical development of the European Structural and Investment Funds to contextualise the magnitude of the NGEU funds and the challenge of managing them. Albrizio and Geli (2021) assess the economic impact of the European Regional Development Fund, whose goals are similar to those of NGEU. Lastly, Alonso et al. (2022) detail NGEU's features and the keys to its success.

gradually been tapering their asset purchase programmes) have also raised their benchmark interest rates in recent months. For their part, except in the case of Asia, emerging market economies have prolonged the restrictive cycles of monetary policy initiated in 2021 (see Chart 1.21).

The ECB has discontinued the emergency programmes that were launched during the pandemic and has announced that it will end net asset purchases under its regular asset purchase programme in Q3. At end-2021, the ECB Governing Council announced the end of the net asset purchases under the PEPP in March 2022 and of the special conditions applicable to the third series of targeted longer-term refinancing operations (TLTRO III) in June. However, to address potential bouts of financial fragmentation which might affect the transmission of monetary policy, flexibility in the distribution of PEPP reinvestments is preserved at least until end-2024.[56] In March 2022, the ECB announced a gradual scaling down of net asset purchase volumes under the APP and in April it confirmed its plan to end net purchases in Q3.

The ECB has reiterated its commitment to carry out any future interest rate adjustments gradually, provided that medium-term inflation expectations remain anchored at 2%. The ECB Governing Council has indicated that any adjustment in its interest rates will occur some time after the end of net asset purchases and will be gradual. It has also maintained its forward guidance, according to which the first interest rate increase is dependent on three conditions being met: i) that expected inflation reaches 2% well before the end of its projection horizon; ii) that it remains at that level durably for the rest of the projection horizon; and, iii) that the progress observed in underlying inflation is deemed consistent with inflation stabilising at 2% over the medium term. In this connection, it is worth noting that these three conditions are now close to being met, since the different underlying inflation indicators are already above 2% and the medium-term inflation outlook is very close to that level.

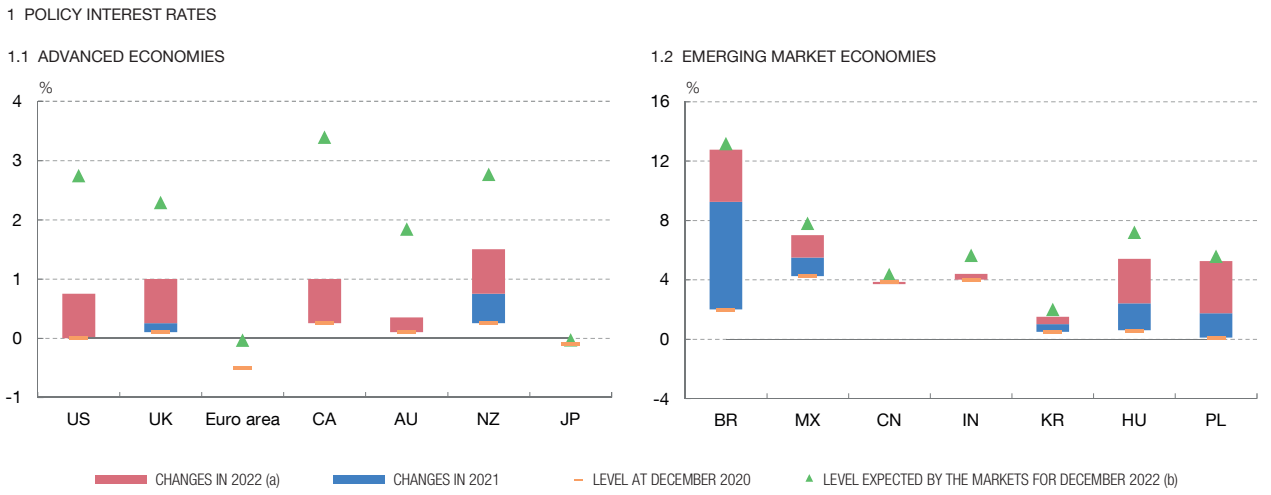
The ECB has also announced that it intends to use the instruments flexibly. The pandemic has shown that, under financially stressed conditions, flexibility in the design and conduct of asset purchases has helped to counter the impaired transmission of monetary policy and made the Governing Council's efforts to achieve its goal more effective. Therefore, under stressed conditions, flexibility will remain an element of monetary policy whenever threats to a correct monetary policy transmission jeopardise the attainment of price stability. This setting frames the ECB Governing Council's commitment to flexibly reinvest (by jurisdiction, by asset type and over time) the principal payments from maturing securities under the PEPP in the event of a new financial market fragmentation related to the pandemic,

56 The importance of flexibility in the PEPP for monetary policy transmission is studied in Costain, Nuño and Thomas (2021) mimeo. For an analysis of the macroeconomic and financial effects of the PEPP, see Aguilar et al. (2020) and Banco de España (2020 and 2021).

Chart 1.21

POLICY INTEREST RATES HAVE INCREASED IN NUMEROUS JURISDICTIONS

Central banks have tightened the monetary policy stance in response to the rise in inflation.



SOURCE: National central banks.

a Includes changes to policy rates adopted before 13 May 2022.
b Based on futures for the interbank overnight rate, interest rate swaps and the OIS rate for the euro area, in April 2022.

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and to adjust all its instruments to ensure that inflation stabilises at the 2% target in the medium term.

The monetary policy decisions adopted by the ECB Governing Council since December 2021 have brought forward the expectations of policy interest rate hikes. The upward shift in the risk-free interest rate curve from its level prior to the ECB Governing Council of December suggests that the markets expect a gradual normalisation of policy interest rates towards positive values (see Chart 1.22.1). As discussed in Section 2, this revision of expectations for short-term interest rates has been transferred to public-sector bonds' and other long-term debt instruments' yields. In addition, returns on these assets have been spurred both by domestic factors (the reduction of net asset purchases by the ECB) and external factors (the earlier-than-anticipated withdrawal of monetary stimuli also in the United States and the higher risk aversion owing to greater uncertainty linked to the war).[57] That said, private sector financing conditions have continued to be extraordinarily favourable in the euro area, and only recently has the pick-up in market financing costs started to be passed through, still relatively modestly, to the cost of bank financing. Thus, the cost of new loans to NFCs and households has remained, over recent quarters, at levels close to the all-time lows posted across all segments (see Chart 1.22.2).

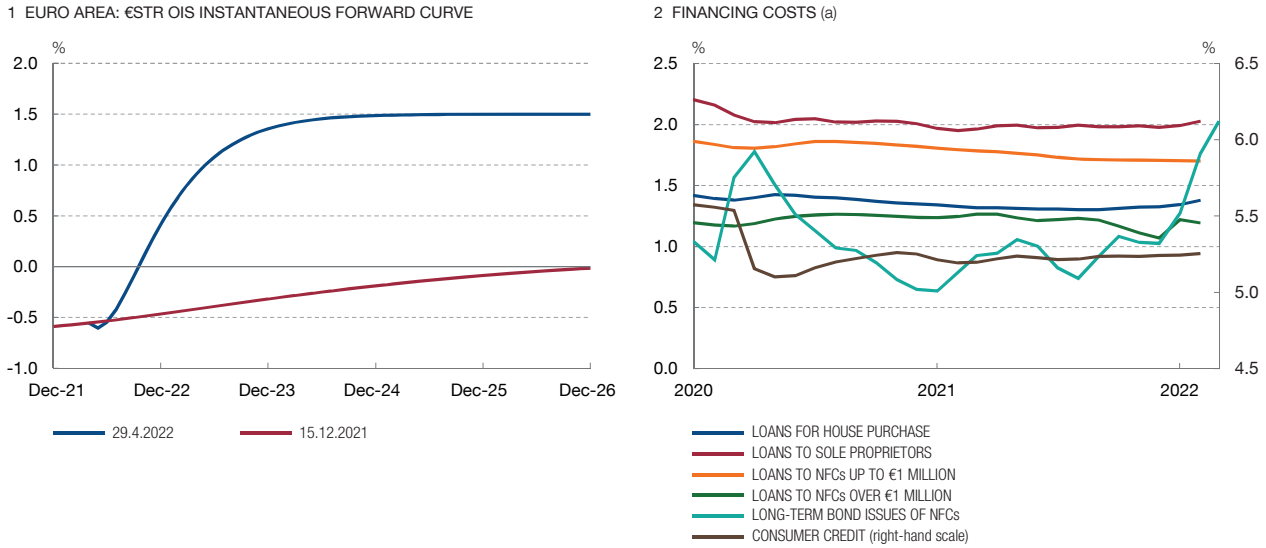
Looking forward, a hypothetical market interest rate hike would raise firms' net interest burden in a relatively quick and more intense manner than in the case

57 See Fuertes and MartínezMartín (2022).

Chart 1.22

INTEREST RATE EXPECTATIONS HAVE SHIFTED UPWARDS

Expectations of policy interest rate increases have been brought forward somewhat since December 2021. This has been passed through to long-term returns, but not yet to bank lending.



SOURCES: ECB and Refinitiv Datastream.

a Bank lending rates are narrowly defined effective rates (NDERs), i.e. excluding associated costs, such as mortgage protection insurance premiums, and fees and commissions. In addition, these rates are estimated on a trend-cycle basis, i.e. they are adjusted for seasonality and the irregular component.

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of households and general government. Specifically, an increase of 100 bp in the short and long-term market interest rates would, after one year, lead to an increase of 1 pp in firms' net interest burden relative to their gross operating surplus (compared with a counterfactual scenario of interest rates remaining unchanged). For households, the aggregate effect would be much more moderate as a result of their lower, albeit highly uneven, net indebtedness (0.2 pp of their gross disposable income), and be concentrated in those segments whose level of income exceeds the median of the distribution and where the household reference person is in the younger age groups, since these are the ones who, on average, have greater net indebtedness. In the case of general government, the long-term effect would, as a result of high indebtedness, be more acute than in the past, but it would also be more gradual, owing to the extended average life of the outstanding debt and the fixed interest rate financing. Specifically, under the same assumptions the net interest burden would increase one year after the shock by 0.2% of GDP.

4.3 An assessment of public policies to tackle the consequences of the pandemic in Spain

The last two years have been a period of major shocks to economic activity in Spain. The pandemic posed an enormous challenge to economic policies, which

had to provide a forceful response to mitigate the consequences of the closing of significant parts of the economy. The recovery after the crisis has been incomplete, not so much on account of the persistence of restrictions on movement and economic activity, since these have mostly been lifted even though the pandemic is not entirely over, but rather of supply disruptions and the rise in inflation. In particular, the rise in prices and, especially in energy prices, has led to new economic policy challenges that have only intensified since the start of the war.

It is therefore time to take stock of the economic policies implemented to combat the effects of the pandemic, as a starting point for assessing the new needs. There is broad consensus on the important role played by monetary policy and macroprudential policies in combating the shock. In particular, the ECB's monetary policy has helped the different agents in the euro area enjoy favourable financing conditions to absorb such a severe shock. But the focus of the analysis conducted here is confined to three specific measures, probably the most important ones, which were implemented in Spain: more flexible furlough schemes, ICO credit facilities and direct assistance to firms. To conclude, protecting household income, preserving employment relationships and supporting NFCs appear to have helped economic output and employment recover. However, this favourable assessment is not an obstacle to recognising the existence of groups of households and firms whose situation has deteriorated with the health crisis, as analysed in detail in Chapter 2.

The recovery of pre-pandemic employment levels suggests that furlough schemes have been effective in promoting the return to work. The purpose of making furlough schemes more flexible was to temporarily suspend an employee's employment relationship with a firm while restrictions on activity were in place, enabling the employee to preserve an adequate level of income and the firm to reduce its labour costs. To this end, firms' Social Security contributions were waived and the unemployment benefit amount for employees subject to this scheme was raised. Now that the bulk of restrictions on activity have been lifted, it makes sense to assess whether these measures have been efficient in facilitating the return to effective employment. A sample of the effectiveness of the furlough schemes is the fact that the number of employees in this situation has declined from a high of more than 3.5 million in April 2020 to around 100,000 in March 2021. Also, effective employment in March 2021 exceeded by somewhat more than 400,000 persons its level in February 2020, immediately before the outbreak of the pandemic.

Analysis of the flows of employees who have been subject to a furlough scheme helps to more appropriately study the effectiveness of this mechanism based on employee characteristics. Individual data from the LFS have been used for this analysis covering from 2020 Q1 to 2021 Q4, and considering periods of between one and three quarters on furlough. The findings show that in the case of two persons with identical individual characteristics in terms of sex, age,

educational attainment level and type of occupation who differ in that, in a given quarter, one of them is on furlough and the other one is unemployed, the likelihood of subsequently returning to employment is greater in the former than in the latter.[58] However, the difference tapers off as the time on furlough lengthens. Specifically, the gap between the probability of returning to work for an individual on furlough for three quarters compared with the probability for an unemployed person is approximately one-half what it would be if the furlough lasted one quarter (see Chart 1.23.1). Additionally, this loss of effectiveness is more pronounced for some groups. In particular, for workers who are younger, have a temporary contract or are lower-skilled, the probability of returning to employment after three quarters on furlough does not differ significantly from that for a person who has been unemployed for the same length of time (see Chart 1.23.2).

One of the most pressing needs following the onset of the pandemic was to mitigate the impact that restrictions on activity had on firms' liquidity. The ICO guarantee facilities were introduced for this purpose. In 2020 the Government approved two public guarantee schemes for loans to firms and the self-employed which aimed to facilitate access to finance for the firms most affected by the COVID-19 crisis. These schemes, for an overall amount of €140 billion, allowed financial institutions to cover a high proportion of possible losses associated with the loans granted (up to 80% in the case of funding granted to SMEs and the self-employed and up to 70% for that provided to large firms). In February 2022 a volume of €104 billion of guarantees had been issued, 85% of which was formalised in 2020, giving rise to financing under these programmes amounting to €136 billion.

These two public guarantee facilities met their goals effectively, insofar as they were able to cover a high proportion of firms' liquidity needs. Specifically, the financing obtained with the loans that were channelled through the public guarantee facilities seems to have covered 30% of the non-financial corporate sector's liquidity needs (see Chart 1.24.1). The breakdown according to the firms' characteristics reveals that this percentage is comparatively higher for firms which, a priori, were facing greater difficulties in gaining access to funding, such as those in the sectors hardest hit by the crisis (38%, compared with 29% for sectors less affected) and, above all, SMEs (70%, compared with 20% for large firms). However, firms with no bank debt before the pandemic only covered 18% of their liquidity needs through bank loans. The scant contribution of the public guarantee scheme to mitigating the liquidity problems of these types of firms might have had an influence on the increase in bankruptcies in the segment of firms with high liquidity needs and no lending relationships at end-2019, which was substantially higher than that observed for firms in a similar situation but with relationships of this kind.[59]

58 See Auciello, Izquierdo and Puente (2022).

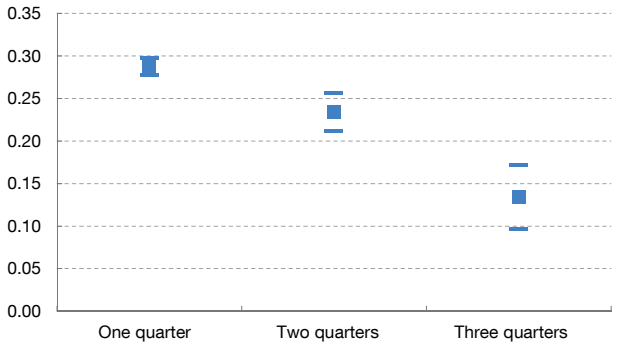
59 See Blanco and Mayordomo (2022).

Chart 1.23

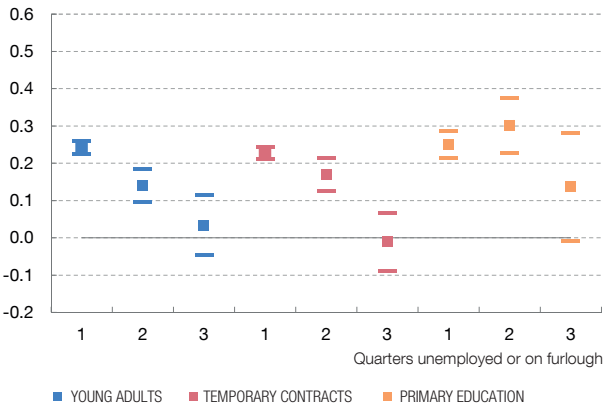
FURLOUGH SCHEMES HAVE BEEN EFFECTIVE IN TERMS OF INCREASING THE PROBABILITY OF RETURNING TO WORK, ALTHOUGH THEIR POSITIVE EFFECTS DECREASE THE LONGER THE TIME ON FURLOUGH

The probability of returning to work is higher for a furloughed employee than for an unemployed worker. However, the longer the furlough, the less effective the scheme is. For some groups, such as younger adults, employees with temporary contracts and lower-skilled workers, the relative benefit of the furlough schemes disappears after three quarters.

1 IMPACT ON THE PROBABILITY OF RETURNING TO WORK (FURLOUGH vs UNEMPLOYMENT) (a)



2 IMPACT ON THE PROBABILITY OF RETURNING TO WORK, BY INDIVIDUAL CHARACTERISTICS (FURLOUGH vs UNEMPLOYMENT) (a)



SOURCES: Microdata on EPA flows (INE) and Banco de España.

a The squares denote the point estimate of each coefficient, while the lines denote the 95% confidence interval.

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Also, the guarantee schemes appear to have fostered the supply of credit to SMEs and firms in the sectors hardest hit by the crisis. As Chart 1.24.2 shows, financial institutions with lower capital buffers resorted more to public guarantees in new funding granted than those with a more comfortable capital position. Thus, public guarantees seem to have contributed to sustaining the supply of credit to these two groups of firms by financial institutions that started at lower solvency levels, thanks to the relief provided in consumption of own funds.

A third block of actions to tackle the consequences of the pandemic was the solvency support measures for firms. These included the creation of two recapitalisation funds,[60] with a maximum budget of €11 billion, and a direct assistance scheme, with a budget of €7 billion, mainly for sole proprietors and small firms. Overall, according to Banco de España estimates, funding for these three schemes could cover all the capital shortfalls of firms generated in 2020 as a result of the crisis, both in the case of SMEs and of large corporations (see Chart 1.25.1).

As regards the recapitalisation funds, the criteria for granting assistance are based on an individual analysis of firms' economic and financial situation and

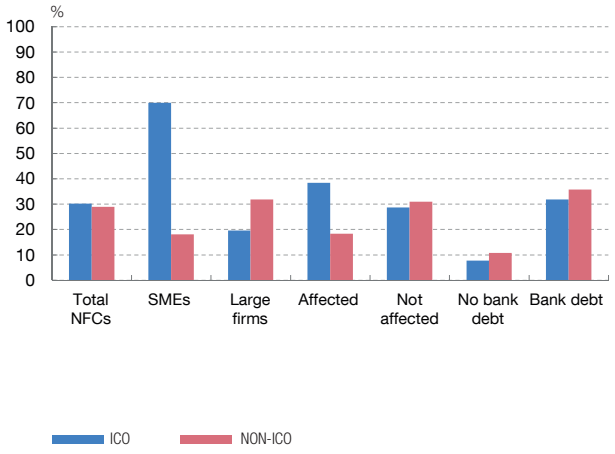
60 One is the Strategic Companies Solvency Support Fund, managed by SEPI (the State Industrial Holdings Corporation) and with an envelope of €10 billion, which aims to recapitalise strategic firms. The other one, managed by COFIDES (the Spanish Development Financing Company) and funded with €1 billion, is aimed at mid-cap companies.

Chart 1.24

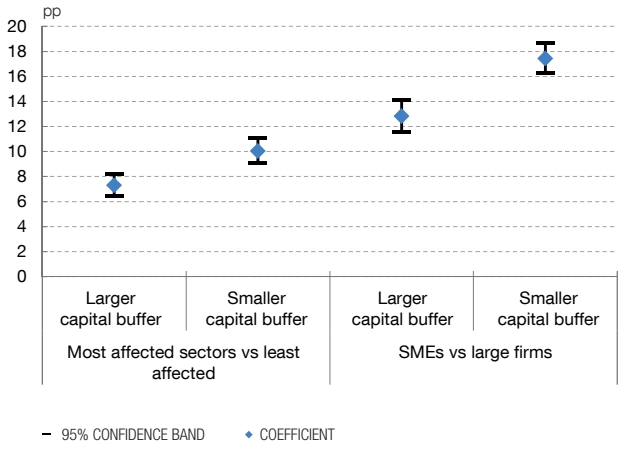
THE PUBLIC GUARANTEE FACILITIES WERE ESSENTIAL IN UNDERPINNING THE SUPPLY OF CREDIT FOLLOWING THE PANDEMIC AND TO COVER SPANISH FIRMS' LIQUIDITY NEEDS

In 2020, 60% of Spanish NFCs' liquidity needs were covered through bank loans. In addition, loans that were channelled through the public guarantee facilities appear to have covered 30% of the liquidity needs. This percentage stood at 70% and 39% in the case of SMEs and the firms most affected by the pandemic, respectively. However, firms with no bank debt before the pandemic only covered 18% of their liquidity needs through bank loans. The banks with worse capital buffers made greater relative use of government-backed lending to these two groups of firms. Thus, such guarantees would have contributed to sustaining the supply of credit to these firms thanks to the relief provided in consumption of own funds.

1 COVERAGE OF FIRMS' LIQUIDITY NEEDS IN 2020 (a) (b)



2 PROPORTION OF NEW LENDING TRANSACTIONS WITH PUBLIC GUARANTEES, BY BORROWER CHARACTERISTIC AND BANK SOLVENCY (c)



SOURCE: Banco de España.

a Includes new credit transactions drawn. Size is defined in line with the European Commission Recommendation. The sectors most affected by the health crisis are transportation, accommodation and food service activities, recreation and motor vehicles. The firms are classified as having bank debt or not based on whether they had bank loans on their balance sheet in December 2019.

b Only credit transactions maturing after 2020 are considered, as those maturing within the year would have to be refinanced. Firms' liquidity needs are defined as the sum of debt maturities and the liquidity deficit generated both by the operating activity and by investment in fixed assets.

c The diamonds are the coefficients estimated in a regression analysis in which: (i) the dependent variable is the amount of the new State-backed loans as a percentage of total credit obtained by a firm from a particular bank in a given month, and (ii) the explanatory variables of interest are firm characteristics that proxy their restrictions in terms of access to financing and their interaction with a dichotomous variable that takes the value of 1 for banks with smaller capital buffers (those whose capital buffers are below the average for Spanish banks as a whole) and zero otherwise (banks with larger capital buffers). The firm characteristics of interest are: (i) a dichotomous variable that is equal to 1 if the firm operates in one of the sectors most affected by the pandemic (see Note a), and (ii) an indicator of whether the firm is an SME (see Note a). The estimate is for a period between March and December 2020 and also uses firm-level controls and bank-time and province-time fixed effects. The vertical lines denote the 95% confidence bands.

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business outlook. To date, the fund managed by SEPI has granted assistance amounting to €2.1 billion in 19 different operations, and that managed by COFIDES has done so for €329 million, in 26 operations. €8.6 billion of unused funds therefore remain.

The direct assistance was aimed at reducing new debt built up by firms as a result of the pandemic. In this case, the aid was not allocated on a case-by-case basis. Instead, objective criteria were established based on the sector of activity and the size of the fall in turnover.[61] The amount disbursed under this scheme is estimated

61 Specifically, direct assistance was aimed at firms with falls in turnover in excess of 30% in 2020 and which had recorded accounting profits in 2019. The regional governments, which managed the assistance, had some flexibility in the application of these criteria.

at around €5 billion, of which somewhat more than €4 billion were for business entities, mainly SMEs (91% of the total), and the rest was for sole proprietors.

This assistance scheme seems to have contributed to reducing a small part of the SME solvency problems that arose as a result of the pandemic. The percentage of firms of this type that went into a capital shortfall position after the crisis seems to have declined relatively modestly (from 6.4% of the total SMEs to 5.7%) and the overall capital shortfall of firms in this situation hardly declined by 9%, to 0.27% of GDP, according to Banco de España estimates (see Chart 1.25.2).[62] Such a low percentage is largely due to the fact that the fund allocation criteria did not include any requirement relating to firms' financial position. In particular, some firms that experienced solvency problems as a result of the crisis did not receive aid because they did not meet the standards set for receiving the aid. As noted earlier, it should be borne in mind that the funding was, according to the estimates made, sufficient to cover the total capital shortfall of SMEs, as shown in Chart 1.25.1.

The analysis of the results of the successive editions of the EBAE supplements the assessment of the success of the measures. A longitudinal analysis of the EBAE data is used to assess the strength of the recovery after the pandemic based on the level of use of public assistance schemes. In particular, firms that made a greater use of furlough schemes have recovered their turnover levels somewhat more markedly (see Chart 1.26.1). It is also interesting to note that the firms that resorted to ICO guarantee facilities at the onset of the pandemic appear to have re-optimised their investment plans in 2021, meaning that they simultaneously reduced total spending on investment and increased spending on digitalisation (see Chart 1.26.2).[63]

Furthermore, the EBAE's longitudinal sample can be used to assess the magnitude, to date, of the consequences of the health crisis on the sample firms based on their characteristics. These consequences are measured through the gap with respect to the pre-crisis turnover level. The characteristics considered include the extent of the fall in activity at the start of the crisis, the sector and region in which the firms operate, size, indebtedness, age and temporariness. Notably, in terms of size, a stronger recovery is not observed in 2021 among the smaller firms, which were the ones initially hardest hit by the effects of the crisis.[64] As was to be expected, the increase in turnover in 2021 was more pronounced among firms with higher levels of productivity and lower indebtedness.

On the whole, the evidence available tends to suggest that the forceful public policy response seems to have helped reduce the long-term consequences of

62 For further details, see Blanco and Mayordomo (2022).

63 The firms that resorted more to remote working and e-commerce in 2020 were those that invested more in digitalisation in 2021.

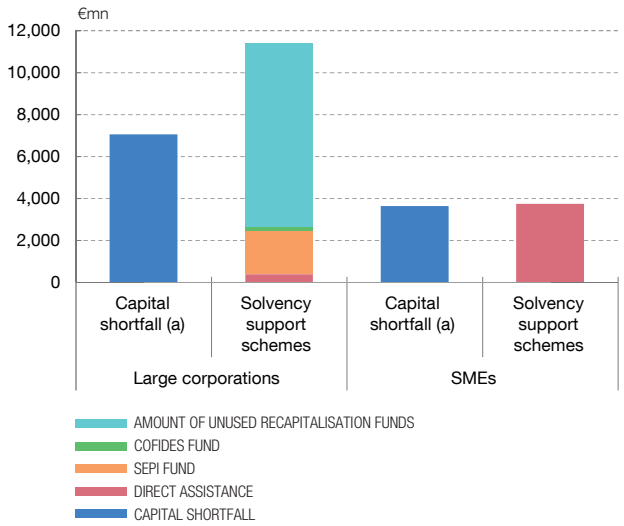
64 See Fernández-Cerezo et al. (2021).

Chart 1.25

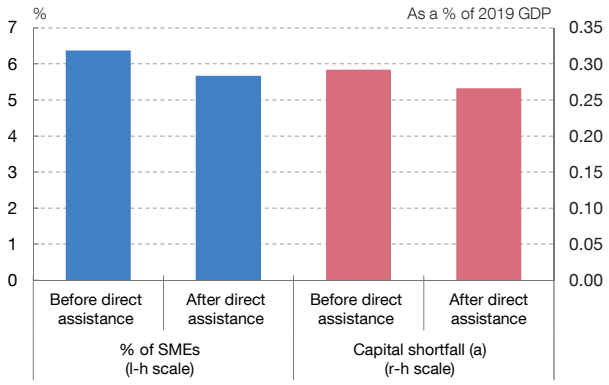
THE DIRECT ASSISTANCE SCHEME HAS PARTIALLY MITIGATED THE DETERIORATION IN SMEs' SOLVENCY

The funds under the corporate solvency support schemes were sufficient to cover all the capital shortfalls of firms caused by the crisis. It is estimated that, as a result of the direct assistance scheme, almost 1 pp fewer SMEs went into a capital shortfall position after the crisis and that the overall capital shortfall of firms in this situation declined by 9%.

1 CAPITAL SHORTFALL IN 2020 AND AMOUNT UNDER THE CORPORATE SOLVENCY SUPPORT SCHEMES



2 SMEs WITH A CAPITAL SHORTFALL IN 2020



SOURCE: Banco de España.

a Firms are deemed to have a capital shortfall when their capital ratio (Equity/Total assets) was positive in 2019 but fell in 2020 to stand below 15%. The amount of the capital shortfall is the volume required by firms with a shortfall to return to their 2019 capital ratio, with a 15% limit.

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the pandemic-induced crisis. Massive employment losses and numerous firm closures have been observed in past recessions. A moderately paced closure of firms is essential for a fluid reassignment of resources towards their most productive uses (and, therefore, to boost the pace of growth of aggregate productivity). However, historically it has been observed that the episodes of very high rates of firm closures have given rise to prolonged periods of slow growth in total factor productivity. On this occasion, the measures implemented have managed, as a whole, to preserve most of the pre-pandemic employment and have avoided an increase in the rate of firm closure. In fact, according to data from the Central Business Register (DIRCE, by its Spanish acronym), the rate of business closures even decreased by 1 pp in 2020. This suggests that the long-term consequences of the health crisis will not be very significant.

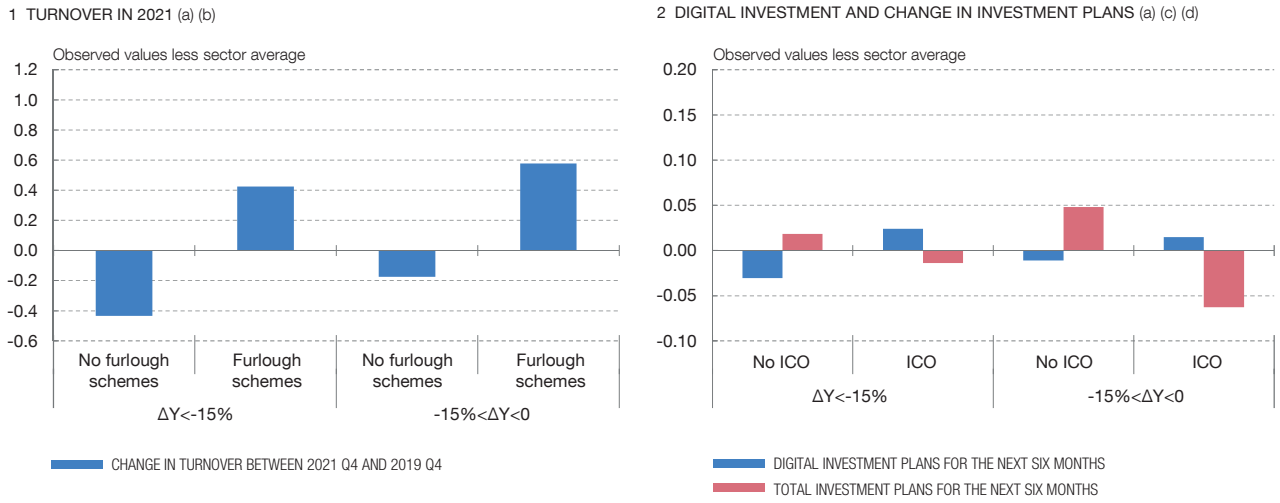
The cost in budgetary terms of the public finances absorbing the shock has been very high. In particular, it is estimated that the different revenue and spending measures relating to the absorption of the shock triggered by the pandemic accounted for an amount equivalent to 4% of GDP in 2020.[65] This amount declined in 2021, owing to the lifting of restrictions on mobility, which made it possible to

65 Spending accounted for 3.9% of GDP and tax cuts for the remaining 0.1%.

Chart 1.26

THE DIFFERENT ASSISTANCE PROGRAMMES DEPLOYED IN 2020 SEEM TO HAVE CONTRIBUTED TO THE RECOVERY IN ACTIVITY IN 2021

Firms that used furlough schemes more in 2020 recovered more strongly over the course of 2021, once the characteristics of the firms are taken into account. Use of ICO-backed loans appears to have contributed to greater investment in digitalisation.



SOURCE: EBAE.

a ΔY denotes the change in the firm's turnover between 2019 Q4 and 2020 Q4.
b The variable "Furlough schemes" denotes those firms that in 2020 Q4 reported that such schemes were proving "important" or "very important", whereas "No furlough schemes" denotes those that reported that these schemes were proving "unimportant" or "of little importance".
c The variable "ICO" denotes those firms that in 2020 Q4 reported that the ICO facilities were proving "important" or "very important", whereas "No ICO" denotes those that reported that the ICO facilities were proving "unimportant" or "of little importance".
d A positive (negative) value denotes an increase in the probability of increasing (decreasing) digital or total investment in the next six months. Investment in new technologies and digitalisation is deemed digital investment. Total investment plans are calculated on the basis of the question on the likelihood of reducing pre-planned investments at the firm.

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decrease spending on benefits for furloughed employees and the self-employed and on subsidies provided to firms in connection with these schemes, and to the use of European funds to finance part of these expenses. That said, the budgetary impact remained very high (2.7% of GDP).[66] The extraordinary fiscal stimulus deployed in response to the health crisis, together with the operation of the automatic stabilisers, led to a sharp increase in the level of government debt, reducing the room for manoeuvre in the face of new shocks, such as those linked to the rise in energy prices. In addition, there are other contingent costs of unknown magnitude associated with ICO-backed loans that might default. Together with the budgetary costs, other costs related to possible efficiency losses may arise, insofar as prolonging the actions entails the risk of discouraging the return of workers to effective employment and of hindering the closure of non-viable firms in the long term, where such closure would be beneficial from the standpoint of the allocation of resources of the economy as a whole.

66 Spending represented 3% of GDP and tax cuts 0.1%. 0.4% of GDP, which was financed with a charge to the REACT-EU funds, is to be deducted from the sum.

In a setting in which the pandemic appears to be receding, now would seem to be the time to roll back the bulk of the measures adopted to combat the health crisis in order to recover fiscal space. This would allow for better, more targeted action to help the agents that are more vulnerable to the rise in energy costs and to mitigate the potential persistent effects of the pandemic on certain groups. It is also necessary to recover the fiscal headroom required to deal with longer-term challenges, such as population ageing or the energy transition. Chapter 2 analyses in depth the characteristics of a medium-term fiscal consolidation plan to restore fiscal policy leeway.

4.4 Domestic economic policies in response to the war

The domestic economic policy response to the war has two prongs: budgetary policy measures and the so-called incomes agreement. Fiscal policies should aim to provide support to lower-income households, which are those that are hardest hit by inflation, and to the firms that are most vulnerable to this new shock. The incomes agreement between the different economic agents aims to share the costs of the crisis.

In the fiscal policy area, the Government has approved the Emergency Action Plan in Response to the War. The Plan has an envelope of €6 billion of public expenditure and also includes a corporate lending scheme backed by the ICO for €10 billion. The Plan also considers a series of additional actions with no direct budgetary cost.

Public expenditure mostly takes the form of transfers to households and firms. Subsidising the price of fuel is one of the measures. Actions aimed at households include raising the Minimum Income Scheme amount by 15%, increasing the scope of the social rebate on electricity to include a further 600,000 households and extending the energy bill tax cuts to 30 June 2022. In the case of firms, specific aid measures have been approved for agriculture and fishing, freight and passenger transport, and the electricity-intensive industry. Aside from the transfers to private agents, the Plan also includes public expenditure amounting to €1 billion, aimed at improving cyber security in Spain.

Measures that have no direct budgetary cost affect the labour and energy markets. Labour market initiatives include the prohibition of dismissal for economic reasons indemnified with 20 days' pay per year worked and a mandate to maintain employment for firms resorting to furlough schemes. As regards the energy markets, at the European Council meeting held on 24-25 March, the Member States were called on to apply emergency temporary measures to contain electricity prices. The Iberian exception – in terms of the Iberian Peninsula's interconnection with the rest of the EU being less than 3% – was also acknowledged at that meeting. This has

recently enabled Spain and Portugal to reach an agreement with the European Commission for a temporary (12-month) mechanism to cap the price of gas and lower that of electricity.[67] Also, an update of the tax regime for electricity generation from non-polluting sources has been proposed, together with some supplementary regulatory measures to accelerate the deployment of renewable energies and foster energy-saving.

Support measures for households and firms against the energy price shock should be temporary, readily applicable and aimed at agents truly needing them. Its temporary nature is based on the need to restructure public finances and on the transitory (in principle) nature of the increase in energy prices. From this perspective, although the increase in the Minimum Income Scheme serves to compensate the most vulnerable households for losing purchasing power as a result of the rise in energy prices, perhaps it would have been preferable to use transfers linked to level of income (a function which the social rebate on electricity performs to a certain point). The need to swiftly help the most affected agents is covered through the fuel price subsidy, but this is a very general measure which may even be regressive, since lower-income households will probably consume these products less. Also, the desirability of the targeted nature of the measures is based on the advisability of not fostering excess demand that would exacerbate bottlenecks and feed back into the inflationary process. Lastly, the temporary and selective nature of the assistance to firms is justified by the need to not hamper the reallocation of resources.

The new type of furlough scheme called "RED" may help to mitigate the consequences of the war. The recent labour reforms included the creation of this new type of furlough scheme for economic, technical, organisational or production reasons, which allows reducing working hours or suspending contracts with social security contribution rebates, in order to accommodate cyclical shocks to help bring about a sectoral transformation through employee re-skilling.

The increase in imported commodity prices is equivalent to a loss of income for the domestic economy that should be shared among the different agents. Spain does not produce a substantial portion of commodities, particularly energy ones, whose prices have risen since early 2021, and instead has to import them. Consequently, Spain must use a significant part of the income generated by its productive factors to pay for these goods. In sum, the remuneration of productive factors (capital and employment) must decrease overall.

The agents must accept that, at aggregate level, all the economy's incomes will inevitably lose purchasing power. If businesses were to demand higher selling prices to offset their cost increases and employees were to demand wage increases

67 Not enough is known about this mechanism at the cut-off date for this report to accurately assess its implications on multiple fronts.

in an attempt to fully recoup the rising energy costs, the result would be a price-wage feedback loop where wages would end up being higher but the overall purchasing power would not. Also, should a similar process not occur in other euro area countries, the result would be a loss of competitiveness and, ultimately, of net exports, GDP and employment. The nature of the shock requires firms and employees to accept a moderation of their margins and some loss of the purchasing power of wages, respectively, in proportions to be determined through social dialogue. A hypothetical attempt by the two groups to maintain the purchasing power of their current income does not ensure success for either of them and, at aggregate level, entails the attendant costs of a high inflation rate, such as efficiency losses and higher inequality.

To date, employees and firms are sharing costs tacitly. The scant information that is available suggests that firms are only partially passing through the recent increase in their costs to their selling prices. Similarly, the information on collective bargaining indicates that the pass-through of the rise in inflation to wage increases is modest.

Going forward, the distribution of the loss of income should abide by certain principles. First, the uneven impact of the current shocks on employees, firms and sectors should be addressed. Given this unevenness, the necessary coordination at domestic level should be combined with mechanisms enabling the agreement to be adapted to the differences in productivity and activity existing across firms and sectors. Likewise, if there are segments of households whose living conditions have been especially adversely affected by higher energy prices, it would be desirable for the incomes agreement to entail a smaller loss of resources for these agents. Second, it would be advisable to avoid formulas that automatically index wages to past inflation or indexation clauses. It would also be desirable for the incomes agreement to envisage multi-annual commitments both to wage increases – where the nominal benchmarks for wage bargaining should exclude components associated with energy products and should be based on the projected trend in underlying inflation – and to job protection. Lastly, an explicit profit-margin moderation commitment would help to limit the pass-through of cost increases to final prices, while maximising the advantages of wage moderation in terms of business competitiveness.

A factor to be taken into account when designing the incomes agreement is the inclusion of recipients of public transfers. In particular, the commitment to revalue pensions in line with the HICP will have consequences on public expenditure in 2022 as a result of the compensation for inflation in 2022, and in 2023 and subsequent years owing to the consolidation of the higher current inflation in the pension amount. Beyond the need to complete the pension system reform in such a way that a decision is made as soon as possible about the sources of income that will finance this higher spending, maintaining the purchasing power of pensions raises certain equality issues against the backdrop of the current shock of loss of income compared with

the rest of the world. On the one hand, these considerations of equality justify ensuring the purchasing power of minimum pension recipients. But, on the other, outside of this particular group, the fact that some agents (pensioners as a whole) are excluded from the adjustments necessarily means that other domestic economic agents (recipients of income from work and capital) must assume a greater share of these costs.

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2

CHALLENGES AND POLICIES FOR SUSTAINABLE AND BALANCED GROWTH OF THE SPANISH ECONOMY

CHALLENGES AND POLICIES FOR SUSTAINABLE AND BALANCED GROWTH OF THE SPANISH ECONOMY

1 Introduction

This chapter presents the main structural challenges facing the Spanish economy over the years ahead and some of the economic policy levers available for tackling them. In this extraordinarily uncertain time, the performance of activity in Spain over the coming quarters will be chiefly determined by how the COVID-19 health crisis is overcome, how the war in Ukraine unfolds and the degree of persistence of the current inflationary episode (see Chapters 1 and 3 of this report). However, over a longer time horizon, the outlook for the Spanish economy will be shaped by a set of huge structural challenges. Notable among these challenges, in particular, are boosting job creation and reinforcing employment stability (see Section 2.1), improving training and increasing human capital (see Section 2.2), addressing inequality (see Section 2.3), increasing firm size and facilitating cross-sectoral reallocation of resources and innovation (see Section 2.4), taking full advantage of the execution of the Next Generation EU (NGEU) programme (see Section 2.5) and bolstering the sustainability of public finances (see Section 3). Nor must other further challenges be neglected, such as those stemming from the fight against global warming and from the green transition (see Chapter 4 of this report). For an in-depth analysis of the Spanish banking sector's situation and the challenges it faces, the reader is referred to the *Financial Stability Report*[1] published by the Banco de España in May 2022.

The Spanish economy's ability to follow a robust, sustainable and inclusive growth path in the medium and long term will hinge on the economic policy response to this set of challenges. In this respect, the scale of the challenges and their close interrelatedness call for a comprehensive strategy of lasting and ambitious structural reforms. At the same time, in a setting in which European policies play an increasingly significant role in the economic activity of individual Member States, it is also essential that the European institutional framework is decisively further reinforced (see Section 4).

2 A broad range of structural challenges and policies to address them

In recent years, the Banco de España has detailed, in various reports,[2] the main challenges that will influence the future course of the Spanish economy. Most of the challenges facing the Spanish economy pre-date the pandemic.

1 See Banco de España (2022a).

2 See, for example, Banco de España (2020 and 2021a).

Examples here include the need to boost productivity growth, to correct dysfunctions in several goods and factor markets (in the labour market in particular), to make public finances more sustainable and to address the challenges posed by population ageing, inequality and climate change. However, others are relatively new, such as the need to adapt to an accelerated digitalisation of economic activity and to the recent changes in globalisation dynamics.

Within the framework of a comprehensive strategy of structural reforms, the Banco de España has also tabled a broad range of economic policy measures that could help turn the challenges facing Spain into opportunities (see, for example, Figure 2.1). These challenges are explored in detail below, together with the recommendations made in the light of the latest data available, the most recent analytical work and the public policy developments of recent months.

2.1 The challenge of boosting job creation and strengthening employment stability

One of the greatest challenges for the Spanish economy is stimulating job creation and reducing employment instability. In recent decades, Spain's unemployment rate and temporary employment ratio have, on a persistent basis, been significantly higher than the average of the euro area economies, particularly for young people (see Charts 2.1.1 and 2.1.2). Furthermore, young people have been appreciably affected by the incidence of part-time employment, which has increased considerably since the global financial crisis, surpassing that observed in the euro area (see Chart 2.1.3).

High employment instability has adverse economic effects in many spheres. For example, employment instability affects the accumulation of workers' human capital and can thus have very persistent effects on their working lives. In particular, Garcia-Louzao, Hospido and Ruggieri (2022) find that the employment stability afforded by a permanent contract in Spain can lead to cumulative wage differences of up to 16 percentage points (pp) between a worker on this type of contract and another on a temporary contract, over 15 working years (see Chart 2.2.1). The harmful effects of job instability are felt not only in the accumulation of human capital of the workers affected, but also in that of their families. Specifically, Ruiz-Valenzuela (2020) suggests that Spanish pupils whose parents have more job instability as a result of being on a temporary contract are 7.8 pp less likely than others to complete their compulsory education at the age of 16. These channels aside, insofar as employment instability has a particularly strong impact on young people, it has a bearing on pivotal decisions, such as decisions to leave home, to form new households and to have children, and is a key factor when explaining the high per capita income inequality in Spain.[3]

3 See Anghel et al. (2018).

Figure 2.1
COMPREHENSIVE STRUCTURAL REFORM STRATEGY

SOURCE: Banco de España.

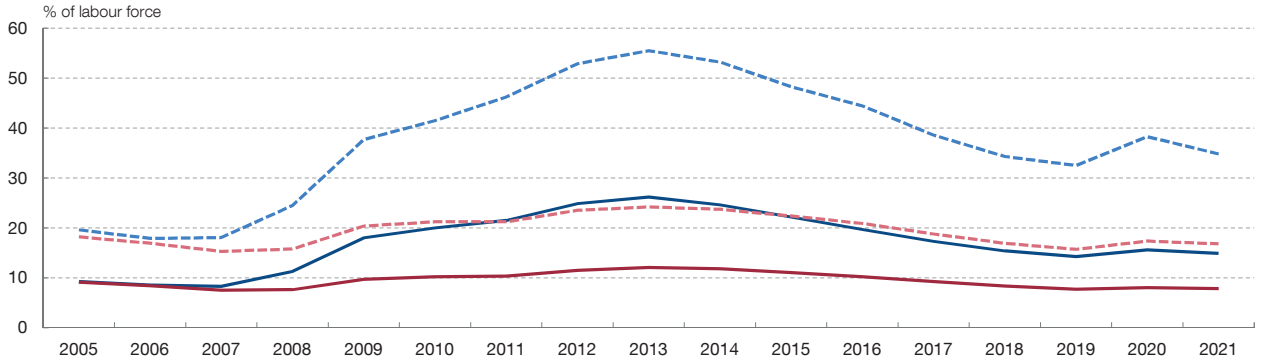
Employment instability affects not only households' income, but also the degree of uncertainty about their future income. Arellano et al. (2021) suggest that employment instability and uncertainty are positively related. This relationship was clear during the initial stages of the pandemic. Analysis of the latest wave of the Spanish Survey of Household Finances (EFF, by the Spanish abbreviation) shows that 25% of Spaniards aged 18-64 experienced job losses, reductions in the numbers of hours worked or business closures between November 2020 and June 2021 (see Chart 2.2.2). Within this group, over 50% received public support, either in the form of unemployment

Chart 2.1

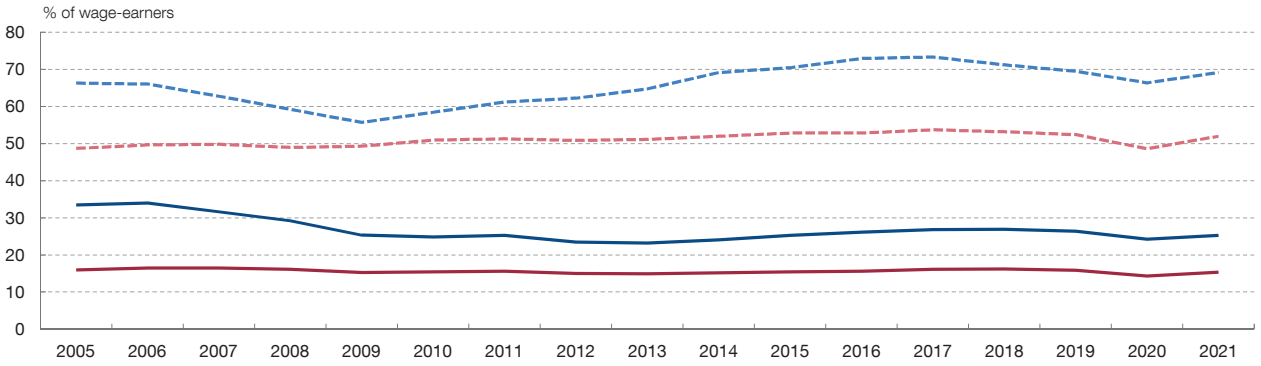
UNEMPLOYMENT, TEMPORARY EMPLOYMENT AND PART-TIME EMPLOYMENT

Traditionally, Spain's unemployment rate and temporary employment ratio have been significantly higher than the average of the euro area economies. For instance, in 2021, the unemployment rate for the population aged 15-64 was 14.9% in Spain, 7 pp higher than that of the euro area, while the temporary employment ratio was 25.2%, 10 pp higher than in the euro area. These differences are greater in the case of young people. Furthermore, young people have also been appreciably affected by the incidence of part-time employment, which has increased considerably since the global financial crisis, surpassing that observed in the euro area as a whole. Specifically, in 2021 the rate of part-time employment for young people stood at 38.7% in Spain, 4.5 pp more than in the euro area.

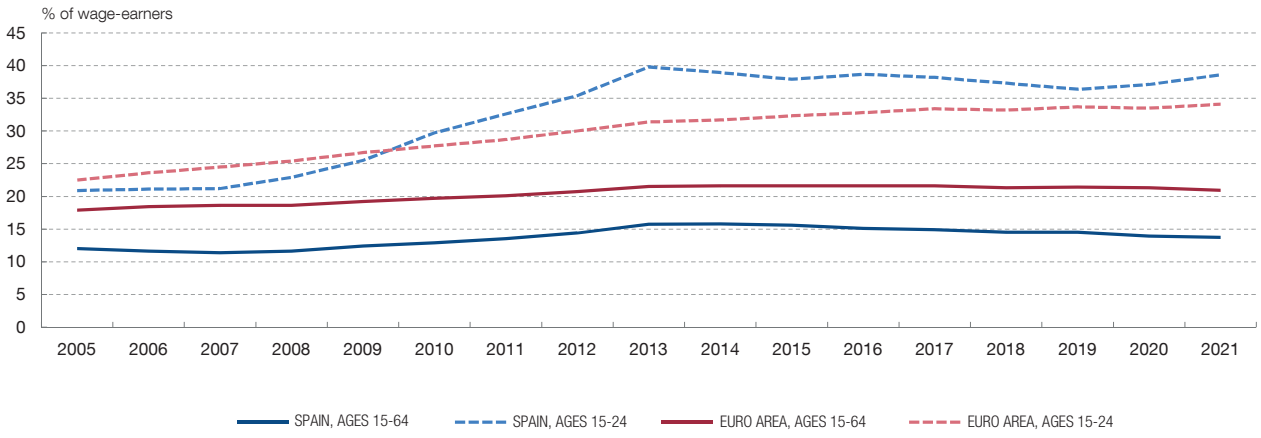
1 UNEMPLOYMENT RATE



2 TEMPORARY EMPLOYMENT RATIO



3 RATE OF PART-TIME EMPLOYMENT



SOURCE: Eurostat (Labour Force Survey).

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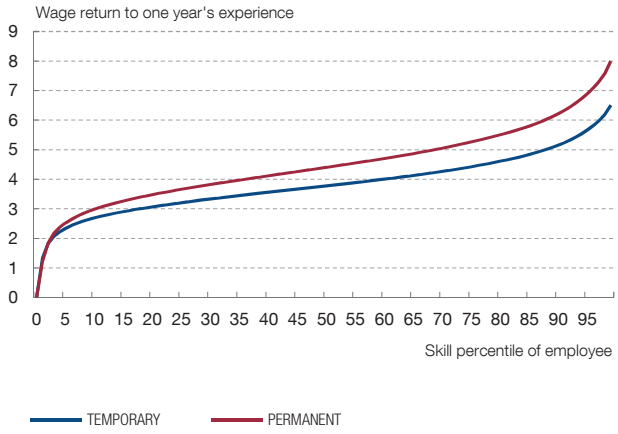
Chart 2.2

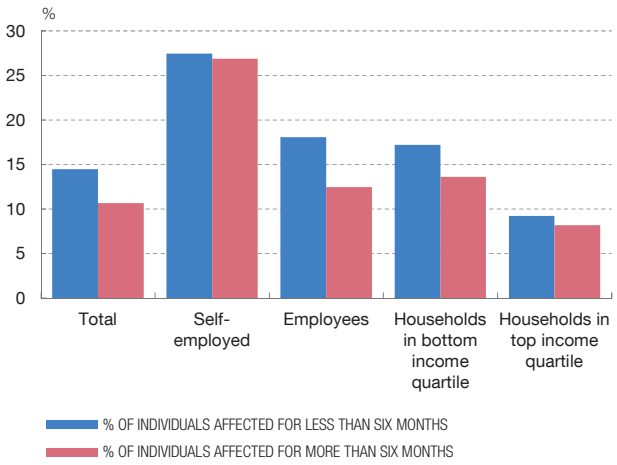
SOME ADVERSE ECONOMIC EFFECTS OF EMPLOYMENT INSTABILITY

According to Continuous Sample of Working Histories data for the period 2005-2018, the employment stability afforded by a permanent contract in Spain leads to significant wage differences after a number of years. Moreover, on Spanish Survey of Household Finances data for 2020, a large number of Spaniards experienced job losses, reductions in the number of hours worked or business closures between November 2020 and June 2021. The survey suggests that those whose employment activity was suspended for a prolonged period reported being more uncertain about their future income and having lower emotional well-being.

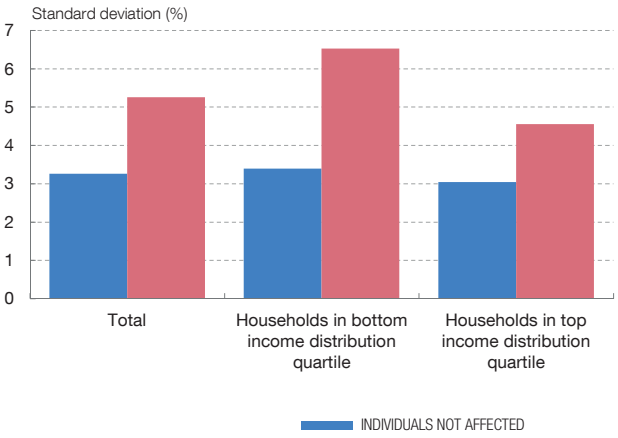
1 WAGE RETURNS TO EXPERIENCE BY TYPE OF CONTRACT AND SKILL LEVEL



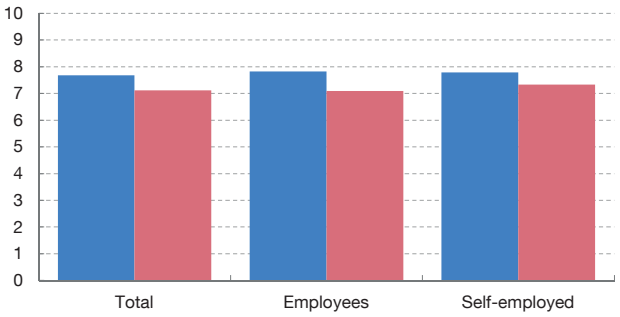
2 PERCENTAGE OF INDIVIDUALS AFFECTED AND DURATION OF SUSPENSION OF ACTIVITY



3 UNCERTAINTY ABOUT FUTURE INCOME



4 AVERAGE SATISFACTION: TOTAL AND BY EMPLOYMENT STATUS IN 2019 (a)



SOURCES: INE (Continuous Sample of Working Histories) and Banco de España (Encuesta Financiera de las Familias 2020).

a Average satisfaction is measured drawing on a question in the Spanish Survey of Household Finances on "the level of life satisfaction of the respondent, considering all aspects jointly". A value of 10 would indicate "fully satisfied" and a value of 0 would indicate "not satisfied at all". The chart depicts the average value for each group.

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assistance benefits or through the mechanisms specifically deployed for workers on furlough (ERTE, by the Spanish abbreviation) and the self-employed whose activity was suspended. Despite the buffering effect of this public support, the future income expectations of those who were affected by this type of reduction in their employment activity for more than six months showed a higher degree of uncertainty (see Chart 2.2.3).

This greater uncertainty has direct consequences on spending decisions, but also on emotional well-being. Again, taking the recent health crisis as reference, the latest EFF shows that those whose employment activity was suspended for a prolonged period during the initial stage of the pandemic – and who were more uncertain about their future income – reported having, months later, lower life satisfaction levels than other respondents (see Chart 2.2.4).[4]

In a setting like the present one, in which new forms of employment are emerging, it is even more important to address the challenges posed by employment instability. In recent years, the growing digitalisation of economic activity has given rise to new forms of interaction between the supply and demand for labour. Some of these developments have enabled firms to resort less to establishing stable relationships with certain employees, which appears to have contributed to shortening contract terms and to increasing part-time employment.[5] However, this increase in part-time employment may also be associated with some workers potentially preferring to have a contract of this type to supplement their income from other part-time jobs.[6]

Although these new forms of employment have developed relatively quickly, very little is as yet known about their relative importance or their implications. In practice, obtaining precise measures of the quantitative relevance of these new ways of working is difficult as official statistics are not yet properly designed to capture them. However, drawing on current sources (specifically the European Commission's COLLaborative Economy and EMployment research project), Gómez and Hospido (2022) find that, in 2018, 18.5% of Spanish workers worked at least sporadically for digital ecommerce platforms in Spain, the highest share of the 16 European countries included in the research and far surpassing those observed in Germany (12.1%) and France (8.4%), for example. Moreover, this study suggests that digital platform workers comprise a very specific group that is not directly comparable either with employees or with the self-employed.

In this setting, one of the main objectives of the labour market reform enacted in 2022 is to combat the high proportion of temporary employment in the Spanish labour market.[7] To this end, a set of measures have been agreed to basically introduce stricter limits on the use of temporary contracts, restrict the

4 In the same vein, drawing on two surveys conducted in Spain in May and November 2020, Martínez-Bravo and Sanz (2021) suggest that one of the main reasons why Spaniards on lower incomes reported their emotional well-being as having worsened during this period was a loss of income and/or employment.

5 See, for example, Acemoglu and Autor (2011), Feenstra and Hanson (1999) and Comin, Danieli and Mestieri (2020).

6 See, for example, Hall and Krueger (2018).

7 The labour market reform came into force on 28 December 2021, with the publication of Royal Decree-Law 32/2021 on urgent measures for labour reform, for guaranteeing job stability and for transforming the labour market. It was subsequently passed with no amendments by Parliament on 3 February 2022. There is a three-month moratorium for applying some elements of this reform.

duration of training contracts and eliminate contracts for specific tasks and services, which were widely used by firms before the legislation came into force. In addition, the reform allows subcontractors and temporary employment agencies to use permanent discontinuous contracts. However, measures making permanent contracts more attractive have not been envisaged under this reform.[8]

In recent months, permanent hiring has quickened significantly, and temporary hires have decreased. Since the summer of 2021, the year-on-year growth rate of permanent hires has increased, while growth in temporary hires has decreased (see Chart 2.3.1). These dynamics have intensified since the start of 2022, prompting a marked reduction in the temporary employment ratio (see Chart 2.3.2).

It is, however, early to assess the impact of the labour market reform, and any such evaluation will have to consider numerous issues. Notable among them is the impact on employment because, in principle, the reduction in temporary contracts might stem from both temporary employment being replaced by permanent employment and from the destruction of temporary jobs. Answering this question will require an extensive period over which to analyse job creation and destruction dynamics. In any event, some studies for other countries that have previously enacted similar reforms suggest that they have had a certain cost in terms of lower net job creation.[9] Also, insofar as the labour market reform has been conducive to contractual stability in temporary employment agencies, the type of professional development of those workers who start their career at such agencies will need to be analysed. Another issue that will need to be determined is whether the reform prompts an increase or decrease in labour turnover and, therefore, its impact on the accumulation of workers' human capital and their working lives.[10] Furthermore, labour market regulation can also affect the type of jobs available and, in sum, the type and productivity of the firms that are created.[11] In particular, some of the literature suggests that greater constraints on temporary contracts increase business productivity, but at the cost of higher unemployment.[12] All of these overwhelmingly relevant questions should be subject to rigorous analysis in the years ahead.

Having a diagnosis on these issues is essential to recalibrating the characteristics of contracts, should it be necessary. In this respect, various

8 The only exception is the construction sector. Here, the new labour market reform introduces additional grounds for terminating the permanent contracts of workers assigned to construction work in certain circumstances where no vacancies exist for the worker in other work at the same firm. Such dismissals have a severance cost of 7%, which is equivalent to around 25 days per year worked and, therefore, at a midpoint between the protection afforded for temporary employment (12 days per year) and that for permanent employment (33 days in the case of unfair dismissals).

9 See, for example, Palladino and Sartori (2022), for Italy, and Cahuc et al. (2022), for Portugal.

10 See, for example, García-Pérez, Marinescu and Vall Castello (2018) and Garcia-Louzao, Hospido and Ruggieri (2022).

11 See Blanchard and Tirole (2022).

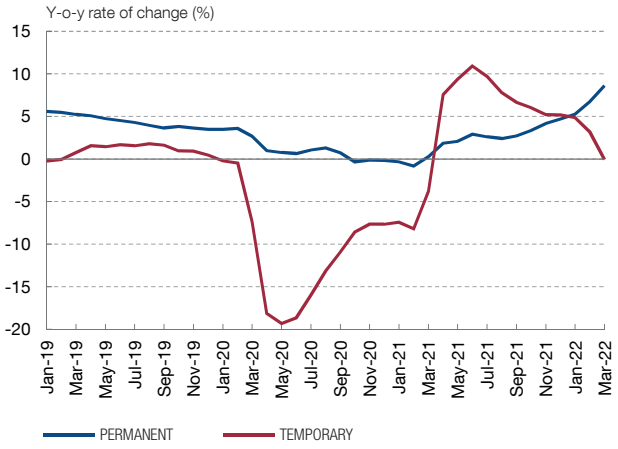
12 See Pijoan-Mas and Roldan-Blanco (2022), forthcoming, for Spain; Hirsch and Mueller (2012) for Germany; and Cappellari, Dell'Aringa and Leonardi (2012) for Italy.

Chart 2.3

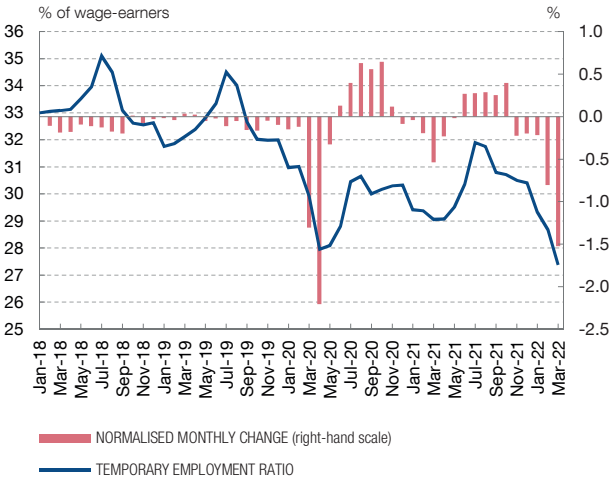
CHANGES IN TEMPORARY CONTRACTS FOLLOWING THE LABOUR MARKET REFORM

On social security registration data to March, year-on-year growth in social security registrations with permanent contracts quickened to 8.6%, up from 4.7% in December, while those with temporary contracts decreased 0.1%, compared with a year-on-year increase of 5.2% in December. The temporary employment ratio declined by 3 pp with respect to December.

1 SOCIAL SECURITY REGISTRATIONS BY TYPE OF CONTRACT



2 TEMPORARY EMPLOYMENT RATIO



SOURCES: Banco de España and Ministerio de Inclusión, Seguridad Social y Migraciones.

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Banco de España reports[13, 14] consider different contractual alternatives that would allow for a more equitable distribution of job protection for workers, based on their work experience, while retaining some flexibility in firms' hiring.

The labour market reform has also brought about changes in collective bargaining. The new legislation retains some of the internal flexibility mechanisms (such as opt-outs and unilateral changes by the employer to working conditions) that were conceived for ailing firms and were widely used during the last recession in the Spanish economy and, to a lesser extent, in the recent health crisis. However, the reform automatically extends the term of agreements following their end until a new agreement is signed and prevents firm-level agreements from setting lower salaries than those established in the corresponding sectoral agreement. While these changes appear to be of less importance than the rest of the reform,[15] the extent to which they may affect the collective bargaining process, negotiated wage increases and employment in the medium term, especially in those firms with productivity levels below the sector average, will need to be analysed.

13 See, for example, Banco de España (2021b).

14 See Banco de España (2021c), "Labour market duality and severance costs: a model based on the Austrian fund", Box 2.4, *Annual Report* 2020.

15 The practical implications of eliminating such extensions in the 2012 labour market reform were limited, as the agreements were allowed to specify that the previous terms be maintained until a new agreement was signed. Furthermore, after that reform was enacted, the proportion of firm-level agreements did not increase, and in fact declined.

Moreover, the reform has made furlough schemes easier and created a new mechanism for sectoral restructuring processes. Following the intensive and effective use made of furlough schemes during the COVID-19 pandemic, the reform has introduced some changes to the definition and procedures associated with these schemes to streamline their use in the future. The so-called RED mechanism has also been established, consisting of two forms: a cyclical form, which is designed for macroeconomic downturns, and a sectoral form, which envisages circumstances where permanent changes arise that create a need for vocational reskilling in an industry. Exemptions from social security contributions for the workers affected have been approved, depending on the form and duration of the procedure, and workers subject to the sectoral mechanism will be required to follow a reskilling plan that includes training. Such arrangements have proven effective during eminently temporary shocks, such as the health crisis, suggesting that they could be equally valuable in temporary macroeconomic situations. However, they would not necessarily be as appropriate in other types of more structural processes, such as those that will foreseeably have to be addressed by the Spanish economy in the years ahead (see Section 2.4); in such instances, the sectoral form of the RED mechanism would be activated. Consequently, looking forward, it would be advisable to assess how effective this form of the RED mechanism is, compared with other mechanisms currently conceived for permanent restructurings (e.g. redundancy programmes), in terms of boosting the employability of the workers affected and maintaining their human capital, but also in smoothing the necessary cross-firm and cross-sectoral reallocation of resources.

2.2 The challenge of training and increasing human capital

Increasing the educational attainment level of workers and employers is crucial to reducing structural unemployment, boosting productivity and fostering the creation of higher quality jobs.[16] In recent decades, the Spanish population's level of educational attainment has improved considerably. However, Spain is still behind its European peers in this respect. By way of illustration, in 2020 Spain had the highest early school leavers' rate in the EU (see Chart 2.4.1).

Tackling this challenge is especially important at the current juncture, given the confluence of an intense digitalisation of economic activity, marked population ageing and various factors that may require a profound cross-sectoral reallocation of activity. As analysed in Section 2.4, there are notable differences as regards the relative positioning of the various sectors of activity in Spain vis-à-vis the main challenges facing the economy and society in the medium and long term.[17] This suggests that

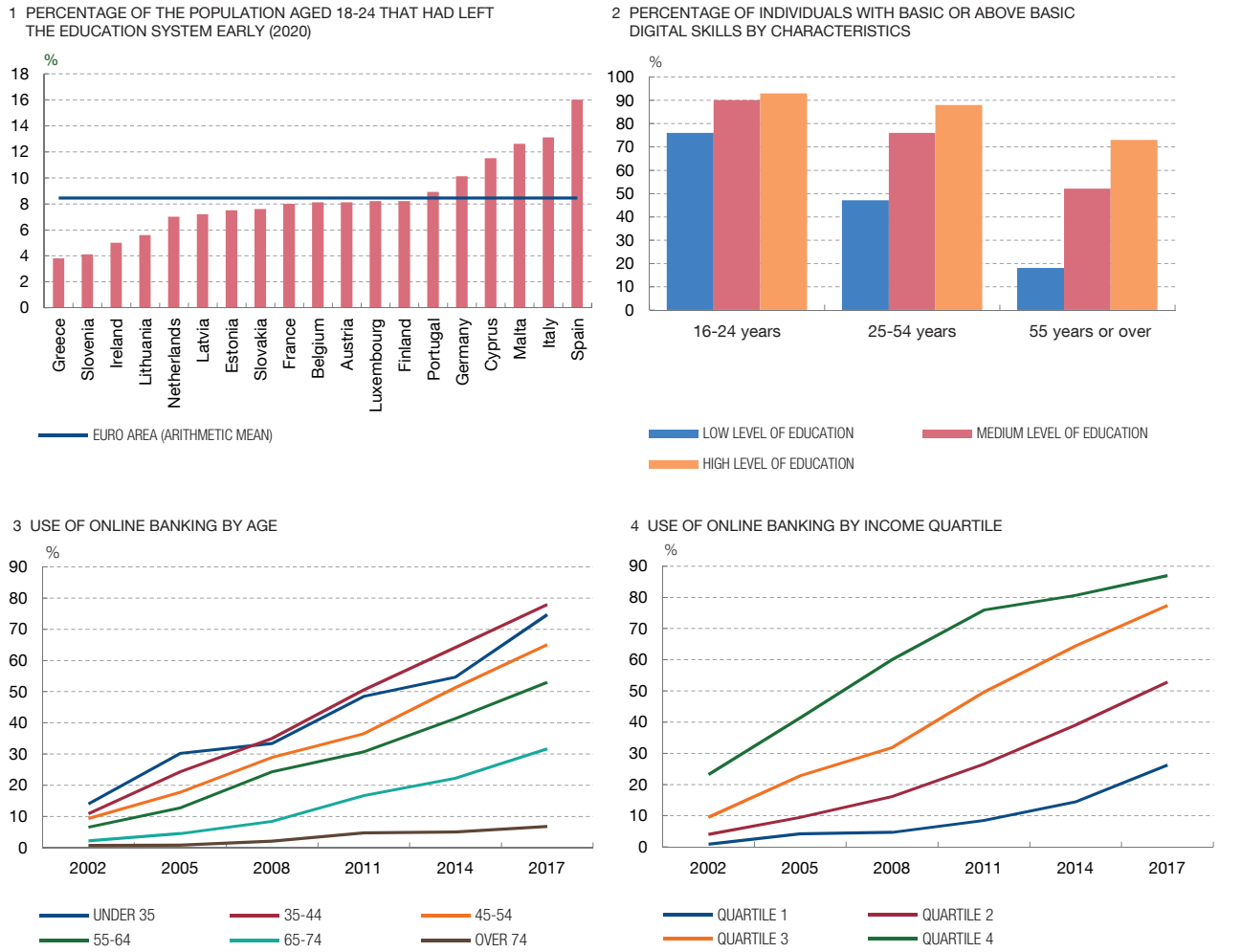
16 On Eurostat data for 2021, 36% of the self-employed, 32.7% of employers and 26.5% of employees in Spain had a low educational level. These percentages are much higher than those observed in the euro area as a whole (21.3%, 19.1% and 17.9%, respectively). For further details on these differences, see Hernández de Cos (2020).

17 See Fernández-Cerezo and Montero (2021).

Chart 2.4

SPAIN STILL FACES A SIGNIFICANT CHALLENGE RELATING TO SCHOOL LEAVERS BEFORE THE AGE OF 25 AND THE LOW DIGITAL SKILLS AMONG SOME GROUPS

Although the Spanish population's level of educational achievement has improved considerably in recent decades, in 2021 the percentage of the population aged 18-24 that had left the education system early was 13.7%, and Spain had the worst ranking in the euro area in 2020. Moreover, in a setting of population ageing and of digital transformation of many production processes, it is important that the digital skills of over-55s with a low level of education be improved. According to the Spanish Survey of Household Finances, households' use of online banking has increased significantly since 2002, driven by digitalisation. However, it has barely improved and remains at very low levels among certain groups, such as the older generation and those on lower incomes, prompting substantial, and widening, differences vis-à-vis the rest of the population.



SOURCES: Eurostat (Labour Force Survey and EU survey on the use of ICT in households and by individuals) and Banco de España (Encuesta Financiera de las Familias).

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significant sectoral reallocation processes may lie ahead in the coming years. In this setting, a comprehensive training policy that not only increases the population's human capital, but that also adapts it to the demand for skills required in the labour market, with the aim of smoothing both intra and inter-sectoral mobility, is essential.[18]

18 See Anghel and Lacuesta (2020) and Anghel, Lacuesta and Regil (2020).

Given the current changes in the demand for training, which are likely to intensify in the years ahead, the education system should be adapted to provide a decisive response. In the coming decades, over one million workers each year could see their skills become obsolete.[19] In this respect, it is vital that compulsory secondary education – especially at the higher, far more specialised, levels – be adapted swiftly and flexibly to the changes that will occur in the economy, In this respect, to absorb the rise in demand for vocational training, the Spanish Recovery, Transformation and Resilience Plan (RTRP) aims to provide 200,000 more vocational training places in the coming years, entailing an investment of around €254 million. Furthermore, the Organic Vocational Training Bill fosters the accreditation of skills — not only for students, but also for adults — and promotes tools to increase collaboration between training centres, universities and firms. Looking forward, it would be desirable to improve the granular information on access conditions and on the professional opportunities offered by different vocational training courses. This would enable students to take better informed decisions and the authorities to identify possible entry problems.

Harnessing the opportunities of digitalisation calls for increasing the population's digital skills, especially in the case of the older generation, those with lower education attainment levels and those on lower incomes. According to Eurostat data, the digital skills of these cohorts are appreciably lower than those of the rest of the population (see Chart 2.4.2).[20] As highlighted by the EFF data, the use of online banking among these cohorts is also very low (see Charts 2.4.3 and 2.4.4).[21] At a time of ongoing advances in the digitalisation of financial services, this evidence would point to the possibility of these population groups being at greater risk of financial exclusion.

A comprehensive skill recycling strategy throughout the life cycle is key in a setting in which society finds itself faced with marked population ageing and, at the same time, the need to extend people's working life. There is evidence that, as people grow older, they gradually lose some of the skills that are needed in the labour market (see Chart 2.5.1 for the case of Spain).[22] Given that the retirement age has been raised in Spain and other European countries in recent years to ease the pressure of population ageing on public pension system expenditure, ensuring that these workers can extend their working life makes it essential to press forward with training policies that curb this skills erosion (see Section 3.1.1). Set against this need, however, the percentage of economically active persons studying non-formal training courses in Spain falls very markedly – and more sharply than in other euro

19 See Spain 2050 Strategy (only available in Spanish).

20 The digital skills of women over the age of 55 are particularly low compared to those of men. For instance, 36% of women aged 55-74 have basic or above basic digital skills, far below the 46% of men with such skills. Conversely, in all other age groups, women have the same or higher digital skills than men.

21 See Crespo et al. (2022), forthcoming.

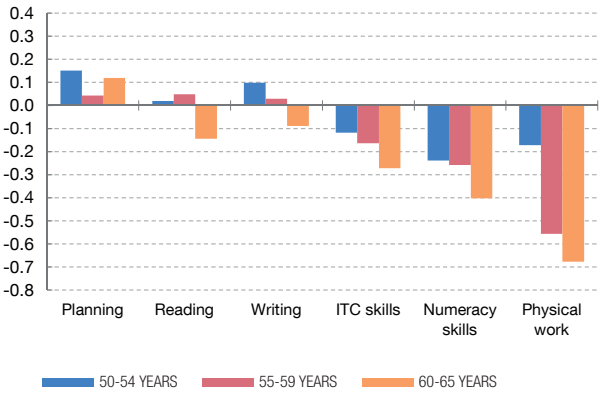
22 See Anghel and Lacuesta (2020).

Chart 2.5

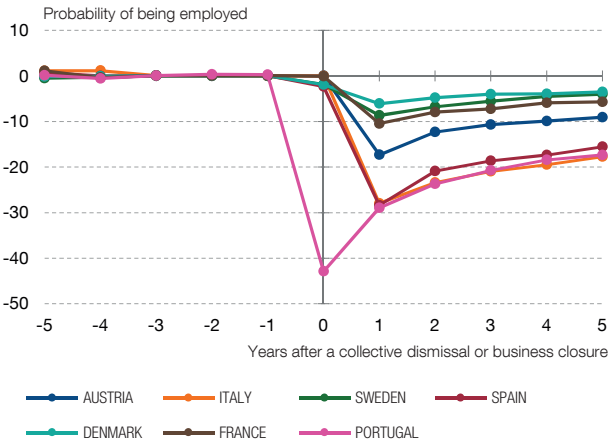
JOB DISPLACEMENT AND POPULATION AGEING GENERATE LOSSES OF HUMAN CAPITAL IN THE POPULATION

As people grow older, they lose certain skills. This erosion is significant, given the swift technological transformation being observed in many sectors of activity and the need to press forward with measures that can extend people's working life. Further, workers whose job is displaced in a collective dismissal in Spain have a 16 pp lower probability of being employed five years later; this is a greater erosion than that observed in other European countries, in part attributable to lower spending on active policies in Spain.

1 CHANGE IN THE SKILL INDICATOR COMPARED WITH 30-34 AGE GROUP (a)



2 EFFECT OF JOB DISPLACEMENT ON THE CHANGE IN THE PROBABILITY OF BEING EMPLOYED IN SEVERAL EU COUNTRIES (b)



SOURCES: OECD (PIAAC) (2013), AMDB administrative social security data in Austria (1984-2019), IDA database in Denmark (1980-2018), DADS database in France (1991-2018), INPS social security records in Italy (1998-2005), QP database in Portugal (1987-2018), Continuous Sample of Working Histories in Spain (2005-2019), RAMS tax authorities database in Sweden and LOUISE database in Sweden (1994-2016).

a The bars denote the estimated coefficients for indicators for each age group (50-54, 55-59 and 60-65) in a regression that includes sex, education level and dummy variables for the sector of activity, for occupation and for each age group. The dependent variable is the skill use at work indicator.

b Change in the probability of being employed relative to the average probability of being employed in the five years prior to the collective dismissal.

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area countries – after the age of 45. Nonetheless, if any potential strategy to increase the training of older workers is to be successful, it should be accompanied by occupational mobility arrangements and by other contractual changes at firm level that enable the experience-based and educational skills acquired by workers to be harnessed appropriately.

Active labour market policies are also vital for limiting the loss of human capital stemming from job losses. One recent paper[23] shows that job displacements in a collective dismissal lead to a sharp reduction (of 16 pp) in Spanish workers' employability five years later (see Chart 2.5.2). This erosion of employability is greater than that experienced, for example, by workers in Austria, Denmark, France and Sweden, a circumstance not attributable to cross-country differences in the composition of workers or jobs. The paper also finds that the variable that most increases employability in these situations is spending on active policies.

23 See Bertheau et al. (2022).

It is important to design an active labour market policy system that is efficient and effective. The Spanish Government has undertaken to enact an employment law before end-2022 to make the State employment system more effective. Among other aspects, the law aims to improve the internal management of the data underpinning unemployment benefits and active policies – for the purpose of their assessment –, digitalise information for the public and combat fraud. International experience shows that statistical profiling techniques can help to identify the most vulnerable unemployed people and thus reduce the resources used in actions geared towards those who would have found work without the need for any type of government benefit.[24] In this respect, there is mounting research that uses randomised control trials to assess the effectiveness of different active policies in various contexts and across groups.[25] Thus, it would be desirable to boost collaboration between the research community and government to attempt to understand, by drawing on these techniques, the best design of employment subsidy programmes and of the guidance and training provided to the unemployed.[26]

2.3 The challenge of addressing inequality

Levels of inequality in the Spanish economy were already high before the outbreak of the pandemic. Taking as reference the ratio between the 90th and 10th percentiles (P90/P10) of the distribution of household net income per capita,[27] Chart 2.6.1 shows that, while inequality in Spain declined significantly over the economy's most recent expansionary phase, in 2019 it remained well above 2007 levels.

Despite the key mitigating role played by public policy, these levels of inequality are likely to have increased as a result of the health crisis. Although official statistics enabling post-2019 inequality indicators to be constructed for the Spanish population as a whole are not yet available,[28] various alternative sources of information suggest that the pandemic is likely to have led to a resurgence in inequality. For instance, drawing on anonymised data on over three million bank account holders for the period running from February 2020 to July 2021, Aspachs et al. (2022) find that the initial months of the pandemic saw a sharp rise in inequality that was never fully reversed, as the health crisis continued to hit some of the more vulnerable

24 See Felgueroso, García-Pérez and Jiménez-Martín (2018).

25 See, for example, Card, Kluve and Weber (2018).

26 For example, Levy-Yeyati, Montané and Sartorio (2019) find that training programmes yield better results, on average, if they are vocational and include monetary incentives.

27 An economy's inequality can be estimated using a variety of methods, which need not necessarily yield similar results. For example, in certain cases, an estimate of the dispersion of workers' hourly earnings may be the most relevant measure of inequality. Elsewhere, however, it may prove more worthwhile to consider measures of inequality relating to total (individual or household) income, wealth or consumption, among other alternatives. For further details on these measures of inequality in the Spanish economy, see Anghel et al. (2018).

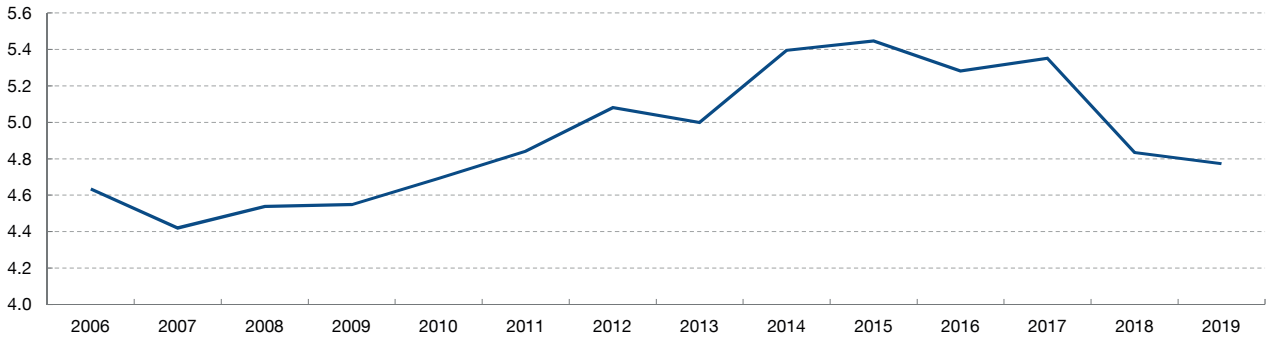
28 In the coming months, micro data from the EFF 2020 and the ECV 2021 will allow for an in-depth analysis of changes in inequality for a representative sample of Spanish households.

Chart 2.6

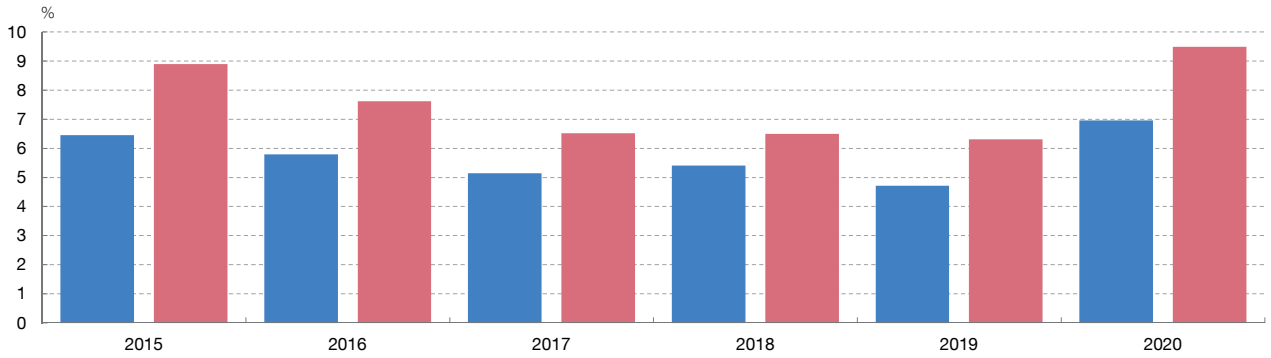
INEQUALITY INDICATORS

Although inequality in terms of household net income per capita in Spain declined significantly over the Spanish economy's most recent expansionary phase, in 2019 it remained well above the figures posted in 2007. Moreover, 7% of the population were in a situation of severe material deprivation in 2020, compared with 4.7% in 2019. Among young people, this figure rose from 6.3% to 9.5%. The data on the average monthly wage distribution of workers whose main employment is salaried work show that the P90/P10 ratio, which stood at 4.3 in 2019, increased to 4.5 in 2020 for the total sample and to 4.6 for young people.

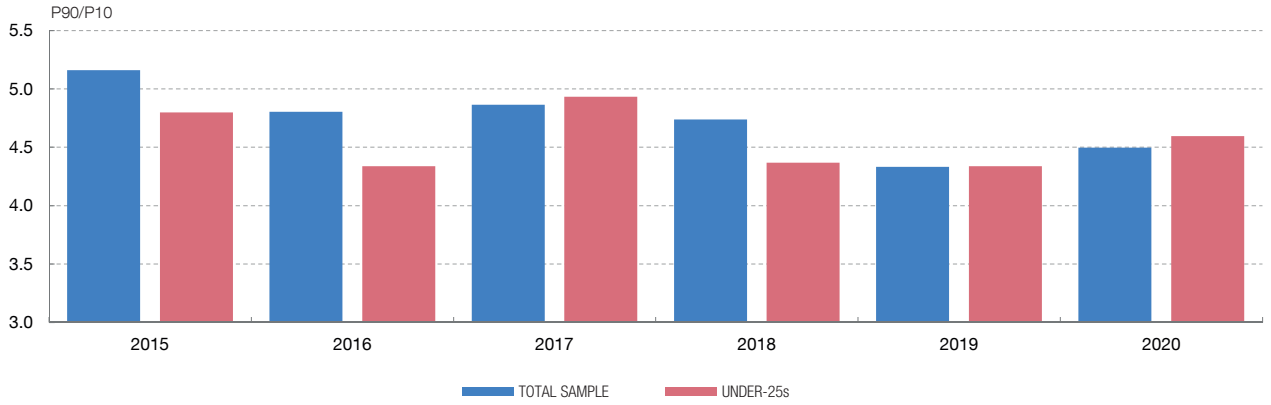
1 CHANGES IN THE P90/P10 RATIO OF HOUSEHOLD NET INCOME PER CAPITA (a)



2 PERCENTAGE OF THE POPULATION IN A SITUATION OF SEVERE MATERIAL DEPRIVATION



3 MONTHLY WAGE INEQUALITY



SOURCES: INE (ECV and EPA).

a Household net income per capita is household net income adjusted using the OECD equivalence scale.

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groups particularly hard (for example, lower-paid workers, the young, immigrants and women). In the same vein, the Spanish Living Conditions Survey (ECV, by the Spanish abbreviation) shows a striking increase in the percentage of the population in a situation of severe material deprivation in 2020 (see Chart 2.6.2), while the Spanish Labour Force Survey (EPA, by the Spanish abbreviation) reveals that 2020 saw a rise in the P90/P10 ratio of the average monthly wage distribution of workers whose main employment is salaried work (see Chart 2.6.3).

To mitigate the adverse (economic and social) effects of high levels of inequality, public policy measures must be rolled out and continuously assessed across a wide range of areas. Examples here include labour market regulation (see Section 2.1) and education policy (see Section 2.2), and also income and housing policies.

Improving the educational attainment levels of the most disadvantaged groups is a highly effective means of boosting their income, levelling up job opportunities ex ante and enhancing the prospects of future generations. The returns to individuals (in terms of employment and income) have been extensively addressed in the literature, which finds that such returns are comparatively high with respect to those on other alternative investments.[29] It has also been shown that the educational attainment of parents has a decisive role to play in the transfer of knowledge to their offspring. Thus, improving human capital in one generation can yield benefits not only in the short term, but also in the long run.[30]

As far as incomes policies are concerned, further adjustments must be made to the conditions governing eligibility for Spain's minimum income scheme (MIS) to ensure that this instrument can effectively fulfil its mission: to eradicate extreme poverty. Almost two years down the line, 362,000 benefits have been granted to some 824,000 beneficiaries, still far short of the potential target (some 2.3 million beneficiaries from around 850,000 households). Since the scheme was first created, some of its eligibility requirements, such as the time since a cohabitation unit was initially established, the independent living requirement for the under-30s and the income limits, have been relaxed with a view to reaching more households. Looking ahead, the conclusions drawn from any periodic assessments of this instrument, as required under the law creating the MIS, such as the one the Independent Authority for Fiscal Responsibility (AIReF) is to publish in 2022 Q2, should be used to fine-tune such requirements.

Above and beyond the financial support provided by the MIS, the social and labour market inclusion of the most vulnerable calls for a set of policies aimed at ensuring this group is fully served. The sheer range of circumstances behind the socio-economic situations of such persons further underscores the value of an

29 See, for example, Harmon, Oosterbeek and Walker (2003).

30 See Björklung and Salvanes (2011).

ongoing assessment of the various public policy measures that target this group, so as to ensure their efficacy.[31] With this approach in mind, the social security authorities have recently signed agreements with several renowned independent research institutions to evaluate social inclusion itineraries linked to the MIS.[32]

Steps should also be taken to reduce the adverse effects of inequality in the area of housing affordability, which has tightened in recent years, for both home ownership and rentals. Steep rents (when compared with employment income) increase the proportion of the population at risk of social exclusion and of households whose ability to spend on other goods and services is constrained.[33] According to Eurostat data, 48.7% of Spaniards living in market-price rented accommodation in 2020 were at risk of poverty or social exclusion, the highest rate in the European Union (where the average stands at 32.3%), while 35.9% devoted more than 40% of their disposable income to housing, versus the EU average of 25.8% (see Chart 2.7).

The Draft Law on the right to housing seeks to ease such difficulties in accessing housing, which hit the young and lower-income households particularly hard. The key measures under this legislation notably include those applicable in areas that regional governments (which have competence over housing matters) consider to be under pressure; in particular, rent controls and three-year lease renewals where the tenant so desires. In addition, the tax credit for rental income is modified under personal income tax (and reduced under corporate income tax), a potential property tax surcharge on vacant dwellings is envisaged, 30% of land in new developments is set aside for government-subsidised housing (with half of such land earmarked for properties with capped rent), the privatisation of public buildings for rental purposes is banned and the time frames for eviction of vulnerable households from their primary residence are extended.

Some of the measures envisaged in the draft Law, such as rent control,[34] may not have the desired effect. Recent findings show that, in general, while rent control policies may be effective in curbing rents in regulated segments in the short term, they can at the same time have the opposite effect in unregulated market segments.[35] Other potentially significant adverse effects may also emerge in the medium term, such as a contraction in supply or a failure to ensure properties are maintained, particularly where such measures remain in place for long periods

31 See Duflo, Glennerster and Kremer (2007).

32 See "The Ministry of Inclusion and CEMFI sign an agreement for the evaluation of social inclusion projects in Spain", Banco de España press release, 18 January 2022 (only available in Spanish).

33 See Directorate General Economics, Statistics and Research (2020).

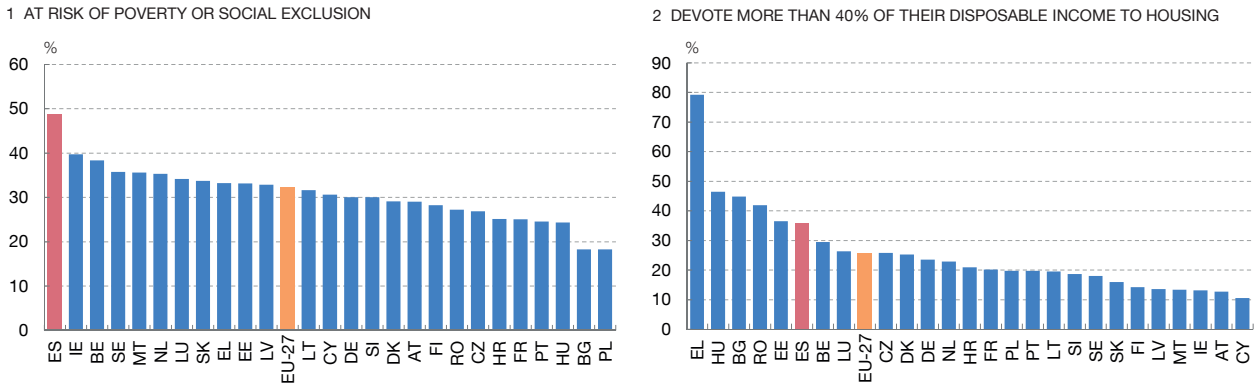
34 In areas under housing pressure, large corporate landlords are limited to the maximum rent set under the preceding lease agreement or by the benchmark price index, while small and other large landlords are subject to rent freezes, though they may raise their rents by up to 10% if they sign a 10-year lease or perform certain refurbishment works.

35 See López-Rodríguez and Matea (2020).

Chart 2.7

POPULATION IN RENTED HOUSING IN SPAIN IN COMPARISON WITH THE EUROPEAN UNION (2020)

Almost half of Spaniards living in market-price rented accommodation are at risk of poverty or social exclusion, the highest rate in the European Union, while just over one-third devote more than 40% of their disposable income to housing, also above the EU average.



SOURCE: Eurostat.

a AT: Austria, BE: Belgium, BG: Bulgaria, CY: Cyprus, CZ: Czech Republic, DE: Germany, DK: Denmark, EE: Estonia, EL: Greece, ES: Spain, FI: Finland, FR: France, HR: Croatia, HU: Hungary, IE: Ireland, LT: Lithuania, LU: Luxembourg, LV: Latvia, MT: Malta, NL: the Netherlands, PL: Poland, PT: Portugal, RO: Romania, SE: Sweden, SI: Slovenia, SK: Slovakia, EU-27: European Union. Figures not available for Italy.

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of time. Either way, it is essential to ensure that statistics that correctly identify the areas under housing pressure are available if these types of measures are to be effectively applied.

The effectiveness of other measures included in the draft Law, such as the subsidies for young people and the changes to tax relief, is also in doubt. As far as subsidies for the young are concerned,[36] the empirical evidence suggests that, in a market with relatively inelastic supply, there is a risk that income may be transferred from the public sector to landlords, with price hikes also suffered by tenants who receive no subsidy.[37] Furthermore, while landlords renting to the under-35s have seen additional tax benefits (provided the rent falls below a certain threshold), the general tax credit has also been cut from 60% to 50%.

The draft Law overlooks certain measures that could give a significant structural boost to the supply of rented accommodation. In particular, it does not envisage any measures that might offer greater effective legal certainty to landlords. Nor does it alter certain regulations that prevent, hinder or delay new housebuilding or restrict the use of properties for residential purposes. These could

36 Since 1 January 2022, persons aged 18-35 living in rented accommodation with a maximum monthly rent of €600 and whose annual earned income is less than three times the Multipurpose Public Indicator of Income (IPREM, by the Spanish abbreviation) are eligible for a young persons' rental subsidy of €250 a month over two years. The thresholds in terms of rent and earned income may be higher (up to €900 a month and up to four times the IPREM, respectively) where the rented accommodation on offer so justifies. See Royal Decree 42/2022 for further details (only available in Spanish).

37 See López-Rodríguez and Matea (2020).

be modified to ease the pressures on property prices in local markets that experience occasional housing shortages.

2.4 The challenge of increasing firm size, facilitating cross-sector reallocation and fostering innovation

Spanish firms are very small by international standards, a state of affairs that cannot be explained by the sectoral structure of the country's economy. According to Eurostat business demography data, in 2019 (the latest available year) Spain was the EU country with the highest percentage of firms with fewer than five employees (see Chart 2.8.1). The small size of Spanish firms – a persistent hallmark of the country's productive system over the past decades – cannot be put down to the specific sectoral make-up of the Spanish economy, since the same phenomenon is apparent when firm size is compared internationally within specific industries, such as services (see Chart 2.8.2), manufacturing or construction.

The small size of Spain's businesses is one reason behind the country's low aggregate productivity. This is not only because productivity tends to increase with firm size, but also because it is precisely the smaller Spanish firms that have a wider negative productivity gap with their European counterparts, even allowing for the different sectoral composition of these economies. Moreover, given that smaller businesses find it harder or are less likely to invest in innovation, the small size of Spanish firms would also partly explain why innovative activities are less prevalent in Spain than elsewhere in Europe, which in turn results in more lacklustre productivity. Indeed, it has consistently been observed that the drive for innovation in Spain is weaker than in the EU-27 overall. For instance, between 2015 and 2020, average business investment in R&D&I in Spain stood at 0.7% of GDP, as compared with 1.4% in the European Union. This gap is largely due to the lower proportion of innovative enterprises in the Spanish economy (31% in Spain versus 50% in the EU).[38] Meanwhile, the considerable relative weight of smaller firms in the productive system also leaves the overall economy more vulnerable to adverse macro-financial shocks or structural transformation processes, since such firms are generally less able to adapt and find it harder to access external financing.[39]

For instance, small Spanish firms are not generally benefiting from the changes in marketing processes brought about by digitalisation. Indeed, data from the Banco de España's 2021 Survey of Small Enterprises' Financial

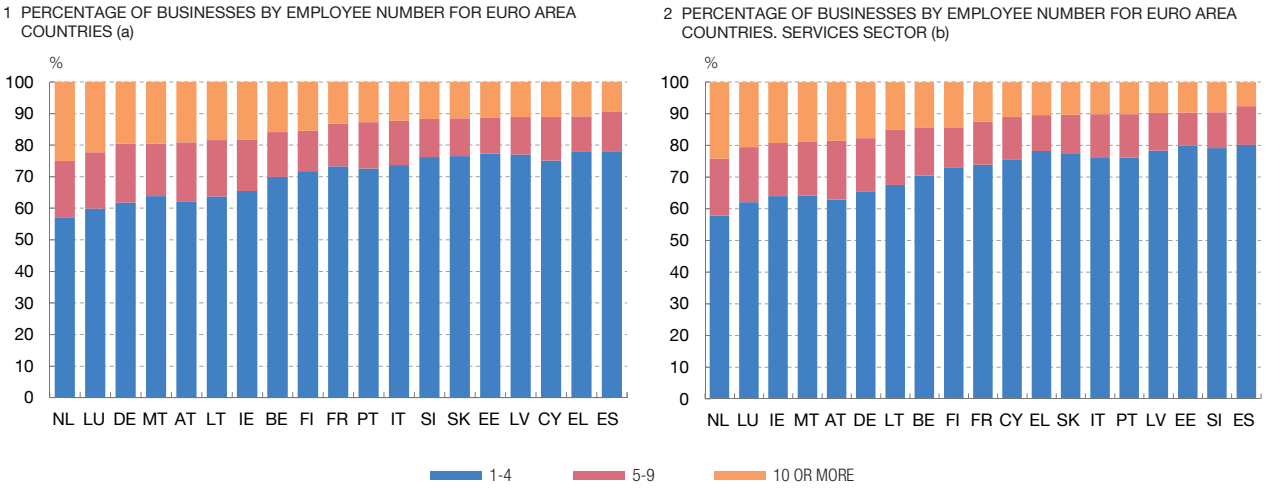
38 See Community Innovation Survey, Eurostat.

39 The latest negative shocks suffered by the Spanish economy have clearly demonstrated this greater vulnerability associated with smaller firm size. See, for example, Blanco et al. (2020). Moreover, Chapter 4 of this report notes that Spain's smaller firms also appear ill prepared, in relative terms, for the sizeable climate-related challenges that will have to be faced in the coming years.

Chart 2.8

SPANISH BUSINESS DEMOGRAPHICS ARE NOTABLE FOR THE HIGH RELATIVE WEIGHT OF SMALL FIRMS, REGARDLESS OF SECTOR

According to Eurostat business demography data, in 2019 Spain still had the highest percentage of firms with fewer than five employees, regardless of the sector analysed. This poses a challenge for productivity growth and the resilience of Spain's business sector.



SOURCE: Eurostat (Structural Business Statistics).
NOTE: AT: Austria, BE: Belgium, CY: Cyprus, DE: Germany, EE: Estonia, EL: Greece, ES: Spain, FI: Finland, FR: France, IE: Ireland, LT: Lithuania, LU: Luxembourg, LV: Latvia, MT: Malta, NL: Netherlands, PT: Portugal, SE: Sweden, SI: Slovenia, SK: Slovakia.

a Latest data available (2019). The figures for Ireland are from 2018 and those for Belgium are from 2017.
b Latest data available (2019). The figures for Ireland are from 2018.

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Literacy indicate that only 51% of businesses with fewer than ten workers have a bespoke website on which to showcase their products or services (see Chart 2.9.1). Moreover, less than 30% of small firms report significant sales of their products or services on their websites, a percentage that falls yet further in the case of online sales via digital platforms (see Chart 2.9.2). In a setting in which online shopping by households is clearly on the rise,[40] this points to some of the negative implications of small firm size for the resilience and dynamism of business activity in Spain.

It is essential to explore the various reasons why the Spanish business sector is so skewed towards small, low-productivity firms and to mitigate the effects.[41] As discussed below, such reasons have to do with a very broad range of aspects, including most notably the volume and quality of regulations, and the mechanisms that influence the creation, growth and winding-up of businesses. Furthermore, as part of a strategy to stimulate business growth, smaller firms should be helped to access a wider range of external sources of funding on more advantageous conditions, while the policies in support of

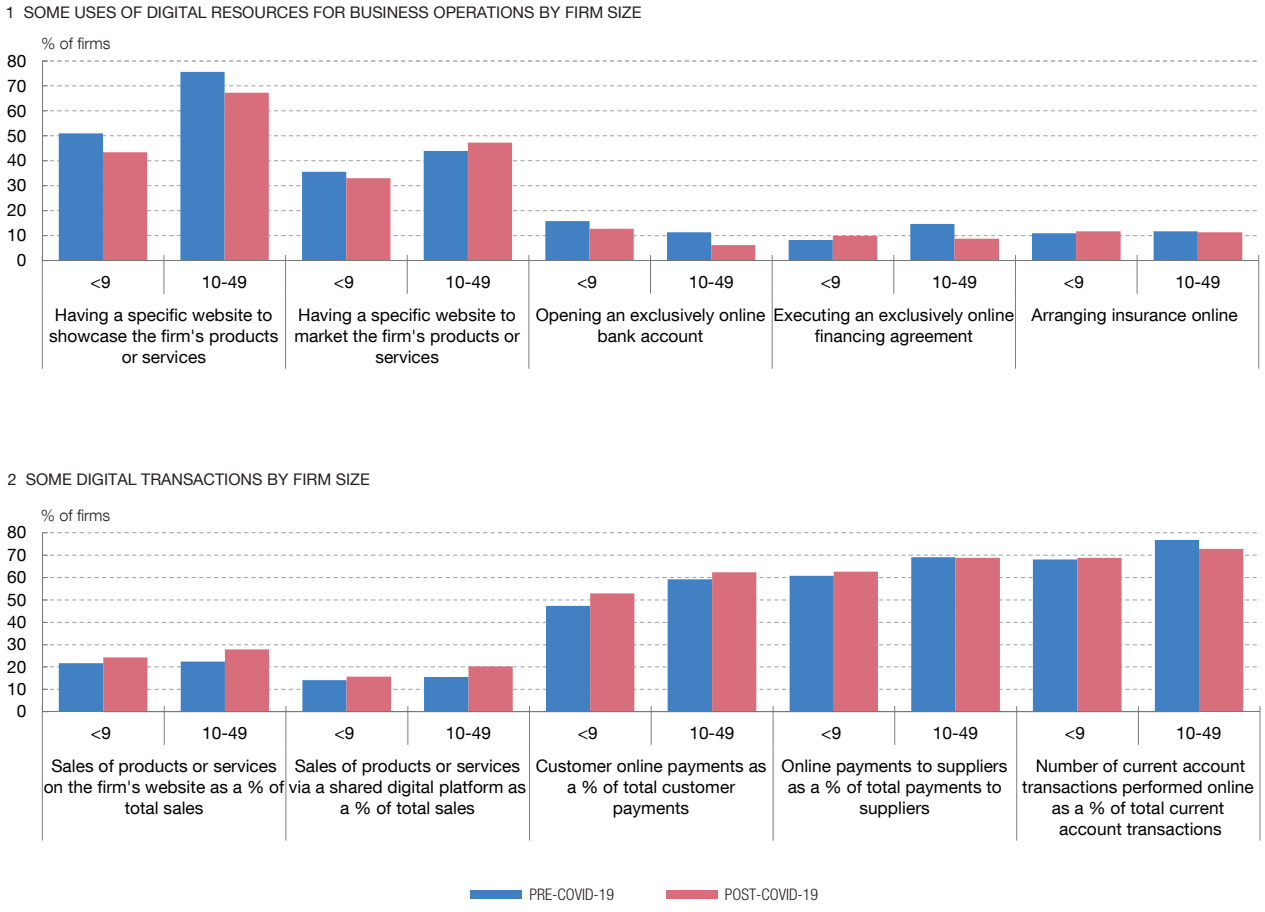
40 According to the National Statistics Institute (INE) survey on household equipment and the use of information and communication technologies, 55.2% of the Spanish population aged 16-74 made an online purchase in 2021, up 8.3 pp on 2019.

41 See Banco de España (2016) for a detailed analysis of the different factors that affect business demographics.

Chart 2.9

SMALL SPANISH BUSINESSES MAKE LITTLE USE OF DIGITAL RESOURCES TO MAKE SALES

Digitalisation is an important resource for small Spanish firms, above all with a view to showcasing their products. In general, while small firms use digital resources to receive and make payments, only a very small fraction make a significant part of their sales online.



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SOURCE: Banco de España (Encuesta de Competencias Financieras en las pequeñas empresas 2021).

business innovation should be strengthened. To this end, the synergies between the different public and private institutions that pursue innovation would have to be enhanced, and the tax incentives and direct subsidies for R&D&I projects in Spain reviewed and rigorously designed.[42, 43] In fact, there is a degree of crossover between these two aims, particularly in terms of helping small businesses to access venture capital firms, which tend to specialise in funding newly created businesses and innovative activities.

42 The RTRP makes support for investment in R&D&I a major priority, devoting 18% of the total potential NGEU funds to be received by Spain to such activities.

43 In its assessment of the R&D&I tax incentives in Spain, AIReF (2020b) (only available in Spanish) points to the difficulties experienced by smaller innovative firms in securing support in the form of public funding, owing to both the administrative requirements for accessing such funds and the regulations restricting the use or monetisation of tax credits for corporate income tax purposes.

Many of the initiatives that could be rolled out to foster business growth would also facilitate the processes to reallocate activity across sectors and firms that the Spanish economy will in all likelihood have to face in the coming years. It is worth noting here that a recent Banco de España research paper[44] finds considerable disparity in terms of the position of Spain's different economic sectors in an increasingly digital environment, in which other far-reaching structural changes are also taking place, such as those brought about by the green transition and an ageing population. The paper notes that professional, scientific and technical activities, information and communication services, financial and insurance activities and the manufacture of machinery, computer, electronic and optical products and pharmaceutical products are the Spanish economic sectors best placed to meet the challenges that will be posed by the digital, green and demographic transition in the coming years. Conversely, accommodation and food service activities, the primary sector and transport services are in a more vulnerable position when it comes to facing such challenges. These widely differing positions of Spain's firms and industries in the face of the structural changes that will shape the course of the economy in the most immediate future suggest that a far-reaching process of reallocating activity across sectors and firms will be required if the opportunities deriving from such challenges are to be harnessed. Indeed, the paper notes that the Spanish sectors best placed to address the challenges the digital, green and demographic transition will entail actually account for a small share of the country's economy, whether compared with other domestic sectors that are less well prepared or with the equivalent industries in Spain's neighbouring economies (see Chart 2.10).

One aspect requiring action is the regulation of economic activity, an area that has increased in complexity in recent decades, with a potentially adverse impact on business dynamics and aggregate productivity. These developments in Spanish regulation (i.e. in the set of rules and regulations approved by the different tiers of government) have their origin in both the increasing volume of regulations approved and the fact that such regulations are increasingly poorly drafted and ever more complex in the way they overlap. Specifically, the Spanish authorities published more than 12,700 new regulations in 2021, a four-fold increase on the volume seen in the early years of Spain's democracy. Recent empirical evidence indicates that this increase in the volume and complexity of regulations could have a negative impact both on business dynamics and on the productivity of the Spanish economy.[45] For instance, it has been estimated that a 1% improvement in the drafting of legislation could boost productivity per hour worked by 0.07%.

The Draft Law on business start-ups and growth and the Draft Law on developing the ecosystem of emerging businesses represent a step forward in boosting business start-ups and fostering their expansion by improving

44 See Fernández-Cerezo and Montero (2021).

45 See, for example, Mora-Sanguinetti and Soler (2022) (only available in Spanish), Mora-Sanguinetti and Pérez-Valls (2021) and De Lucio and Mora-Sanguinetti (2022).

Chart 2.10

POSITIONING OF SPANISH SECTORS VIS-À-VIS THE MAIN ECONOMIC CHALLENGES (a)

Services relating to professional, scientific and technical activities (69-75), information and communication (58-63) and financial and insurance activities (64-65), as well as the manufacture of machinery (28), of computer, electronic and optical products (26) and of pharmaceutical products (22), are well positioned both in terms of productivity and resilience, but these are sectors, in general, with little weight in the Spanish economy (orange bubbles). By contrast, accommodation and food service activities (55-56), the primary sector (1-3) and transport services (49-53) have the most vulnerabilities in the dimensions analysed (red bubbles).

SOURCE: Banco de España.

a The size of the bubbles indicates the degree of centrality.
b Internal centrality reflects the importance of each sector as a customer and supplier in the production chain, as well as its relative weight in the overall economy in terms of employment, number of companies and exports, inter alia.
c External centrality measures the share of a sector's exports in a country's total exports and the difference between the share of output exported and the share of materials imported to manufacture one unit of output in each sector.
d Resilience groups a number of sectoral indicators for withstanding technological and digital transformation, the energy transition and population ageing (see Fernández-Cerezo and Montero (2021)).

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regulations, removing barriers to economic activity, combating business defaults and providing financial support for business growth. Among other measures, these draft Laws cut business start-up and procedural costs[46] and

46 For instance, the minimum share capital for setting up a private limited company is reduced from €3,000 to €1, and electronic start-up procedures are encouraged, thereby expediting procedures and cutting notary and registry costs.

strengthen the bodies that seek to ensure market unity in regulatory terms. Looking ahead, other issues should also be addressed, such as a review of the employment and tax-related regulatory thresholds (linked to arbitrary categories of firm size), which deter business growth,[47] and the need to reduce late payment by the public authorities, which makes it harder to finance businesses, particularly in the case of small firms.

Meanwhile, the reform of the Insolvency Law brings in significant changes to insolvency and pre-insolvency procedures.[48] Notable new developments include the introduction of business debt restructuring at an early stage, in the form of a new pre-insolvency mechanism known as the "restructuring plan". Improvements have also been made to the fresh-start mechanism (for both consumers and business owners), introducing the possibility of debt waiver without first liquidating a debtors' assets and based on a payment plan, extending the waiver of unpaid claims to include debts to the public authorities (albeit still in a relatively small amount). Lastly, a bespoke procedure for microfirms[49] is set in place, characterised by maximum procedural simplicity and the use of new technologies, to make it less costly and swifter than standard insolvency proceedings. Under this procedure, the insolvency judge only intervenes to adopt the most important decisions or where the parties refer a dispute to the court.

While this insolvency reform may help partially remedy the shortcomings of the current insolvency mechanisms, the extent to which some of the new procedures will be effective is unclear.[50] In principle, early business restructuring ought to help reduce the high winding-up rates among insolvent firms in Spain. Moreover, the changes introduced could help shorten insolvency proceedings, thereby freeing up the courts, and cut the cost of such proceedings, particularly in the case of microfirms. In general terms, this reform could also have a positive impact on entrepreneurship, by offering coverage to business owners in the event of supervening insolvency. However, there is some uncertainty over the efficacy of the special procedure for microfirms. In particular, by doing away with the insolvency administrator in the majority of such proceedings, leaving matters in the hands of the debtor, the risk of opportunistic conduct and issues of moral hazard could arise due to the lack of oversight from an independent professional. In this regard, the extent and degree to which these potential effects of the new legislation materialise will have to be assessed in the coming months.

47 See Almunia and López-Rodríguez (2018).

48 This draft legislation includes the transposition of the European Directive on restructuring and insolvency and introduces other reforms in the field of insolvency and pre-insolvency. See García-Posada (2020) for a description and evaluation of the previous Insolvency Law.

49 Microfirms are firms with fewer than ten workers and annual turnover of less than €2 million.

50 According to García-Posada and Vegas (2018), the average duration of insolvency proceedings in Spain is around 40 months, far in excess of those in neighbouring countries such as France (12 months) and the United Kingdom (14 months).

2.5 The challenge of fully capitalising on the roll-out of the Next Generation EU programme

The rigorous selection of the investment projects to be funded under the NGEU programme is one of the factors that may most influence its success in Spain. NGEU projects should be chosen in light of best international practice and the available analytical evidence. For instance, such evidence suggests that the most successful public investment policies are generally those that supplement private investment (in the form of employee training or capital modernisation), while the impact on aggregate productivity of policies targeting regional or sector-specific development appears to be unclear.[51] Moreover, the literature suggests that initiatives geared towards increasing the stock of public capital are associated with a larger multiplier effect, particularly in the medium and long term, than those that seek to boost other expenditure items such as government consumption.[52]

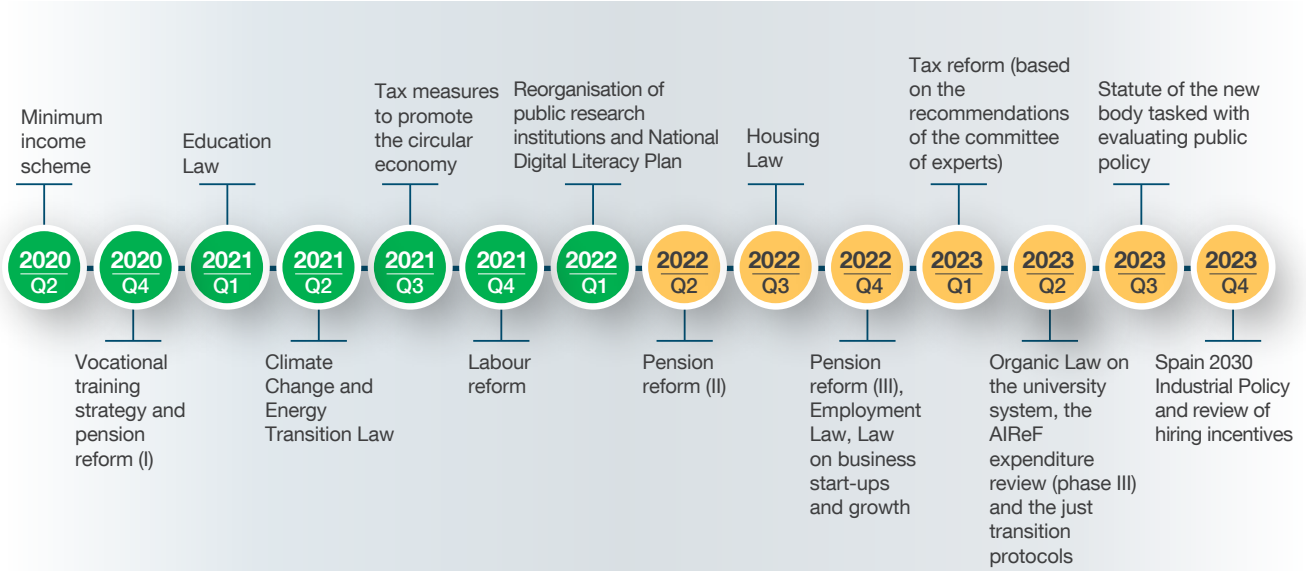
Some possible improvements to the design of public tenders in a bid to fully harness the transformational impact of the NGEU programme are proposed in Banco de España (2021b). In particular, as part of the criteria for assessing the merits of bids, preference could be given, among solvent, equally productive projects, to those of businesses that find it hardest to access external finance, since some recent studies suggest that this would generate a larger multiplier effect.[53] In this respect, public procurement could represent a powerful economic policy tool for helping small firms to overcome existing financial friction. In fact, this is standard practice in the United States, where the Small Business Act seeks to ensure that a certain percentage of federal contracts are awarded to small companies.[54]

There is a very high degree of complementarity between the financing of investment projects, such as those envisaged in the NGEU programme, and the implementation of structural reforms. Recent research conducted by the Banco de España notes that the transformational potential of the NGEU programme would be fully harnessed if it were accompanied by a range of structural measures to facilitate the reallocation of resources across firms and sectors[55] and if steps were taken to enhance the synergies between public and private investment.[56] In this regard, the Spanish RTRP (linked to the implementation of the NGEU programme) envisages a total of 102 possible reforms (see Figure 2.2), which should be carefully designed and swiftly rolled out in the coming months.

A recent paper by the Banco de España illustrates how the impact of different combinations of reforms and investment projects associated with

51 See Howell (2017) and Woodward, Figueiredo and Guimarães (2006).
52 See Deleidi (2022).
53 See Di Giovanni et al. (2022).
54 See Congressional Research Service (2022).
55 See Albrizio and Geli (2021).
56 See Alloza, Leiva-León and Urtasun (2022), forthcoming.

Figure 2.2
MAIN ACTIONS PROPOSED IN THE SPANISH RECOVERY, TRANSFORMATION AND RESILIENCE PLAN (a)



SOURCE: Banco de España, drawing on the Recovery and Resilience Facility Operational arrangements between the European Commission and Spain.

a Reforms already completed are in green, while pending reforms are in yellow.

the NGEU programme on the Spanish economy's growth capacity in the medium term could vary considerably. Specifically, Cuadrado et al. (2022)[57] note that if projects with a high degree of complementarity between public and private investment are chosen within the framework of the NGEU programme, thereby generating positive externalities in terms of private productivity (i.e. spillover effects), the annual potential growth rate of the Spanish economy in 2030 could reach around 1.3%, some 0.2 pp above the growth rate in an alternative scenario without such spillover effects (see Chart 2.11). If this careful selection of projects is also accompanied by various structural reforms to ease the existing rigidities in the product and labour markets, thereby helping to reduce the structural unemployment rate and boost productivity, the potential growth rate of the Spanish economy could reach around 2% by the end of that decade.

3 The fiscal consolidation challenge

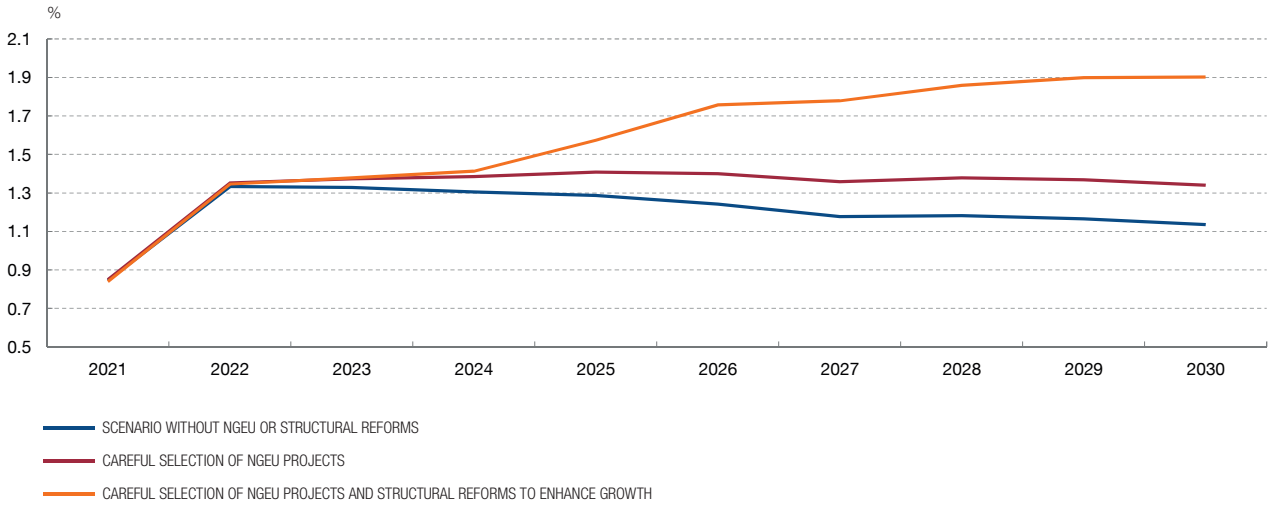
The necessary and resolute response of fiscal policy to the COVID-19 crisis gave rise to a substantial deterioration in public finances in 2020. The package of measures approved to combat the health crisis, together with the ensuing economic deterioration, drove up the general government deficit considerably, from 3.1% of GDP in 2019 to 10.3% of GDP in 2020. The structural

57 Only available in Spanish.

Chart 2.11

ESTIMATED SPANISH ECONOMIC GROWTH POTENTIAL

The post-pandemic growth potential of the Spanish economy is likely to be very similar to that estimated before the health crisis. Nonetheless, it could rise to around 2% if carefully selected investment projects financed with European funds are combined with a set of structural reforms to enhance economic growth.



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SOURCE: Banco de España.

primary deficit, which factors in the economic cycle effect, also rose, to stand at nearly 1.8% of potential output. For its part, public debt increased from 98.3% of GDP at end-2019 to 120% at end-2020.

The general government budget balance improved in 2021, albeit largely owing to the cyclical performance of activity. Accordingly, from a structural standpoint, public finances remain highly vulnerable. In effect, in 2021 the public deficit fell to 6.9% of GDP while the government debt ratio dropped slightly to 118.4% of GDP. Nevertheless, the general government's structural primary balance continued to post a deficit and, despite falling, the general government debt ratio remained very high, both on an historical and an international comparison. This – relatively persistent – public finances situation is a considerable source of vulnerability for the Spanish economy and leaves less fiscal space in the event of possible future macro-financial shocks. In the current setting, such shocks could come, for example, from a deterioration in the economic growth outlook as a result of a possible escalation of the war in Ukraine, or from the possible emergence of tension on the financial markets in a setting in which monetary policy has begun to tighten financial conditions.

In the coming years, public indebtedness will remain very close to or even exceed current levels, unless an ambitious fiscal adjustment plan is implemented. The

Banco de España's simulation exercises[58] show that if no fiscal adjustment is made in Spain in the coming years (scenario 1), the pressure exerted by population ageing on public expenditure – if the current pension system parameters are maintained (see Section 3.1.1) – will drive up the government debt-to-GDP ratio (see Chart 2.12.1). Conversely, under an alternative scenario in which a consolidation effort consistent with maintaining the structural primary balance envisaged in the Banco de España's latest macroeconomic projections for 2024 is made (scenario 2), the government debt ratio will stand at levels close to 120% of GDP in the coming decades. Should there be a greater fiscal adjustment, for example, if the structural primary balance improves by 0.5 pp of potential output each year, to reach total structural balance equilibrium (scenario 3), a path more consistent with the Stability and Growth Pact (SGP) rules, public debt could fall to 82% of GDP by 2040. Moreover, if the scenario 3 adjustment is accompanied by an ambitious package of structural reforms that enhance the Spanish economy's growth capacity (scenario 4), the government debt ratio could be around 79% of GDP by 2040.

This fiscal adjustment would have to be more intense if future interest rates rise more than expected. The simulations described above include, among other hypotheses, a future interest rate path consistent with analysts' current monetary policy consensus forecasts. Yet these forecasts are subject to considerable uncertainty, so the results need to be interpreted with caution. In particular, as Chart 2.12.2 shows, if future interest rates rise more than expected – for example, if risk-free rates go up by almost 1 pp in the long term (to 2% at the end of the horizon considered) – greater structural primary adjustment would also be needed to maintain the public debt paths described above.

Accordingly, to bolster the sustainability of Spanish public finances, a multi-annual fiscal consolidation plan will have to be rigorously implemented, once the pandemic is over and the adverse economic effects of the war in Ukraine have diminished. To cushion the negative economic impact of the war in Ukraine, fresh fiscal policy countercyclical measures could be needed in the coming months; these should be temporary and concentrated on the groups most affected by this shock. However, even if such measures are adopted in the short term, this is not incompatible with the definition and early communication of a comprehensive plan for the restructuring of public finances – in which all tiers of general government should participate – to be implemented gradually, once the ongoing recovery trajectory of the Spanish economy is firmly established. The design and announcement of such a plan, focused on ensuring the sustainability of public finances, including measures on both the revenue and the expenditure side, will also boost confidence and certainty about Spanish economic policies. There follow several considerations on public expenditure and revenue that could serve as a guide for the design of this consolidation strategy.

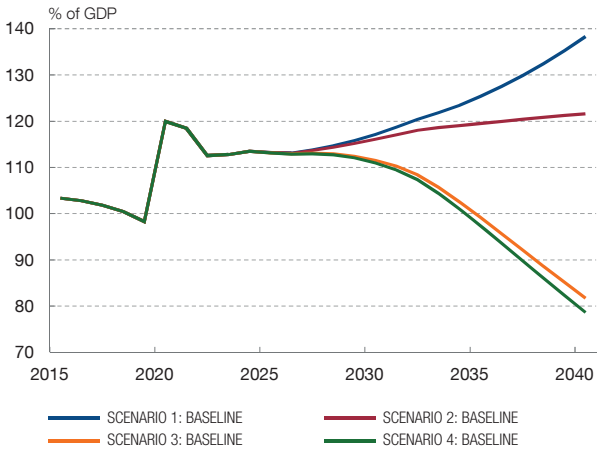
58 The Banco de España has developed a model – based on debt sustainability analysis (DSA) – that determines the future path of the government debt ratio under different fiscal policy and macro-financial development hypotheses. For more details, see Alloza et al. (2022), forthcoming.

Chart 2.12

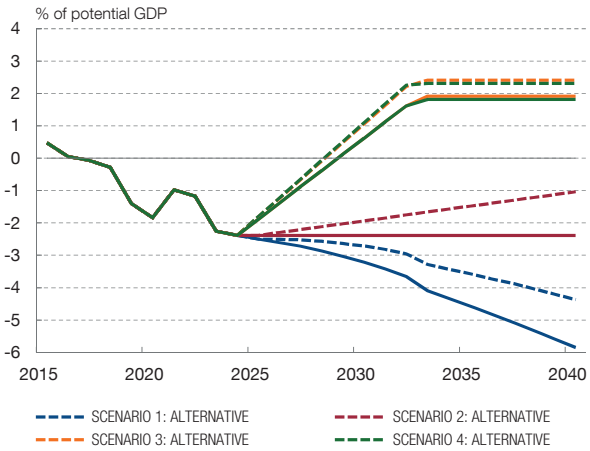
SIMULATED PUBLIC DEBT PATHS UNDER ALTERNATIVE SCENARIOS (a)

Long-term public debt stability requires a fiscal effort that at least offsets the expenses associated with demographic trends under the current pension system parameters. In addition, a deterioration in financial markets resulting, for example, from an increase in the risk-free interest rate to close to 2% in the long term, would elevate the fiscal effort needed to maintain a certain debt path.

1 SIMULATED PUBLIC DEBT PATHS UNDER VARIOUS SCENARIOS (b)



2 SIMULATED STRUCTURAL PRIMARY BALANCE PATHS UNDER VARIOUS SCENARIOS (c)



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

a Drawing on "Macroeconomic projections for the Spanish economy (2022-2024)", Box 1 of the "Quarterly report on the Spanish economy", *Economic Bulletin* 1/2022, Banco de España.

b All the scenarios include a deterioration in the structural primary balance up to 2040 owing to ageing costs (pensions, health care and long-term care). Scenario 1 assumes a fiscal policy that does not correct that deterioration. Scenario 2 envisages a fiscal policy that makes a consolidation effort consistent with maintaining the structural primary balance envisaged in the Banco de España's latest projections for 2024. Alternatively, scenario 3 assumes a fiscal policy that makes a further adjustment to the structural primary balance of 0.3 pp of potential GDP each year, until structural balance equilibrium is reached. Lastly, scenario 4 modifies scenario 3 with long-term potential GDP growth of 1.9% (instead of 1.3% as assumed in all the other scenarios).

c For each simulation, the unbroken lines denote the structural primary balance associated with the public debt paths in Chart 2.12.1, under a baseline scenario determined by a future interest rate trajectory consistent with monetary policy analysts' consensus estimates (SMA). The broken lines denote the structural primary effort needed to achieve the same public debt paths under an alternative scenario where interest rates rise by almost 1 pp in the long term (to 2% at the end of the horizon considered).

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3.1 Main aspects on the public expenditure side

General government expenditure policies must be subject to an exhaustive review, with two essential aims: to increase the efficiency of each budget item and to optimise the distribution of public expenditure between items in order to promote more robust and equitable economic growth. First, given the relatively limited fiscal space available, it is imperative to identify the budget items where expenditure efficiency can be enhanced. In this respect, it would be appropriate to explicitly include in budgetary policy some of the recommendations made in AIReF studies in recent years. In particular, these studies suggest that efficiency improvements could be obtained in some key expenditure chapters, such as active labour market policies, subsidies, tax relief, expenditure on hospitals and hiring incentives.[59] Second, it would be desirable to consider how public expenditure could

59 See AIReF (2020a).

be best distributed to drive Spanish economic growth in the medium term, without overlooking various highly important equity considerations. In this respect, in the coming years the Spanish economy should undertake large-scale investment to adapt to the green and digital transition, among other structural challenges, in a setting in which population ageing will also exert significant upward pressure on public expenditure.

Education and public investment expenditure, two budget items that are essential to drive economic growth and reduce inequality, account for a lower share of Spain's general government accounts than they do in the European Union overall.[60] On average, in the period 2015 to 2019, public expenditure on education and public investment expenditure in Spain accounted for 4% and 2.9% of GDP, respectively, 0.9 pp and 1.5 pp below the EU figures[61] (see Chart 2.13). In the academic literature there is broad consensus regarding the importance of these items to drive economic growth and mitigate inequality. First, abundant empirical evidence demonstrates the positive impact that expenditure on education and public investment has on the accumulation both of physical and human capital and, by extension, on economic growth.[62] Second, the available evidence also suggests that the explanation for the lower degree of inequality in Europe compared with the United States lies, above all, in the role played by pre-distribution policies such as public education.[63] Thus, the fact that public policies facilitate widespread access to quality education encourages a more equal distribution of income before taxes and transfers. This evidence suggests that pre-distribution policies – such as education – could be as or more effective in reducing inequality than other post-market redistribution policies, such as welfare benefits designed to prevent social exclusion (for more details in this respect, see Section 2.3 above).

3.1.1 The pension system

Given that the demographic trends expected in the coming years will exert huge pressure on pension-related public expenditure, a specific analysis of the main features and reform of the pension system is essential. [64] As a starting point for this analysis, the reform of the pension system approved in 2013 sought to address this expenditure growth by way of the pension revaluation index, which linked increases in pensions to the pension system's revenue and expenditure, via

60 The EU figures used in this section are the arithmetical mean of the current 27 EU countries plus the United Kingdom, using pre-crisis (2019) figures.

61 See Alloza et al. (2022), forthcoming.

62 See, for instance, Ramey (2020), Deleidi (2022) and Barro (2001).

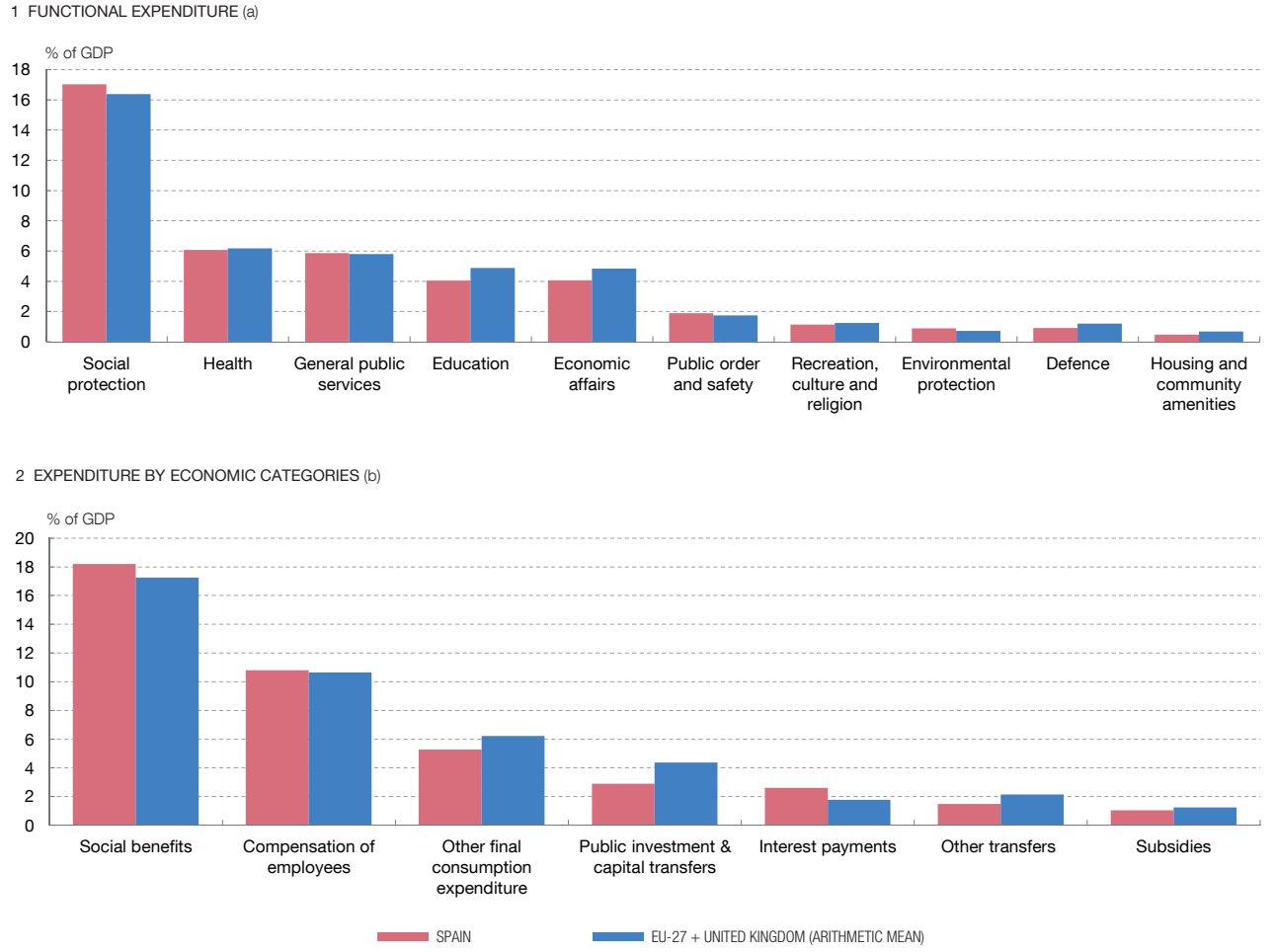
63 See Blanchet, Chancel and Gethin (2021).

64 Addressing the numerous challenges posed by demographic change requires not only adjustments to the pension system but also resolute action in many spheres. In particular, analysis of the reasons for Spain's low birth rate, more support for families and labour market opportunities for young mothers and tailoring of migratory policies in Spain to the changing needs of the labour market.

Chart 2.13

GENERAL GOVERNMENT EXPENDITURE BY FUNCTION (AVERAGE 2015-2019)

Spain spends less (as a % of GDP) than the EU-27 plus the United Kingdom on education and public investment, both of which are linked to long-term productivity growth. Conversely, Spain spends more on items related to interest payments and social protection (which includes pension costs).



SOURCE: Eurostat.

a The functional classification catalogues public expenditure by the purpose for which it is to be used.
b The classification by economic category catalogues public expenditure by the way in which it is used, according to European System of Accounts (ESA) definitions.

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the sustainability factor which reduced the initial pension as life expectancy increased. These reforms significantly eased the financial situation of the pension system, albeit at the expense of a considerable reduction in the amount of benefit received compared with the average wage.[65]

The two key elements for containing pension expenditure included in the 2013 reform were recently removed. The first part of a new pension system reform was

65 See Hernández de Cos (2021).

approved in late 2021.[66] Among other measures, this reform indexed pensions to inflation and removed the sustainability factor. According to AIReF projections and the European Commission's Ageing Report, the two measures combined mean that pension expenditure will grow by between 4.1 pp and 4.3 pp of GDP in the period 2019 to 2050. Of that increase, the return to CPI indexation accounts for 55% to 65%,[67] and the removal of the sustainability factor for 20%. The remaining 15% to 25% is explained by the fact that, even with the 2013 reform, under the demographic and macroeconomic scenarios considered pension expenditure will grow by between 0.7 pp and 1 pp of GDP between 2019 and 2050 (see Chart 2.14.1).[68]

The sustainability factor will be replaced by a new intergenerational equity mechanism. This consists of two parts. First, an increase of 0.6 pp in social contributions (0.5 pp to be paid by employers and 0.1 pp by employees), to be implemented over ten years from 2023. With this increase, the Social Security Reserve Fund could accumulate capital of around 2.5% of GDP by 2032.[69] Second, the adoption of fresh measures from 2032, depending on how pension expenditure has evolved. Unlike the sustainability factor adjustments, which were automatic, these possible additional measures will have to be negotiated and approved in due course.

At the same time, various measures were approved to bring actual retirement age closer to statutory retirement age. These measures include, in particular, an increase in the reduction coefficients, especially for persons taking early retirement whose regulatory base is above the maximum pension, although a transition period has been established that partly dilutes this increase. Also, new incentives were introduced to encourage people to retire after the statutory retirement age. According to official estimates, these new incentives could entail savings for the pension system of 1.1 pp to 1.6 pp of GDP by 2050. In any event, these measures should be reviewed ex post to assess their efficiency. Lastly, a substantial increase in transfers from the State to Social Security was also approved. This considerably enhances Social Security's budget balance, albeit with zero impact in terms of the aggregated general government budget balance (see Chart 2.14.2).

The second part of the pension system reform envisages a series of further steps to be spelt out over the course of 2022. They most notably include measures such as the development of occupational pension schemes, a review of maximum social security contribution bases and maximum pensions, a new contribution system for self-employed workers, and a review of the period considered for calculation of the regulatory base.

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66 See Law 21/2021 of 28 December 2021 guaranteeing the purchasing power of pensions and establishing other measures to strengthen the financial and social sustainability of the public pension system (Spanish version only).

67 The contribution of this factor is calculated compared with the revaluation index in place prior to the entry of Law 21/2021 which, under certain conditions, set pension increases at 0.25%.

68 See AIReF (2020c) and Ageing Report 2021. Country fiche Spain (2021).

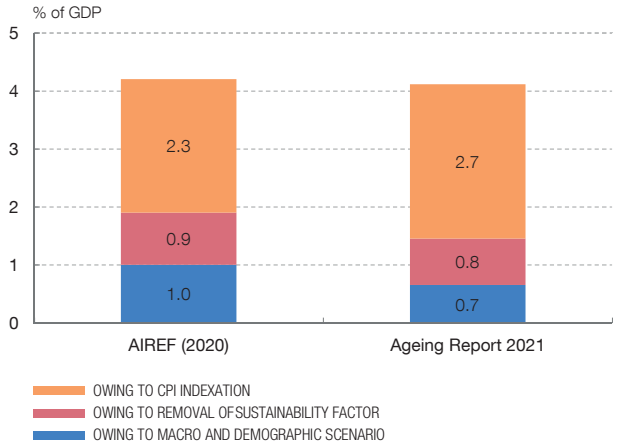
69 According to the latest Report to Parliament (Spanish version only), at 31 December 2020 the Reserve Fund amounted to €2,138 million, equivalent to 0.2% of GDP. The estimated total for 2032 includes the effect of the increase in social contributions and also capitalisation of the total as at end-2020.

Chart 2.14

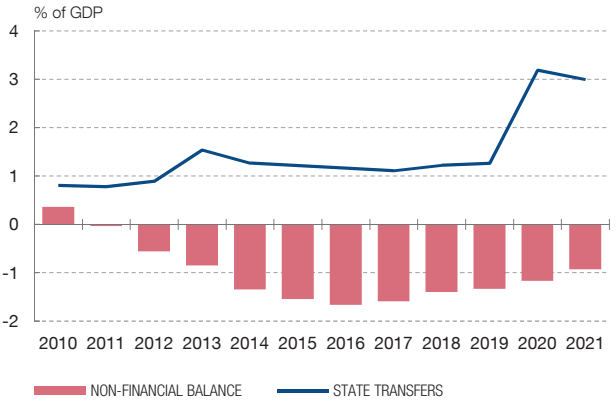
IMPACT ON THE PENSION SYSTEM OF THE REMOVAL OF THE SUSTAINABILITY FACTOR AND THE RETURN TO CPI INDEXATION

According to AIReF and the European Commission's Ageing Report, with the return to CPI indexation and the removal of the sustainability factor, pension expenditure will grow by between 4.1 pp and 4.3 pp of GDP between 2019 and 2050 (not taking into account the new intergenerational equity mechanism). The increase in State transfers to Social Security approved recently considerably enhances the latter's budget balance, albeit with zero impact in terms of the aggregated general government budget balance.

1 PROJECTED INCREASE IN PENSION EXPENDITURE, 2019-2050



2 SOCIAL SECURITY BALANCE AND STATE TRANSFERS TO SOCIAL SECURITY



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SOURCE: Banco de España.

Private saving can play an important role as a supplement to the benefits offered by the pay-as-you-go (PAYG) public pension system. In this respect, the recent legislative proposal to encourage collective pension schemes – which in general are less well developed in Spain than in other EU countries – essentially aims to increase the share of the population covered by these schemes.[70] For this purpose, the reform establishes the creation of public occupational pension funds and facilitates the creation of occupational schemes in the collective bargaining framework. Tax relief is also envisaged to encourage occupational schemes, in keeping with the pattern observed in recent years where tax incentives have been focused on occupational schemes to the detriment of individual pension schemes.[71]

A recent Banco de España publication suggests that making contributions to occupational pension schemes may be a useful channel through which to generate new retirement saving. Specifically, based on EFF 2017 data, it is estimated that the total saving could increase by 31 euro cents per euro contributed to such schemes, after subtracting the related tax credit.[72]

70 See Draft legislation regulating incentives for occupational pension schemes (Spanish version only).

71 See, for example, State Budget Law 22/2021 for 2022 (Spanish version only).

72 See Gómez and Villanueva (2022) (English version forthcoming). Also, Ayuso, Jimeno and Villanueva (2019) find that tax incentives for private pension schemes in Spain will generate an increase in saving of 19 euro cents per euro of contribution. In turn, Carrasco and Villanueva (2022), forthcoming, show that tax incentives for private pension schemes help households moderate their consumption throughout their lifetime.

In any event, total contributions to (individual, occupational and collective) pension schemes fell by more than 30% in Spain in 2021. Above all this reflects the sharp decline (of almost 40%) in contributions to individual pension schemes, mainly as a result of the decline in the related tax incentives, in a setting in which contributions to occupational schemes were virtually unchanged. In this respect, looking forward, it will be essential to assess the extent to which the new regulations are able to encourage the more widespread use of occupational schemes, to offset the lower contributions to individual schemes.

In general, on the estimates available, which include the latest measures adopted, fresh future actions will be needed on either the revenue or the expenditure side, or on both sides, to cater for the growth in pension expenditure stemming from population ageing. In this respect, in recent years the Banco de España has been pointing to the need to strengthen the link between contributions made and benefits received – while ensuring a sufficient level for the most vulnerable households – and to launch a rigorous debate to address the level of benefits the system should provide and the question of how the revenue required to fund those benefits can be raised. Moreover, the consequences of the reforms envisaged in terms of redistribution and intergenerational equity must be analysed, to ensure that any adjustments to the system do not fall disproportionately on specific population groups, such as the retired population or future cohorts of workers. The system should also be made more transparent and easier to plan for, to offer greater certainty to the population and facilitate decision-making as regards saving, work and retirement. In this respect, automatic adjustment mechanisms could possibly be introduced, to adapt certain system parameters to changes in demographic and economic dynamics.

3.2 Main aspects on the public revenue side

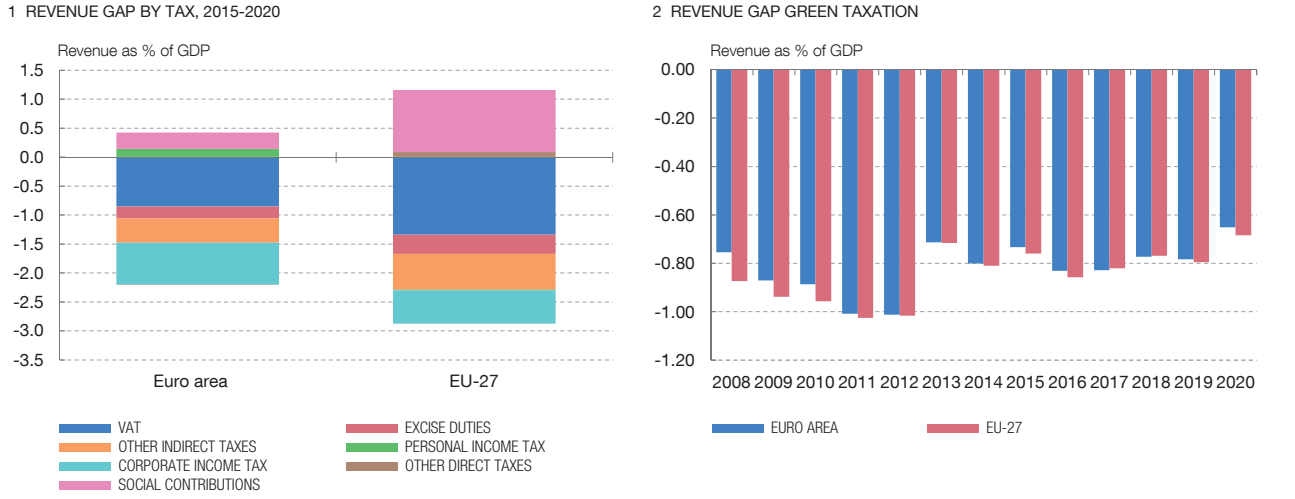
A comprehensive review of the Spanish tax system is needed to assess whether, overall, the different taxes meet their goals in the most efficient and most effective manner possible. A useful starting point for this analysis is to compare Spain's tax structure with that of our European neighbours. In this respect, the comparison with the EU-27 average over the average of the period 2015-2020 shows that revenue from indirect taxes and effective tax on consumption is lower in Spain (see Chart 2.15.1). In the case of direct taxation, corporate income tax revenue is also lower in Spain, while personal income tax revenue is in line with the EU-27 average. Moreover, the Spanish tax system obtains a larger proportion of revenue from tax on non-corporate capital, and higher public revenue from social contributions.[73] If the Spanish tax structure is compared, not with the European Union but with the average

73 See López-Rodríguez and García Ciria (2018) for a more detailed descriptive analysis of Spain's tax structure compared with the other EU-27 economies.

Chart 2.15

SPAIN'S TAX STRUCTURE COMPARED WITH THE EU-27 AVERAGE

A comparison of the Spanish tax structure with the European average over the average of the period 2015-2020 shows that revenue from indirect taxes is lower, with lower effective tax on consumption and a significant revenue gap in terms of green taxation. As a percentage of GDP, VAT and corporate income tax revenue in Spain is lower than the EU-27 average, while its revenue from social contributions and taxation of non-corporate capital is higher. Green taxation in Spain is lower than the EU-27 average.



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SOURCE: Eurostat (2022).

of the euro area economies, in the period 2015-2020 Spain also has a negative revenue gap in terms of indirect and corporate taxation, while it obtains a higher proportion of revenue from the other direct taxes and social contributions.

The academic literature suggests that shifting the burden of taxation from income to consumption yields potential efficiency and equity gains.[74] The efficiency gains associated with this shift in the tax burden stem from the reduction in the distortions associated with both corporate and personal income tax in the relative prices of the factors of production and the returns on assets. As regards the distributive effects, the additional revenue associated with the efficiency gains obtained from the shift in the tax burden could be used to neutralise its regressive effects, especially as a consequence of the higher tax on consumption. These compensatory measures could be introduced through adjustments in personal income tax or transfers to lower income households;[75] the amount and scope of these measures should be established according to society's distributive preferences.

74 The role played by consumption taxes in terms of redistribution and social insurance, and their positive effects on welfare, are examined in Correia (2010) and Macnamara, Pidkuyko and Rossi (2022), forthcoming. The possible expansionary impact that shifting the burden of taxation from income to consumption could have on economic activity is examined, for example, in Nguyen, Onnis and Rossi (2021).

75 Both the AIReF's Spending Review and the White Paper for the Reform of the Tax System (text available only in Spanish) point to the inefficiency and high cost of a redistributive policy based on the widespread use of reduced and super-reduced rates of VAT. In this respect, a flat rate of VAT, combined with transfers or negative personal income taxes for lower income households, would enable the same distributive goals to be achieved more efficiently.

Any reorganisation of the Spanish tax structure should include a review of the tax cost associated with the consumption tax relief measures. On the information available,[76] this cost is the main component of tax relief in Spain. In this respect, all tax benefits currently available must continue to be rigorously and independently reviewed, to determine whether they effectively and efficiently meet their initial goals, and otherwise to eliminate them.

Green taxation, coordinated at the international level, is an efficient instrument to reduce the negative effects associated with climate change and to incentivise the green transition (for more details, see Chapter 4 of this report). Despite the ambitious environmental commitments assumed by Spain in recent years, green taxation remains underdeveloped in Spain. In particular, the consistently negative revenue gap between Spain and the average of the EU-27 economies in this field illustrates the ample margin available for action and improvement in this area (see Chart 2.15.2).

The ambitious environmental goals assumed by Spain point to the need to introduce new tax measures in energy, hydrocarbons and transport. Ambitious and coordinated reforms in all these areas, without considering additional measures, would have an important distributive effect on households and would adversely affect activity in those industries with a higher environmental impact. However, these effects could be mitigated by various compensatory packages seeking to neutralise the regressive impact of the measures on the most vulnerable households. They could also be moderated by introducing various initiatives to encourage businesses and professionals to adopt new equipment and green technology. On aggregate terms, an increase in the share of green taxation could also permit an adjustment of the tax structure, reducing direct taxes and, therefore, the distortion these create in agents' decisions.[77]

The growing digitalisation and globalisation of economic activity require greater international coordination and harmonisation of the tax system. Digitalisation and globalisation provide an opportunity to boost Spanish economic growth. However, they also pose a challenge as to the design and sufficiency of the tax system. This challenge stems from the growing difficulty to accurately identify the jurisdiction in which a taxable object is created or transferred, an economic activity is pursued or taxable income is generated. At the same time, the effective taxation of tax bases may be eroded in view of the emergence of economic activities based on new business models that are difficult to assess, and in some cases even to locate. Likewise, the growing international mobility of tax bases associated with non-corporate capital, corporate profits and highly skilled labour income limits countries' revenue-raising capacity. In this setting, the recent international taxation agreements reached under the aegis of the OECD-G20 are to be welcomed, as are the various European Union initiatives

76 See, for example, the Memoria de Beneficios Fiscales (Spanish version only) accompanying the State Budget for 2022.

77 See Estrada and Santabárbara (2021).

to advance in the coordination and integration of corporate taxation and taxation of digital activities. The Spanish tax system needs to adapt to this new reality, since furthering the processes of international coordination and tax harmonisation driven by the EU-27 is the surest means of preventing any erosion of tax bases and Spain's economic competitiveness.

The White Paper for the Reform of the Tax System, published in March, presents a diagnosis of the Spanish tax system and proposes a raft of measures for a future reform of the system. In April 2021 the Government created a committee of experts entrusted with drafting a White Paper that would serve as a base for a future tax reform. Drawing on the diagnosis contained in the White Paper, which was published in March 2022, the bases and goals of a possible tax reform are presented. The White Paper points to the desirability of undertaking a complete overhaul of the system, to guarantee the sustainability of public finances, in accordance with the principles of efficiency and equity, and of announcing in advance the various tax measures to be included in the necessary fiscal consolidation programme.

As the preferred option in this possible tax reform, the White Paper calls for both direct and indirect tax bases to be broadened. It also highlights the desirability of strengthening continuous assessment of the measures introduced and of tax incentives, in order to achieve ongoing improvements in the process of drafting public policies. In addition, the White Paper signals the need to design the tax reform in conjunction with decisions as to the level and future course of public expenditure. However, the proposals do not include a quantitative assessment of the different tax measures considered under alternative macroeconomic scenarios and projected public expenditure paths, which is vital in the design of a credible fiscal consolidation strategy.

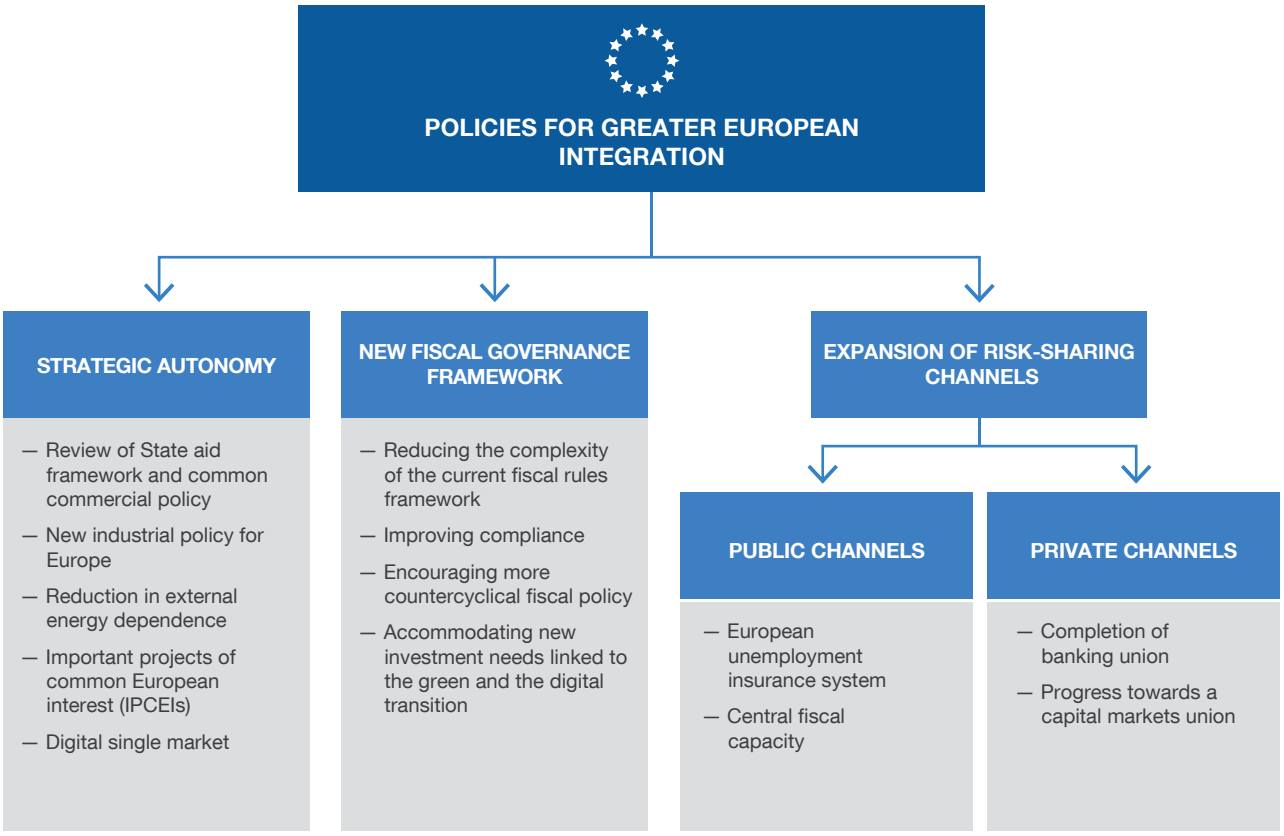
4 The role of European policies

European policies are playing an increasingly important role in addressing shocks that affect the EU economies overall. This came to the fore with the outbreak of the COVID-19 pandemic when, among other measures deployed at the European level, the NGEU programme was launched, making a huge volume of funds available to Member States.[78] More recently, the importance of European policies has also been apparent following the Russian invasion of Ukraine. In this case, for instance, the European Union has responded as one, imposing broad economic sanctions on Russia.

The growing importance of European policies – as an essential factor in Member States' economic activity – means that it is now more important than ever to continue

78 For more details, see Banco de España (2021d), "The EU response to the COVID-19 economic crisis and its new governance challenges", Box 1.2, *Annual Report 2020.*

Figure 2.3
EUROPEAN POLICIES



SOURCE: Banco de España.

making firm progress to strengthen the European institutional framework (see Figure 2.3). Some of the main initiatives that have attracted growing interest in the European institutional debate in recent months are set out below. In particular, the proposal to increase the European Union's autonomy of decision and action in areas such as energy, technology and digitalisation (see Section 4.1), and reform of the Union's fiscal rules framework (see Section 4.2). Also discussed in detail is the need to expand its public and private risk-sharing channels, which will require, inter alia, making continued progress towards the banking union and the capital market union (see Section 4.3).

4.1 Strategic autonomy

In recent decades, the integration of the European economies (including the Spanish economy) into global production chains has improved the allocation of resources and economic efficiency but, at the same time, increased the EU's exposure to supply chain strains. The globalisation of international trade and financial flows in recent decades has generally taken place in a geopolitical context conducive

to the growth of multilateralism.[79] More recently, however, various geopolitical events – such as the Russian invasion of Ukraine, Brexit and the trade war between China and the United States – have fundamentally questioned multilateralism and highlighted the significant risks to which the European economy is exposed in the global environment.

The high degree of trade openness of the European economy exposes it, through various channels, to disruptions in international trade and financial flows. In particular, the heavy dependence of the EU on imports of energy and other commodities make it especially vulnerable to shocks affecting the main countries supplying these products. It should be noted here that Russia is the main supplier of natural gas and oil to the EU (see Chart 2.16.1), although there are notable disparities in the degree of dependence of the different Member States.[80] The EU also depends critically on imports of other commodities essential for various industrial processes. For example, China produces around 90% of rare earths and magnesium, essential inputs for the electronics and automotive industries.[81] Russia, meanwhile, besides being one of the main global suppliers of certain critical commodities (such as palladium and scandium), is practically the only supplier to the EU of other very important products, such as nickel and anthracite (see Chart 2.16.2). Aside from these exposures, the EU economy is also very vulnerable to other disruptions in global value chains, such as those observed in medical products in the first phase of the pandemic[82] and those that still exist in international trade in semiconductors and in maritime transport.[83]

Recent trade and geopolitical developments have increased the relevance of the EU's open strategic autonomy (OSA) agenda presented at the end of September 2020. The aim of this initiative is to increase the EU's autonomy of decision and action, while strengthening the resilience of its economy, without undermining its open and multilateral stance, within the framework of a world order based on rules and cooperation.[84] Since 2020, the EU has launched an ambitious agenda of actions in the financial, technological and digital areas, among others, to accelerate European integration. These include, notably, those seeking to ensure a level playing field for EU businesses (such as the mechanism to control foreign investment in the EU and the review of State aid frameworks), measures to boost the resilience of the financial and payment system, the review of European trade policy and the proposal for a new European industrial policy.[85]

One example of the initiatives proposed within the scope of the OSA is the use of national and supra-national funds for Important Projects of Common

79 See Kataryniuk, Pérez and Viani (2021).

80 For example, gas supply in Spain is much less exposed to Russia than in most EU countries as a result of Spain's notable LNG regasification capacity (the largest of any EU country) and the gas pipelines connecting Spain to North Africa.

81 See European Commission (2020a).

82 See García, Martín-Machuca and Viani (2020).

83 See Kataryniuk, Río Lopezosa and Sánchez Carretero (2021) and Chapter 3 of this report.

84 See L'Hotellerie, Manrique and Millaruelo (2021).

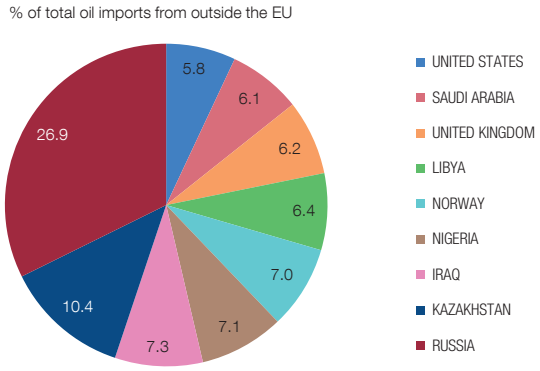
85 See European Commission (2021a).

Chart 2.16

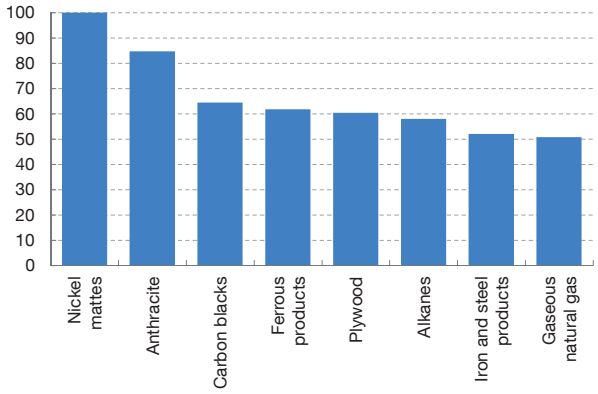
EUROPE'S HIGH DEPENDENCE ON TRADE WITH RUSSIA FOR CERTAIN COMMODITIES

Russia is the main supplier of oil to the EU. Also, the EU's imports of some specific products, such as nickel and anthracite, are highly concentrated in Russia and would in principle be difficult to substitute, owing to scant European exports and Russia's importance as a global producer.

1 IMPORTS OF OIL FROM COUNTRIES OUTSIDE THE EU IN 2019



2 RUSSIA'S SHARE OF THE EU'S EXTERNAL IMPORTS OF PRODUCTS NOT READILY SUBSTITUTABLE IN 2019 (a)



SOURCES: Suomen Pankki – Finlands Bank and CEPII.

a The identification of goods with low substitutability is based on the ratio of imports from Russia to European exports and on Russia's share of global production.

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European Interest (IPCEI) relating to microelectronics and batteries. The purpose of these actions is to guarantee Europe's supplies, resilience and leadership in these technologies, including achieving a 20% share of global chip production by 2030.[86] Also, in order to create a safer digital space and to establish a level playing field to foster digital innovation, growth and competitiveness, both in the European Single Market and globally, a proposal has been presented for a regulation on a single market for digital services (Digital Services Act)[87] and another on contestable and fair markets (Digital Markets Act).[88]

OSA policies need to be designed and implemented so as to minimise the risk of fragmentation within the EU and undesired distortions. For example, a more ambitious EU industrial policy could promote network effects and economies of scale, boosting efficiency and the development of specific industries geared to greater resilience. However, this policy may also intensify productive specialisation in the EU, generating major asymmetries across countries. Accordingly, these policies would need to be complemented by other initiatives to improve economic integration in the region and ensure profits and costs are more evenly distributed (see Section 4.3).

86 See European Commission (2022).

87 See European Commission (2020b).

88 See European Commission (2020c).

4.2 Reform of the fiscal rules framework

At the beginning of the COVID-19 pandemic, the Council of the European Union activated the Stability and Growth Pact's (SGP) escape clause. As a result, the deficit and debt requirements of the European fiscal rules were temporarily suspended, enabling a decisive national fiscal policy response to the health crisis and significantly mitigating the adverse effects of the pandemic on the EU economies.

In principle, when this clause is deactivated, the SGP will once again be applied. Against a background of higher government debt levels, this could require a significant fiscal consolidation drive in some Member States. Before the start of the war in Ukraine the European Commission indicated that the escape clause would be deactivated in 2023, as it considered that the economic recovery in the EU would be sufficiently advanced by then for fiscal policy normalisation to begin. However, taking into account the setback to EU growth already caused by the war, it is likely that the deactivation of this clause will be postponed by a year.

In any event, the European Commission is currently reviewing the European fiscal rule framework. In view of its significant shortcomings in recent decades, the European Commission began to review this framework in October 2021. The objectives of this review include reducing its complexity, improving compliance, boosting the countercyclical behaviour of fiscal policy and accommodating the new investment needs of the digital and green transitions.[89]

This reform of the fiscal rules should take into account, inter alia, the magnitude and disparity of the Member States' current budgetary imbalances (see Chart 2.17.1), which could require a more individualised approach and a reconsideration of the government debt levels that serve to anchor the SGP in the medium term. In this respect, it should be pointed out that the economic conditions under which the deficit and debt reference levels were originally set have changed. In particular, one of the main determinants of debt sustainability, the differential between the real interest rate and the economy's potential growth rate (known as the "r-g gap"), which was clearly positive when the euro area was established, has been negative over the last five years, although with high heterogeneity across countries. This means that, if the low interest rate environment of recent years continues to prevail, the primary balance necessary to stabilise the government debt-to-GDP ratio at a particular level would now be lower than required by the SGP, for any given inflation rate.[90] Conversely, however, it is important to bear in mind that the current negative differential between the real interest rate and potential growth may be reversed in the medium term, in which case stabilising the current high levels of government debt would require a considerable fiscal adjustment (see Chart 2.17.2).

89 See European Commission (2021b).

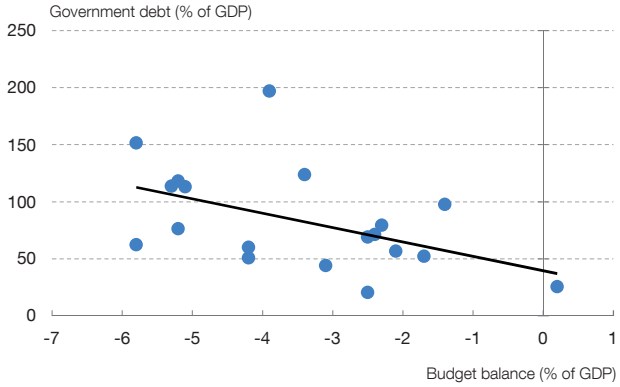
90 See Alloza et al. (2021).

Chart 2.17

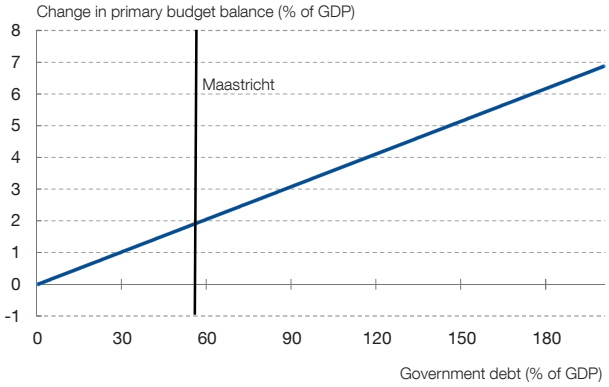
THE FISCAL POSITION OF THE MEMBER STATES AND THE ARITHMETIC OF EURO AREA DEBT SUSTAINABILITY

The narrowing of the differential between interest rates and growth allows debt to be stabilised at a higher level for a given primary deficit. However, a higher level of government debt entails greater exposure to reversals of this differential, which increases fiscal risk in a high government debt scenario.

1 PROJECTED EURO AREA GOVERNMENT DEBT AND BUDGET BALANCE IN 2022



2 CHANGE IN THE BUDGET BALANCE REQUIRED TO STABILISE DEBT WHEN R-G IS REVERSED (a)



SOURCE: European Commission.

a Depicted here is the change in the primary budget balance that would be needed to stabilise debt again at the level marked by the horizontal axis, when the differential between the real interest rate and potential GDP growth increases by 4 pp (approximately, the reverse of the change between 1995-1999 and 2015-2019).

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Moreover, there is a consensus among experts as to the need to review the fiscal rules framework to make it more transparent and predictable, and to improve countries' compliance. The fiscal rules framework has numerous objectives and a complex system of governance, which has made it difficult to apply in practice. One possibility that has been proposed in the specialised literature is to organise the framework around a single medium-term target for the level of government debt (which could be different in each country) and a single fiscal policy instrument, setting public expenditure from a medium-term perspective (i.e. linking its growth to the potential increase in economic activity). This approach would make the path of budgetary policy more predictable by introducing elements that go beyond the normal budgetary cycle, making it more automatic, and would therefore help to mitigate fiscal policy's procyclical pressures[91] and facilitate the evaluation task of the independent monitoring authorities (such as the AIReF in Spain). The hitherto scant ability to ensure that countries build up fiscal buffers in good times for use in crises should also be improved. This would require improving the design of the system of incentives for complying with the rules and, probably, strengthening the role played by independent fiscal institutions.

The new European fiscal governance framework should be completed with a number of elements to expand the risk-sharing channels in the EU. This would entail, for instance, establishing a European unemployment insurance system and a

91 See Benalal et al. (2022).

central fiscal capacity need to be established. It should be noted that, under the current fiscal rules framework, it is not possible to ensure, at any given moment, that the aggregate stance of the national fiscal policies is appropriate for the EU as a whole, which makes it hard to achieve a balanced fiscal and monetary policy mix.

New tools must also be developed to enable the risk of financial fragmentation to be reduced and new common investment needs to be financed. In this respect, some of the initiatives approved during the pandemic should be expanded, such as the temporary Support to mitigate Unemployment Risks in an Emergency (SURE), launched in April 2020, which has demonstrated how access to EU loans generates significant interest savings for most Member States and also protects them from situations of financial market stress.[92] It would also be desirable to review the timeframe for the NGEU programme to reduce the risk that some of the investment necessary to boost digitalisation, the fight against climate change and EU strategic autonomy may not be completed. For example, the length of the application period for loans under this programme, which expires in mid-2023, could be reconsidered.

4.3 Expanding risk-sharing channels

In addition to expanding public risk-sharing channels (see Section 4.2), risk pooling among private agents needs to be fostered. Various analytical studies have already shown that the private risk-sharing mechanisms currently operating among the European economies are much less powerful than those in the United States, for example.[93]

For progress to be made with private risk sharing, the financial architecture of the EU needs to be completed. In particular, progress is needed on the capital markets union agenda, to achieve greater financial market integration in the EU and to increase flows of financing between Member States. The European Commission's 2020 Action Plan contains a wide range of proposals to move in this direction, which have been well received by the Member States. For example, in November 2021, the Commission proposed a package of measures to improve the dissemination of equity market information and to improve investor access to company data (especially SME data). In 2022, it is expected to continue proposing initiatives to facilitate SME access to listed markets and the exchange of information. The Commission will also address the harmonisation of certain aspects of national corporate insolvency frameworks, a decisive factor to reduce fragmentation in European financial markets and encourage cross-border investment. The fiscal treatment of such investment – in particular, the deductibility of withholding taxes at source – and supervisory convergence are other aspects due to be addressed within the context of the 2020 Action Plan.

92 See Burriel, Kataryniuk and Pérez (2022), forthcoming.

93 See, for example, Burriel et al. (2020).

Completing the banking union is also essential. This requires setting in place a European Deposit Insurance Scheme (EDIS) with a risk-pooling component that is as extensive as possible. A credible political commitment here would represent a decisive contribution to ensuring financial stability in the euro area in the short and medium term.

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3

RISING GLOBAL INFLATION

1 Introduction

Since early 2021 inflation has trended upwards globally and has recently reached rates not seen for several decades. In the euro area, the harmonised index of consumer prices (HICP) grew slightly above 6% in year-on-year terms in 2022 Q1, an unprecedented figure in the history of the monetary union (see Chart 3.1). In the case of the Spanish economy, it stood at 7.9%, its highest level in 35 years. Since end-2021, underlying inflation (the rate of change of the HICP, excluding energy and food) has comfortably exceeded 2% in the euro area, with Spain also surpassing this level in early 2022.[1] Inflationary pressures are also proving very acute in the rest of the main economies, especially in the United States (among the advanced economies), where inflation reached 8% in 2022 Q1, and in Eastern Europe and Latin America (among the emerging market economies).

This strong rise in inflation, following decades during which price growth trended downwards, is due to various factors. As documented in Section 2, inflation moderated significantly in the developed economies over recent decades, a pattern which the economic literature has associated with various processes of structural change, such as population ageing, globalisation and technological change.[2] However, these price dynamics changed in early 2021, once the most stringent restrictions relating to the COVID-19 health crisis had been lifted. In particular, Section 3 shows that the current inflationary pressures are primarily due to the increase in commodities prices and the fact that demand in the major world economies (underpinned by highly expansionary monetary and fiscal policies), has recovered more strongly from the impact of the pandemic than supply (affected, among other factors, by bottlenecks in global value chains). More recently, some geopolitical tensions (particularly those deriving from the Russian invasion of Ukraine in late February) are contributing to a further rise in commodities prices, particularly energy and food prices.

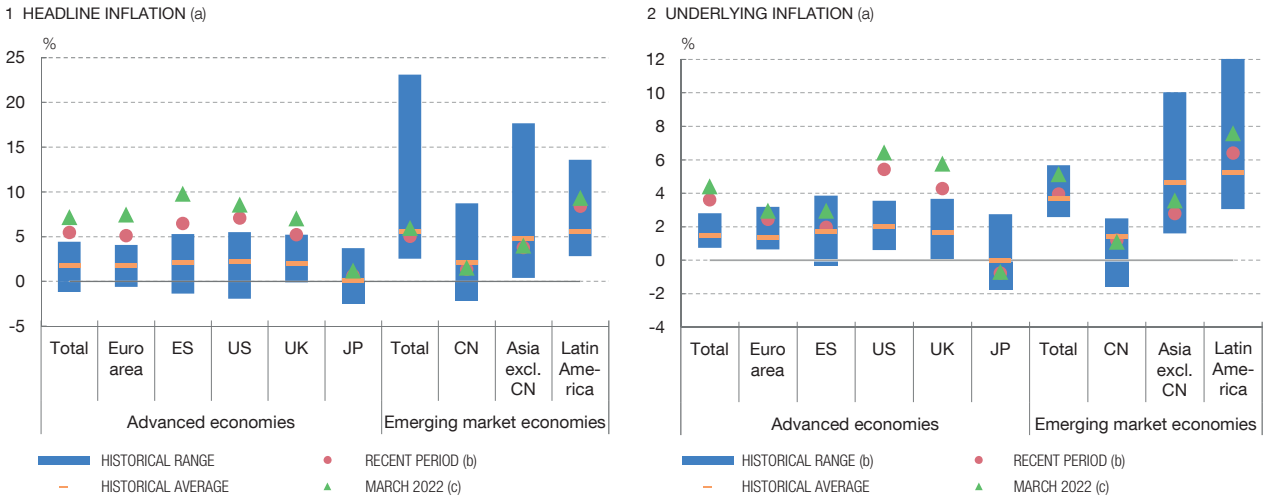
The potential materialisation of indirect and second-round effects might prolong the current inflationary episode. As detailed in Section 4, these effects could arise if the increases observed in energy costs are ultimately significantly passed through to the prices of other goods and services in the economy, or as a result of possible wage increases (to offset workers' loss of purchasing power),

1 These dynamics have continued to date in Q2. Thus, according to the latest information available, relating to April, headline inflation stood at 7.5% in the euro area and at 8.3% in Spain, while the year-on-year growth rate of the underlying price index was 3.5% in the euro area (HICP excluding energy and food) and 3.4% in the Spanish economy.

2 See Banco de España (2019).

Chart 3.1
THE GLOBAL RISE IN INFLATION

The rise in inflation is proving to be more pronounced and persistent worldwide than expected, reaching extraordinary levels in numerous economies.



SOURCE: National statistics.

a ES: Spain; US: United States; UK: United Kingdom; JP: Japan; CN: China.
b The historical averages and ranges cover the period 1999-2019, except for the emerging market economies, China and Asia excluding China aggregates, owing to the lack of data. The recent period refers to the inflation rate average from September 2021 to March 2022 (February 2022 for the emerging market economies and Asia excluding China aggregates).
c February 2022 for the advanced economies, emerging market economies, Japan and Asia excluding China aggregates.

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generating new upward pressures on firms' costs and on the prices of their products. There is much uncertainty about the severity with which these effects might materialise in the future and, although they have not done so to a large extent so far, the persistence of inflationary pressures makes it more likely for them to arise in the future. Aside from this, various more structural aspects might also influence future price developments, including most notably dynamics relating to the relocation or deglobalisation of economic activity, demographic trends and the green transition.

Economic policies have responded to rising prices in several dimensions (see Section 4.2). Fiscal policies in many countries are seeking to mitigate the adverse effects deriving from the sharp rise in prices (especially energy prices) in the short term for households and firms. With a more medium-term perspective, several initiatives have been proposed at European scale to reduce reliance on energy. For their part, central banks have made headway in the process of normalising monetary policy in response to the current high-inflation setting. For instance, the European Central Bank (ECB) discontinued net asset purchases under its pandemic emergency purchase programme (PEPP)[3] – introduced shortly after the outbreak of

3 Pandemic emergency purchase program (PEPP).

the pandemic – in March 2022 and announced in April that net asset purchases under its asset purchase programme (APP)[4] – in force since mid-2014 – will end in 2022 Q3.

The current bout of strong inflationary pressures seems to have already had a considerable adverse impact on economic activity. This is shown in Section 5, where, beyond the impact of this episode on the main macroeconomic variables, special attention is paid to how it appears to be affecting different types of households and firms unevenly. The main conclusions of this chapter can be found in Section 6.

2 Determinants of inflation in the pre-pandemic period

Except in the most recent period, inflation has trended downward in the developed economies over the last decades. As shown in Chart 3.2, inflation moderated across-the-board in the main advanced countries following the two oil crises in the 1970s. In addition, inflation volatility and dispersion also declined significantly.

In the period elapsed between the global financial crisis and the start of the COVID-19 pandemic, inflation was even persistently below many central banks' inflation targets. Indeed, in the period 2009-2019, the growth rate of prices in the advanced economies decreased on average to around 1.5%. This decline was especially pronounced in the euro area where, although activity recovered with some vigour between 2013 and 2019, inflation rates stood, on average, at 1% during that period.

The economic literature has tried to explain this downward trajectory of inflation through a combination of cyclical and structural factors. For example, according to several studies,[5] low inflation in the euro area in the period 2013-2019 was largely due to conjunctural factors. These include the high cyclical slack generated after the sovereign debt crisis and various concurrent positive supply shocks, such as downside fluctuations in energy prices or the competitiveness adjustments that took place in some euro area countries. The persistence of this low-inflation episode led to some deanchoring of the medium-term inflation expectations, also contributing to prolonging the episode. All of this against a background in which fiscal policy had little room for manoeuvre and monetary policy was operating in an environment of interest rates close to their effective lower bound.

As regards structural determinants, it has been argued that some dynamics (such as globalisation, the development of new technologies and population ageing) may have contributed to the low-inflation environment.[6] In particular,

4 Asset purchase program (APP).

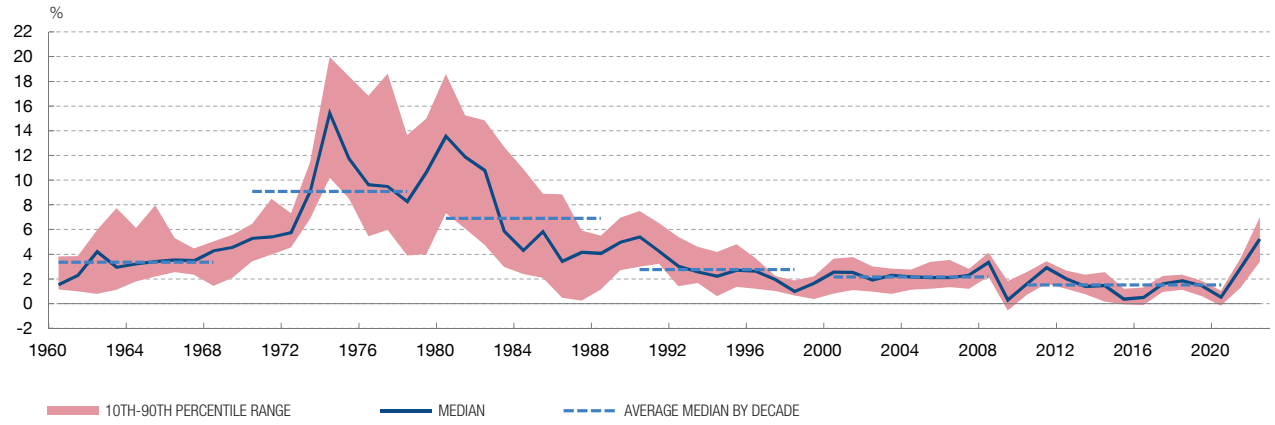
5 See, for instance, Banco de España (2019), Koester et al. (2021) and the references therein.

6 Other structural factors also analysed in the economic literature include the higher independence and credibility of central banks in the advanced and emerging market economies, and the adoption by most of them of monetary policy regimes with explicit inflation targets.

Chart 3.2

INFLATION DEVELOPMENTS WITH A LONG-TERM PERSPECTIVE (a)

Inflation rates have declined significantly in recent decades in the main advanced economies.



SOURCES: International Financial Statistics (IMF) and Consensus Economics.

a Annual inflation rates in the period 1960-2022 (IMF April 2022 WEO projections) in nine advanced economies: Australia, Canada, France, Germany, Italy, Japan, Spain, the United Kingdom and the United States.

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the trade and financial opening-up of world economic activity in recent decades (which peaked in the 1990s), the development of global value chains and the internationalisation of services, together with the full integration of China and other emerging countries in international trade, may have exerted downward pressure on price growth.[7] This effect would have arisen through both direct channels (owing to the import of goods at a lower cost) and indirect channels, owing to the impact of globalisation on market structure (which would have increased competition and the supply of labour, and reduced employees' bargaining power in the advanced countries).

The digitalisation process and population ageing may also have generated a negative effect on inflation.[8] The digitalisation process prompted a reduction in the prices of assets and technological services, an increase in e-commerce, a higher level of competition in the markets and an increase in productivity. In addition, the population ageing process may have negatively affected the growth rate of prices through several channels: by fostering saving, by inducing a greater social preference for low inflation rates (insofar as the elderly, who usually have higher levels of financial

7 The growing interconnectedness of world economic activity may also have increased the global transmission of shocks and the synchronisation of inflation rates globally. Indeed, various empirical studies show that advanced countries' inflation rates show a high level of synchronisation, as a result of the growing impact of global shocks on national inflation rates (see Forbes, Gagnon and Collins (2021)). Other factors that appear to have contributed to this greater synchronicity are the similarities between advanced countries' monetary policy strategies and the existence of a common component in the financial cycles.

8 In a broad sense, the digitalisation process refers both to the adoption of new information and communication technologies (ICT) and digital data processing and analysis, and to the automation of production processes.

wealth, are more sensitive to inflation hikes) and by causing a decline in the natural interest rate (thus limiting the capacity of monetary policy to boost activity and inflation when interest rates are close to their effective lower bound).[9]

However, the empirical evidence available on the role of these structural factors is not conclusive. Thus, for example, several studies find that even though globalisation has had a downside impact on the inflation rate, it has been minor.[10,11] Also, the evidence relating to the effects of digitalisation[12] and population ageing[13] on long-term inflation is scarcely conclusive. In any event, these three factors have concurred, making it difficult to distinguish the implications of each of them.

3 Characterisation of the current inflationary episode

The global inflation rate[14] rose significantly in 2021 and accelerated further in early 2022. Thus, after standing at 4% on average during the period 2009-2019 and 3.2% in 2020, it rose to 4.4% on average in 2021 and to 7% in 2022 Q1.

This section characterises these recent price dynamics. The main global factors explaining the current inflationary episode are described first (see Section 3.1). Second, the more idiosyncratic aspects that make the impact of this episode differ significantly across the biggest world economies are set out (see Section 3.2). Third, it is noted that, although the increase in energy prices is a key factor in the recent surge in inflation rates in the advanced economies, in recent months the price increase has extended to the rest of goods and services and has been reflected in agents' medium and long-term inflation expectations (see Section 3.3).

3.1 Global factors

The global nature of the current inflationary episode is mainly linked to the dynamics generated by the COVID-19 pandemic in economic activity. In particular, the outbreak of the pandemic, the closure of economies, the contraction

9 See Fiorentini et al.(2018).

10 See ECB (2021a).

11 See Forbes (2019), Bianchi and Civelli (2015) and Attinasi and Balatti (2021).

12 This is largely due to the difficulty of quantifying the indirect effects of digitalisation on inflation, which operate through changes in the structure of the goods and factor markets, with effects that may be offset reciprocally. As regards the direct effects, those deriving from the reduction in the prices of ICT goods and the increase in e-commerce have not only been proved to be negative, but also minor or short-term. See ECB (2021b), Csonto, Huang and Tovar (2019) and Anderton et al. (2020).

13 See Lis, Nickel and Papetti (2020) and Bobeica et al. (2017) for an analysis of the euro area, and Juselius and Takáts (2018) for a historical analysis in a broad group of advanced economies.

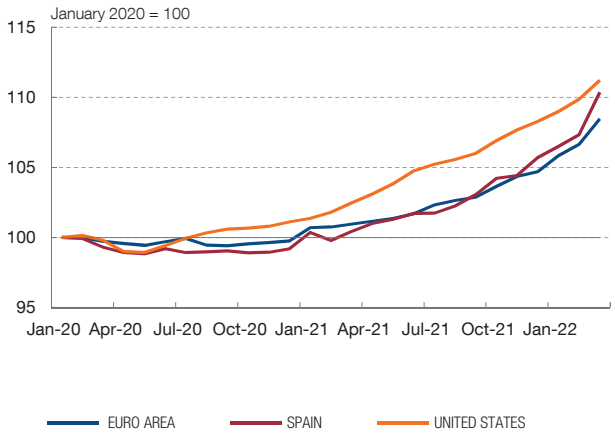
14 Calculation performed with the following economies: euro area, United States, Canada, Denmark, Japan, Norway, Sweden, United Kingdom, China, Brazil, Mexico, Chile, Colombia, Peru, Czech Republic, Hungary, Poland, Russia, Turkey, India, Indonesia, Korea, Taiwan and Thailand.

Chart 3.3

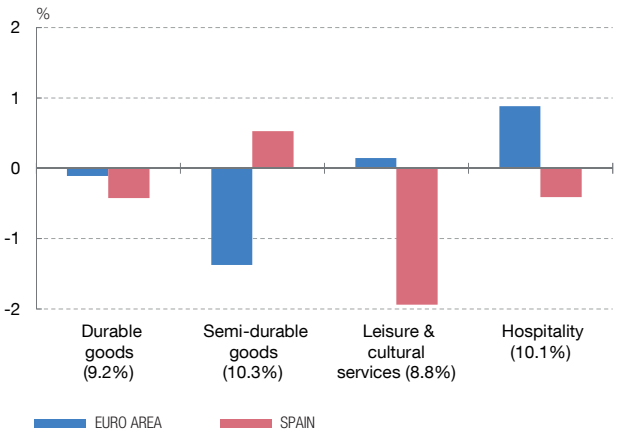
THE PANDEMIC AS A GLOBAL DETERMINANT IN CONSUMER PRICE DYNAMICS FOR CERTAIN GOODS AND SERVICES

The prices of numerous goods and services decreased over the course of 2020 as a result of the closure of economies, the induced recession and indirect tax cuts.

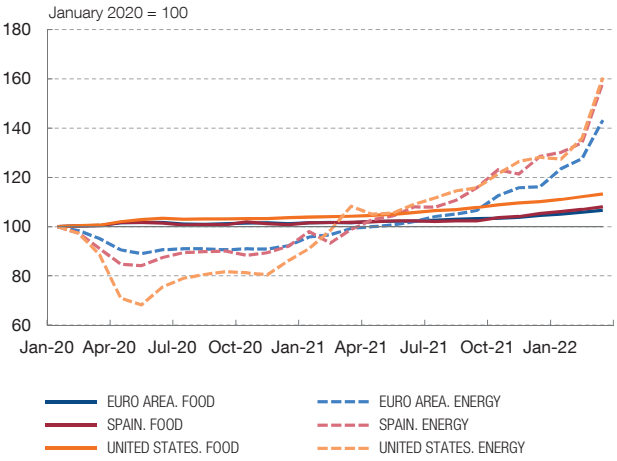
1 CONSUMER PRICES. LEVEL (a)



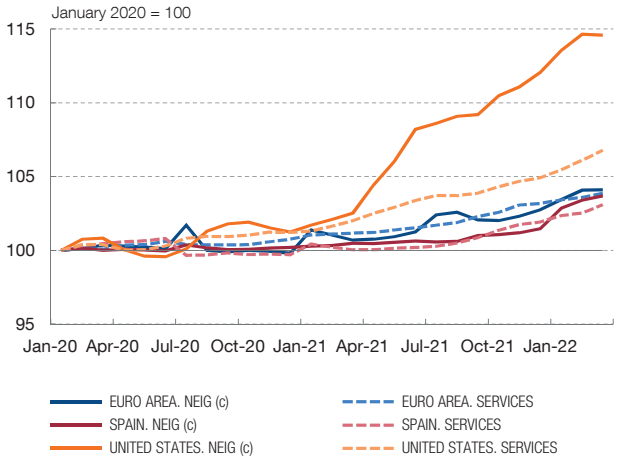
2 THE PANDEMIC AND CHANGES IN 2020 IN THE PRICE OF SOME OF THE MOST SEVERELY AFFECTED GOODS AND SERVICES (b)



3 FOOD AND ENERGY PRICES. LEVEL (a)



4 NON-ENERGY INDUSTRIAL GOODS AND SERVICES PRICES. LEVEL (a)



SOURCES: Eurostat, Banco de España and national statistics.

a Seasonally-adjusted series, except for food and energy prices relating to Spain.
b Year-on-year change at December 2020. The weight of each heading in the HICP is indicated within brackets.
c Non-energy industrial goods.

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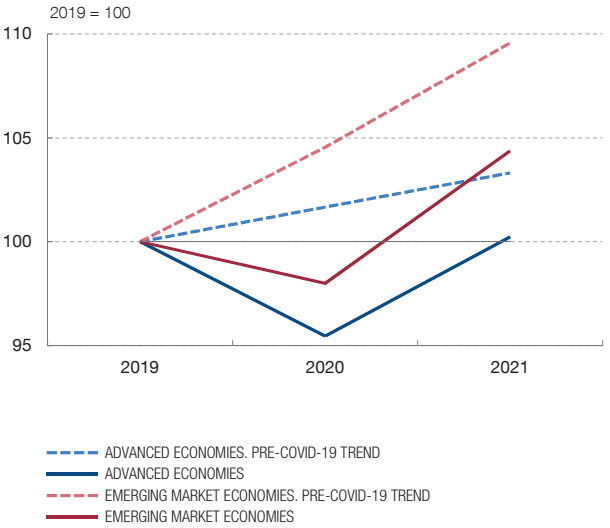
of activity and the indirect tax cuts approved generated reductions in the prices of numerous goods and services over the course of 2020. Compared with the United States and the euro area, this decline was particularly sharp in Spain, where significant falls were recorded in the prices of some of the expenditure items most affected by the pandemic (such as leisure and cultural services, and accommodation and food services) and in energy prices (see Chart 3.3). In contrast, food prices increased globally owing to, among other aspects, the recomposition of demand and various supply chain disruptions.

Chart 3.4

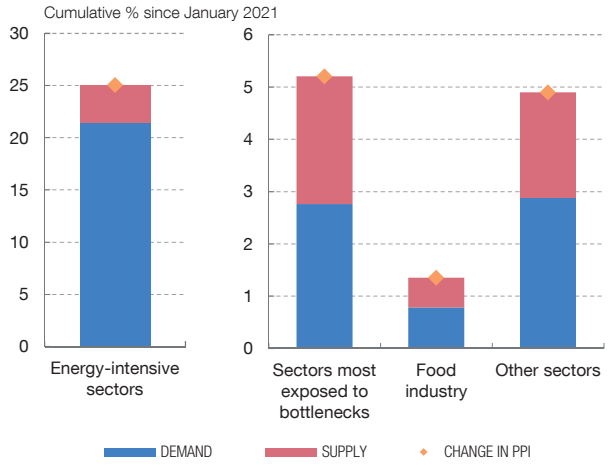
MISMATCHES BETWEEN SUPPLY AND DEMAND

The swift recovery of demand on a global scale played a key role in the surge in prices from spring 2021, while on the supply side restrictions of a different kind prevented a sufficient response. Inflationary pressures materialised rapidly in the international commodities markets.

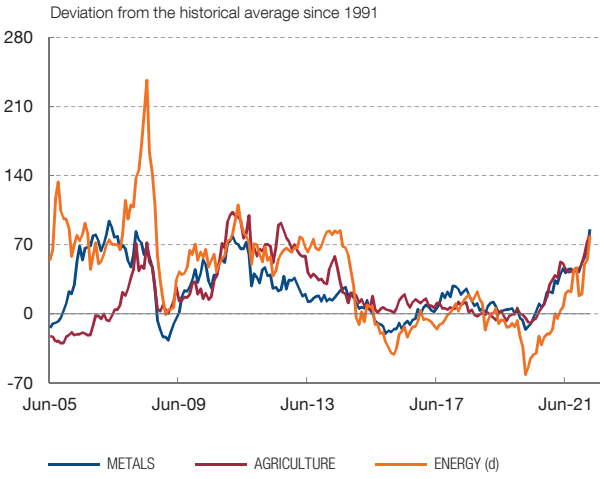
1 GDP PATH VIS-À-VIS ITS PROJECTED TREND BEFORE THE PANDEMIC (a)



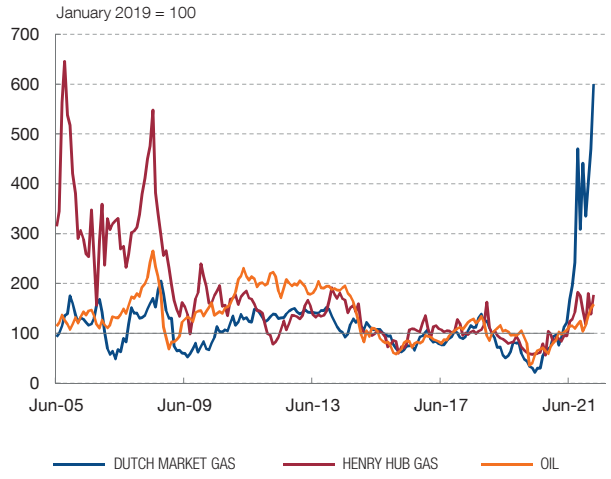
2 SUPPLY AND DEMAND FACTORS IN PRODUCER PRICE (PPI) DEVELOPMENTS IN EURO AREA MANUFACTURING (b)



3 COMMODITIES PRICES (c)



4 GAS AND OIL PRICES (c)



SOURCES: Bloomberg, Eurostat, Refinitiv and Banco de España.

a The pre-COVID-19 trend includes the IMF's October 2019 WEO forecasts. The current trend is based on the April 2022 WEO.
b Own estimates based on a monthly SVAR model in log differences of manufacturing production and prices (PPI). PPI growth is depicted without constant.
c Expressed in real terms using the GDP deflator for the United States, except for the Dutch market gas price, which uses the GDP deflator for the euro area.
d This index includes six commodities: Brent oil, WTI oil, natural gas, gas oil, fuel oil and gasoline.

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Once the worst of the pandemic had been overcome, as the economies reopened, prices began to recover. The swift recovery of demand contributed to the surge in prices from spring 2021 (see Chart 3.4.1), particularly against a backdrop in which, as detailed later on, supply was limited by restrictions of a different kind. By way of illustration, Chart 3.4.2 shows that, in the case of industrial goods in the euro area, both supply and demand factors have contributed positively to rising prices since early 2021.

Inflationary pressures materialised rapidly in the international commodities markets. In contrast to the rebound in demand, various factors have limited the response of the supply of commodities, particularly energy ones. Conjunctural factors include the reduction of gas supply for geopolitical reasons and the lack of maintenance of certain energy infrastructures during the lockdown periods. Noteworthy among the factors of a more structural nature are the gradual reduction in investment in fossil fuel extraction (a consequence of the promotion of decarbonisation policies in recent years), especially in the case of oil and gas. As a result, once the worst of the pandemic had passed, there was a notable fall in European oil and natural gas inventories, and a strong upturn in their prices (see Charge 3.4.3). These tensions have also affected industrial metals and agricultural commodities (see Chart 3.4.4), the latter aspect having contributed to consumer food prices remaining on a robust upward path (see Chart 3.3.3). All of these dynamics have been extraordinarily exacerbated by the Russian invasion of Ukraine, given that these two countries are among the main global suppliers of both energy (oil and natural gas) and non-energy (nickel and wheat) commodities.

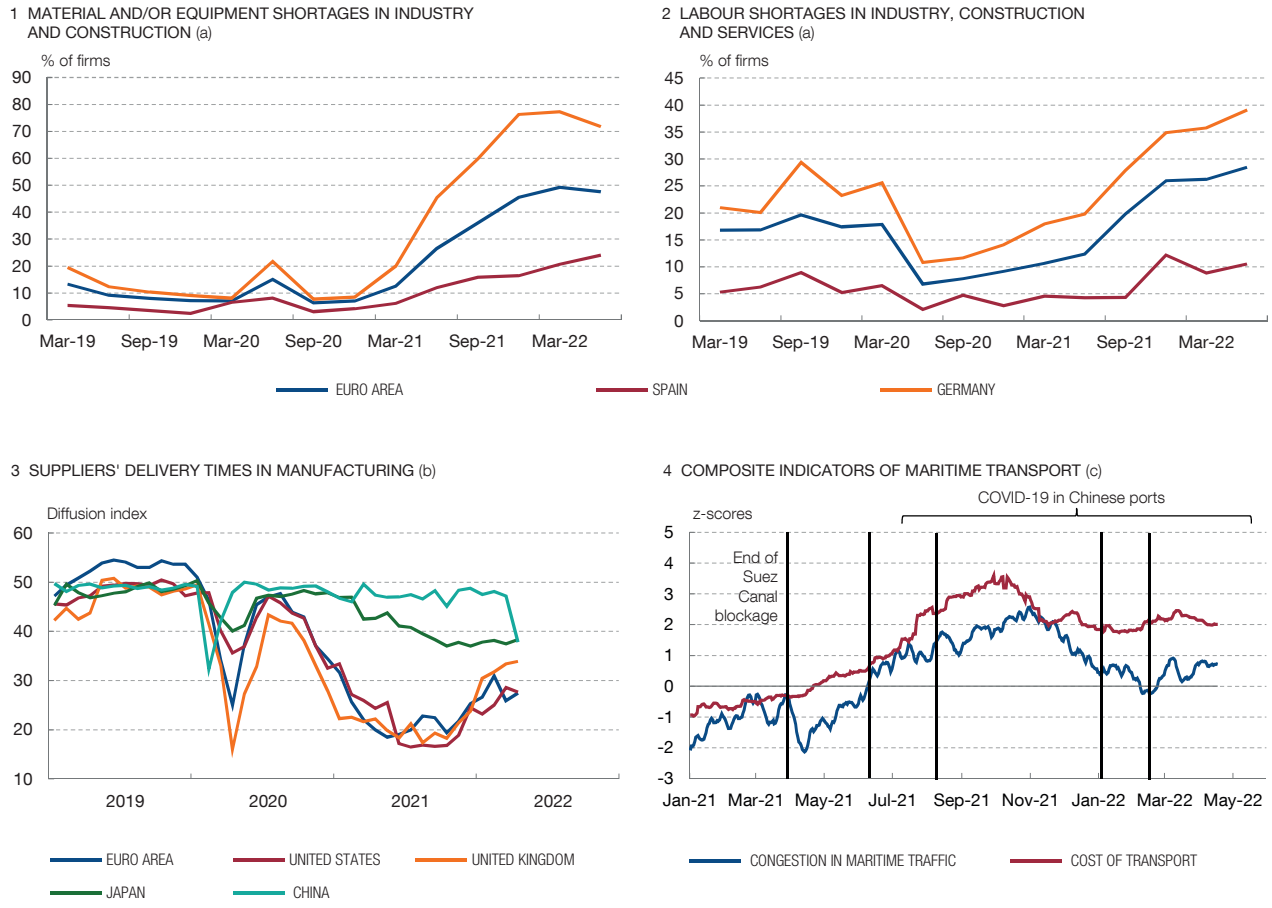
The recovery of supply has also been delayed by the emergence of bottlenecks. Aside from the mismatches that have been taking place in the commodities markets in recent quarters (since the start of the recovery from the health crisis) and in a setting where the measures adopted to contain the pandemic were being lifted only gradually (which continued to influence both the production of goods and demand for services), the strength of the recovery of demand and its reorientation towards manufacturing have led to an overload of global supply chains. In this connection, the high fragmentation of production globally has contributed to firms facing a growing problem of input supply and, in certain economies, labour shortages (see Charts 3.5.1, 3.5.2 and 3.5.3). These supply problems have been especially acute in industries such as semiconductors, plastics, wood and industrial metals. These mismatches have been compounded by major disruptions in goods transport. Specifically, the main means of freight transport, shipping, has experienced a significant tightening since early 2021. As illustrated by the synthetic indicators shown in Chart 3.5.4, this has prompted a sharp rise in its cost.[15]

15 Among other factors, the health situation and the lack of hauliers disrupted the loading and unloading of containers at ports. Several temporary events, such as the blocking of the Suez Canal in March 2021 and the closure of some ports in China, also added pressure to freight transport.

Chart 3.5

THE IMPORTANCE OF BOTTLENECKS IN THE RISE IN INFLATION

Supply was weighed down by the impact of bottlenecks, which resulted in increased shipping costs, congestion at ports and delays in delivery times, and have also contributed substantially to the increase in prices in the most exposed sectors.



SOURCES: European Commission, Eurostat, IHS Markit, Refinitiv and Banco de España.

a Aggregate index based on the sectoral indices of the European Commission's survey using an average weighted by the share of each sector in terms of value added. Seasonally adjusted data are used.
b Purchasing Managers' Indices (PMIs).
c An increase denotes more congestion or a higher price. Prepared on the basis of an analysis of the main components using indicators of container traffic in the Suez Canal and wait times in the ports of five regions in the United States, Northern Europe and China, since January 2020. For cost, the Baltic Dry Index, Harpex Index and Freightos indices prices for container traffic between Asia and the United States and between Asia and Europe are used. The indicator is expressed in standardised units, i.e. the number of standard deviations where the value lies above or below the sample mean.

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At end-2021, the bottlenecks appeared to be dissipating very gradually, but several recent factors may be contributing to exacerbating them. Indeed, the conflict in Ukraine is once again affecting global supply chains and intensifying some of these bottlenecks. Also, the worsening of the course of the pandemic recently observed in China and the severity of the containment measures adopted by the Chinese authorities are influencing both maritime transport and manufacturing production.

In quantitative terms, rising commodity prices appear to be the main factor behind the increase in prices. It is difficult to identify the contribution of the different factors analysed to the rise in consumer prices, but it may be proxied using a structural econometric model. To this end, a distinction is drawn between demand shocks (including those affecting demand for commodities) and supply shocks. In the latter case, those related to the increase in production costs owing to the rise in commodities prices are distinguished from those associated with bottlenecks. Within this analysis framework, the Banco de España's estimates[16] suggest that the increase in commodities prices[17] was the main driver of the recent rebound in inflation in both the United States and the euro area and, especially, in the Spanish economy (see Chart 3.6). In any event, the robust recovery of demand also appears to have played a quantitatively significant role in these inflation dynamics, principally in the United States.[18] The impact of bottlenecks on inflation seems to have been particularly pronounced in the euro area. The following section provides some elements that help understand the cross-country heterogeneity.

3.2 Idiosyncratic factors

The current inflationary episode is having an uneven impact on the world's main economies, as a result of the asymmetric impact of the various global factors that have driven it and of various idiosyncratic elements. The latter notably include aspects related to the composition of the consumption basket, productive specialisation, positioning in global and regional production chains, labour market slack, the anchoring of inflation expectations and exchange rate fluctuations.

The strength of the recovery in demand has been uneven across the advanced economies. It has been particularly vigorous in the United States, which has resulted in more intense and earlier underlying inflationary pressures there (see Chart 3.1.2). Indeed, underpinned by extensive fiscal policy packages[19] and bigger wage increases, private consumption in the United States exceeded its pre-health crisis level much earlier than in the euro area and at end-2021 it stood more than 4%

16 A structural vector autoregressive (SVAR) econometric model estimated with monthly data is used which includes, in this order, the price of oil, a bottleneck indicator, and generic supply and demand shocks reflected in the manufacturing activity and calculated as in Alonso, Kataryniuk and Martínez-Martín (2021). The bottleneck indicator is constructed by adapting the work of Benigno et al. (2022) for the euro area and captures the increase in transport prices and delivery times once the effect of demand is discounted.

17 For this analysis the price of oil was used as a representative measure of commodities prices. The evidence suggests that oil prices, unlike other commodities, are determined internationally, which makes identification in this context easier, and are closely related to the other commodities' prices. See, for instance, Mohammadi (2011) and Chaudhuri (2001).

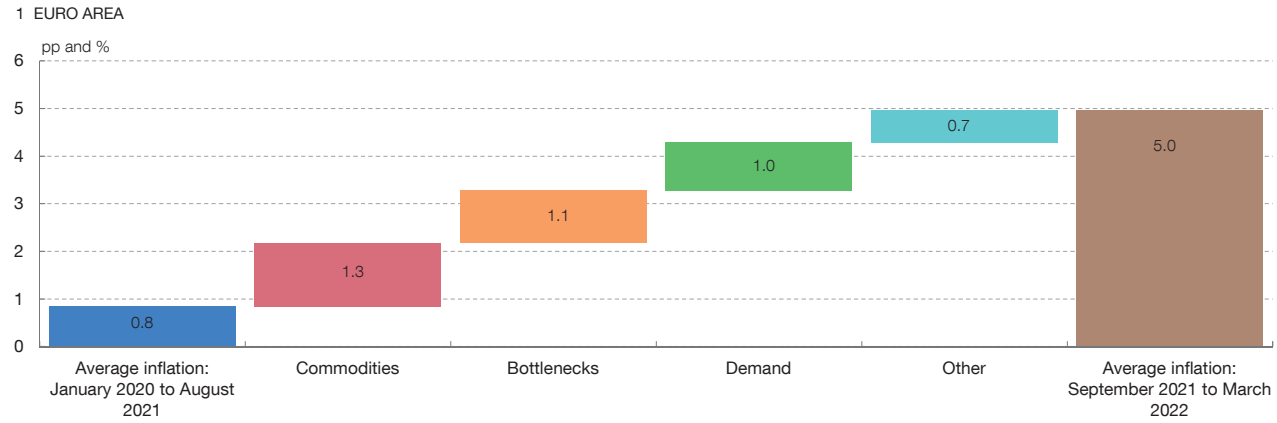
18 It is even possible that the identification strategy chosen in this analysis may to some extent underestimate the effect of internal demand on prices in the United States, since it has a greater relative impact on international prices (see Bobeica and Jarocinski (2019)).

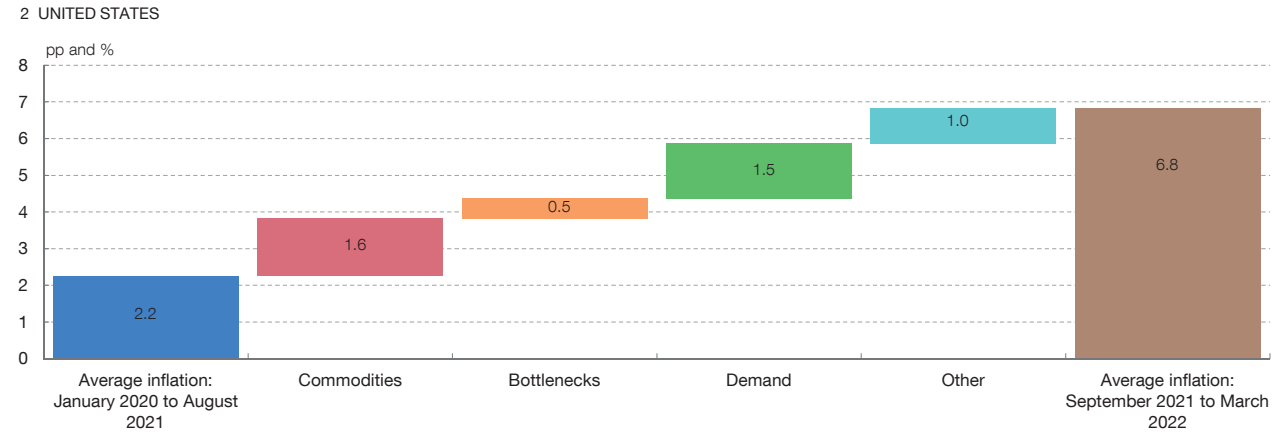
19 See Borrallo, Buesa and Párraga (2021) and Jordà et al. (2022).

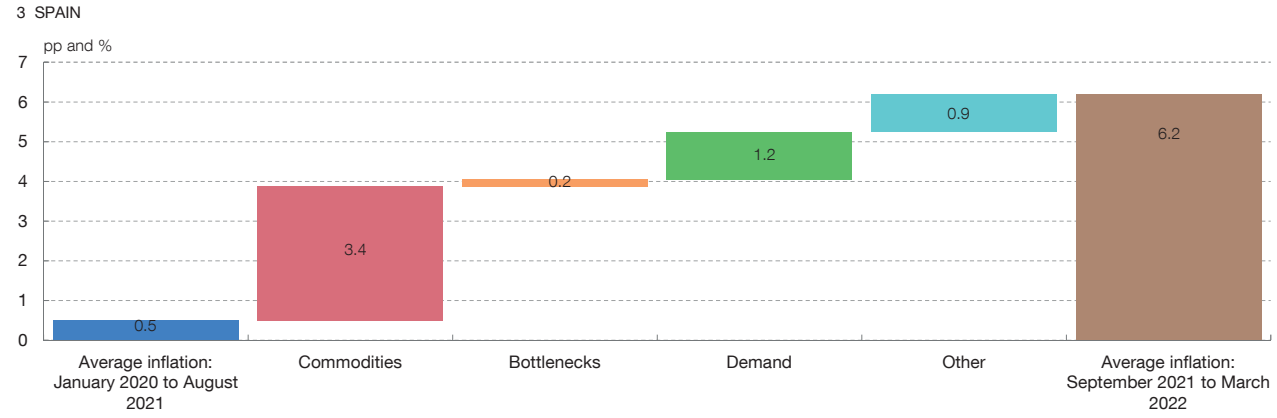
Chart 3.6

DETERMINANTS OF THE INCREASE IN INFLATION IN THE RECENT PERIOD (a), ACCORDING TO AN ECONOMETRIC MODEL

The contribution of different factors to the recent increase in prices in Spain, the euro area and the United States is illustrated using a monthly vector autoregressive model. The model assumes that oil prices and any other supply-side shock, such as bottlenecks, can immediately affect demand, but not vice versa.







SOURCES: IHS Markit, Kiel Institute for the World Economy, Refinitiv, Eurostat and Banco de España.

a Estimates for the euro area, United States and Spain using a structural vector autoregressive model based on the Cholesky method, which includes the price of oil, a bottleneck indicator for each area, supply and demand-side shocks in manufacturing and headline CPI.

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above that reference. By contrast, in the same period euro area private consumption remained around 3% below its end-2019 level, albeit with notable cross-country heterogeneity. Thus, while in Germany, Italy and the Netherlands consumption was 2%-6% higher than its pre-pandemic level at end-2021, in Spain it was still 7.9% below that level.

Bottlenecks are having a greater impact in Europe and the United States. The global supply chain disruptions observed since mid-2021 have hit the United States, the United Kingdom and the euro area harder, as reflected by the PMI suppliers' delivery times (see Chart 3.5.3). Germany has been the most vulnerable euro area country, given: (i) its higher degree of integration and centrality in value chains; (ii) the high share of manufacturing – particularly the automotive industry – in its economy; and (iii) its heavy reliance on imports of commodities and inputs in its production processes.[20] In this regard, since summer 2021 more than 50% of German industrial firms have reported the shortage of material and/or equipment as a factor limiting production. This percentage is far higher than that of other European economies, such as the Spanish one, where less than 25% have done so (see Chart 3.5.1).

Higher energy prices are having a more acute impact on inflation in the advanced economies and, especially, in the euro area (see Chart 3.7.1)**.** The greater contribution of the energy component to recent euro area inflation is largely a result of this component accounting for a higher relative share of the consumption basket in the euro area (10.9% of the total versus, for example, 7% in the case of the United States). Alongside this factor are the depreciation of the euro throughout 2021 and the war in Ukraine, which, given the euro area's heavy reliance on foreign energy, also contributed to a greater increase in the price of the energy component in the consumption basket. Furthermore, the price of electricity in Europe has been particularly affected by the increase in the price of gas and, to a lesser degree, of the greenhouse gas emission allowances under the EU Emissions Trading System (ETS).

Within the euro area, energy is making a particularly significant contribution to the upsurge in inflation in Spain given the larger contribution of the electricity component (see Chart 3.7.2). First, this is due to energy and, in particular, electricity accounting for a higher relative share of Spanish households' consumption basket. Specifically, Spanish households earmark 11.7% of their budget for energy (4% for electricity), while on average euro area households earmark 10.9% (3% for the electricity bill). The different relative share explains 25% of electricity's greater contribution to inflation in Spain than in the euro area during the current episode.[21]

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20 See Kataryniuk, del Río and Sánchez Carretero (2021).

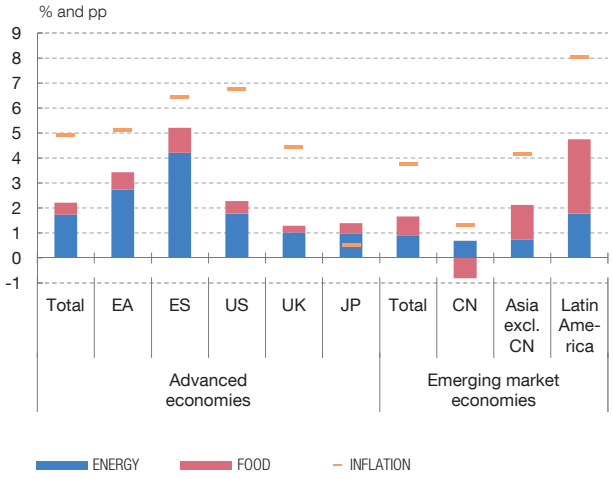
21 Specifically, the contribution of electricity to the year-on-year growth of the HICP during the current episode has amounted to 2.2 pp in Spain versus 0.7 pp in the euro area. The different share of spending on electricity explains 0.4 pp of the larger contribution in Spain, while price setting differences lie behind 1.2 pp (see Chart 3.7.2).

Chart 3.7

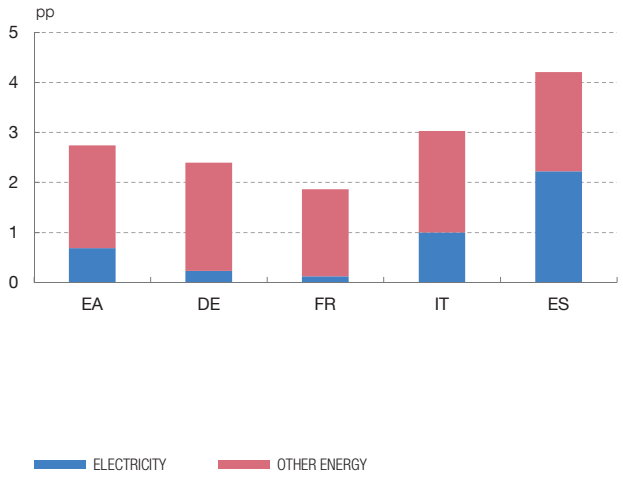
THE CONTRIBUTION OF THE ENERGY AND FOOD COMPONENTS TO INFLATION

Higher energy prices are having a greater impact on inflation in advanced economies, hitting the euro area and Spain particularly hard. Higher food prices are having a greater impact in some emerging market economies.

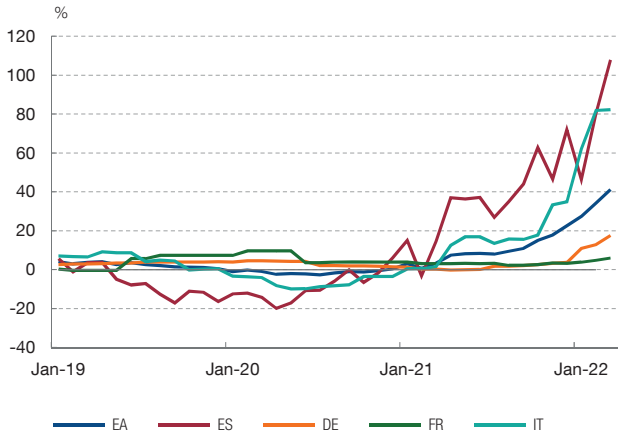
1 ENERGY AND FOOD. CONTRIBUTION TO INFLATION DURING THE MOST RECENT PERIOD (a)



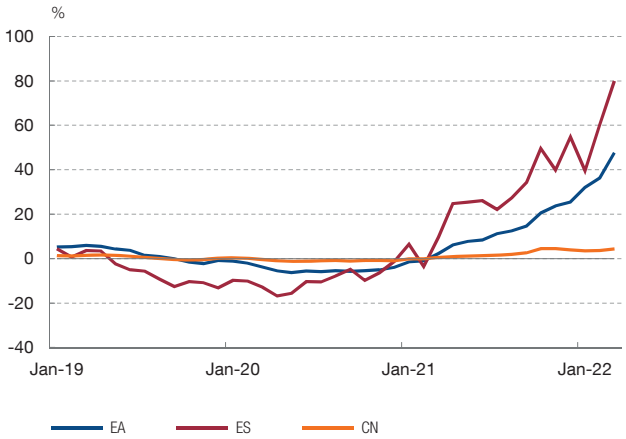
2 ELECTRICITY AND OTHER ENERGY. CONTRIBUTION TO INFLATION DURING THE MOST RECENT PERIOD (a)



3 RATES OF CHANGE OF THE ELECTRICITY COMPONENT IN THE HICP



4 RATES OF CHANGE OF THE HOUSEHOLD ENERGY COMPONENT IN THE HICP (b)



SOURCES: Eurostat, Banco de España and national statistics.

a Average inflation rate for the period September 2021-February 2022.
b In the case of the aggregate of the euro area and Spain, household energy is deemed to be COICOP subclass CP045, which includes final consumption expenditure of households on electricity, gas and other fuels (e.g. heating oil). In the case of China, given the impossibility of using a class that only includes electricity and other fuels, the subclass "Final consumption expenditure of households on water, gas, electricity and other fuels" is used. In any event, it should be noted that water is expected to account for a marginal share of this subclass.

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Second, regulatory and price-setting mechanisms are another factor behind the notable unevenness across euro area countries in the pass-through to retail prices of the higher electricity price on wholesale markets. For instance, in Spain around 40% of households opt for a dynamic pricing system, which is characterised by the high frequency of price revision. This would partly explain why wholesale market shocks feed through to retail prices quicker and more forcefully in Spain and the greater

volatility of the electricity component of inflation (see Chart 3.7.3).[22] By contrast, in countries such as France and Germany, the regulations and predominant contract types in the retail market mean that prices are revised less often.[23] Outside the euro area, it should be noted that stricter controls over some components of energy prices have meant that in some countries, such as China, the energy component's contribution to inflation has been kept well in check in recent quarters[24] (see Chart 3.7.4).

The sectoral specialisation and consumption patterns have also determined the impact of the current inflationary episode. Generally, a higher share of the most energy-intensive industries, the manufacture of food products and the sectors most vulnerable to bottlenecks[25] in the economy's sectoral structure and in household consumption has entailed greater inflationary pressures (see Chart 3.8.1). The share of contact-intensive services has also played its part. As mentioned above, the prices of these services fell relatively sharply in 2020, during the most severe stage of the health crisis, which has given rise to significant base effects in the latest inflation rates. For instance, in Spain and Italy, where these services account for a higher relative share of the economy than in the euro area overall, their contribution to the latest inflation rates is larger than that observed in other countries, such as Germany and France (see Chart 3.8.2). Meanwhile, emerging market economies – above all in Latin America – are proving particularly vulnerable to the rise in food prices, given the larger share of these products in their consumption basket and the escalating prices of some agricultural commodities in 2021 and as a result of Russia's invasion of Ukraine.

3.3 The spread of inflationary pressures

While energy and food continue to explain most of the current inflation rates, in recent quarters the rise in prices has gradually spread to other consumer items. In March 2022 the most volatile components of consumer prices – energy and food – remained the main factors behind the high inflation rates (see Chart 3.9.1). In particular, in the euro area and in Spain, these items explained 73% and 80%, respectively, of the year-on-year price growth. However, underlying inflation has also gradually accelerated in recent quarters (see Chart 3.9.2). While this process has been particularly intense in the United States (where underlying inflation stood at 6.5% in March), it has also recently reached all-time highs of close to 3% in both the euro area and Spain – a record for the former and the highest value observed in

22 See Pacce, Sánchez and Suárez-Varela (2021).

23 In Italy, new legislation – in force since 2021 – entitles all consumers who have smart electricity meters to enter into dynamic pricing contracts. This system, which more closely resembles the Spanish one, could have contributed to increasing the volatility of the electricity component of inflation in Italy in recent months.

24 In the case of China, regulations mainly focus on containing some components of household energy consumption (electricity, gas and heating fuel).

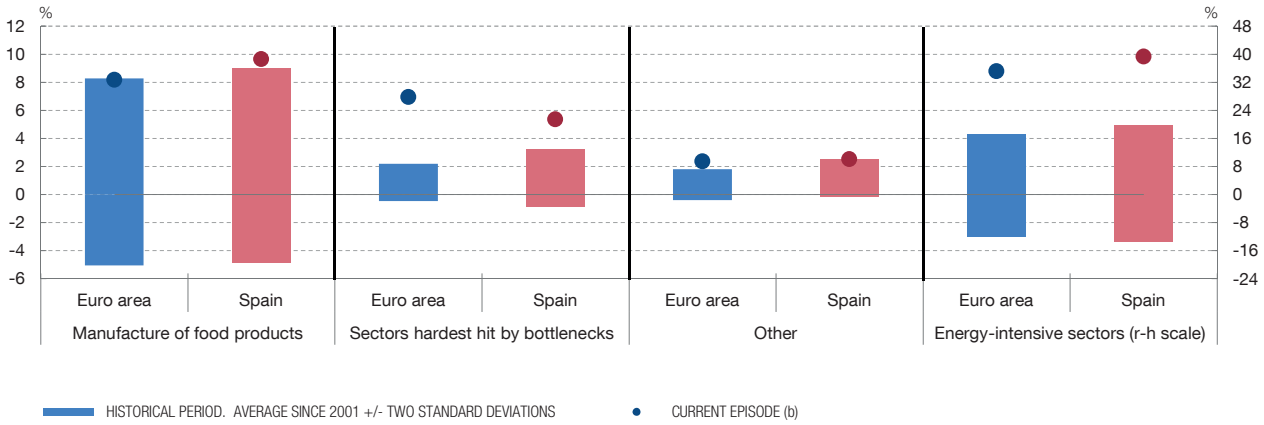
25 According to surveys, these are the sectors that have faced more severe input supply shortages or that are more reliant on the transportation sector for their production processes.

Chart 3.8

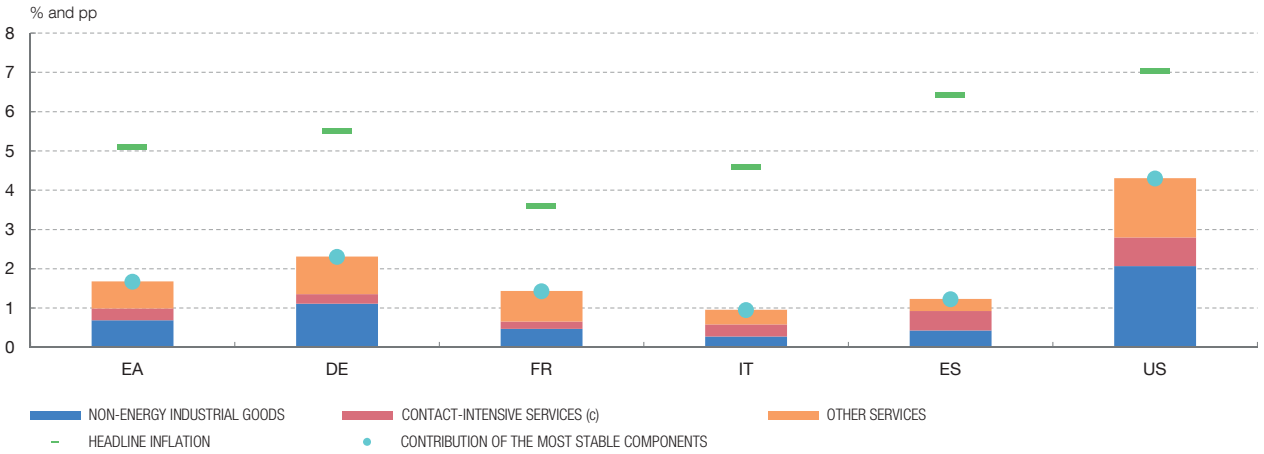
THE IMPORTANCE OF THE SECTORAL SPECIALISATION AND CONSUMPTION PATTERNS

The sectoral specialisation and consumption patterns of each economy have also affected the impact of the current inflationary episode worldwide.

1 PRODUCTION PRICES BY EURO AREA MANUFACTURING SECTOR (a)
YEAR-ON-YEAR RATES OF CHANGE



2 AVERAGE INFLATION DURING THE MOST RECENT PERIOD (b)
CONTRIBUTION OF THE MOST STABLE COMPONENTS



SOURCES: ECB, Eurostat, Banco de España and national statistics.

a A sector is deemed to be among the hardest hit by the bottlenecks if in October 2021 more than 40% of its firms reported shortages of supplies or equipment in the euro area according to the European Commission's survey, or if its production process is heavily reliant on the transportation sector. Energy-intensive sectors include the manufacture of refined petroleum products, the manufacture of chemicals, the manufacture of non-metallic mineral products and the manufacture of basic metals. The classification of the sectors is the same in Spain.
b Average for the period September 2021-March 2022.
c Contact-intensive services include recreation and culture, hospitality and, in the case of euro area countries, package holidays.

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the latter since July 2006. Other measures of inflation, which attempt to proxy the latent and more stable pressures on prices, also show a clear upward trend that appears to have accelerated in recent months (see Chart 3.9.3 for the euro area).

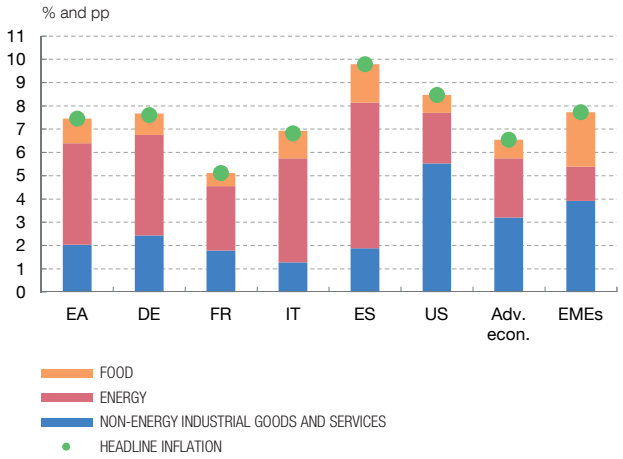
The percentage of goods and services recording inflation rates above 2% has increased significantly since last summer. Specifically, the proportion of the

Chart 3.9

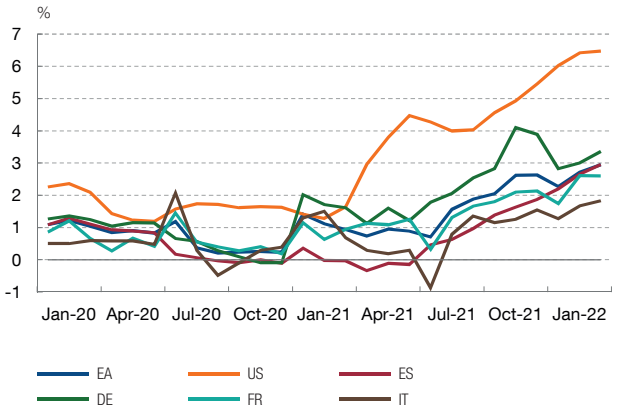
INFLATIONARY PRESSURES ARE PARTICULARLY WIDESPREAD ACROSS COMPONENTS

Unlike in other previous inflationary episodes, inflationary pressures have gradually spread to several components of the consumption basket.

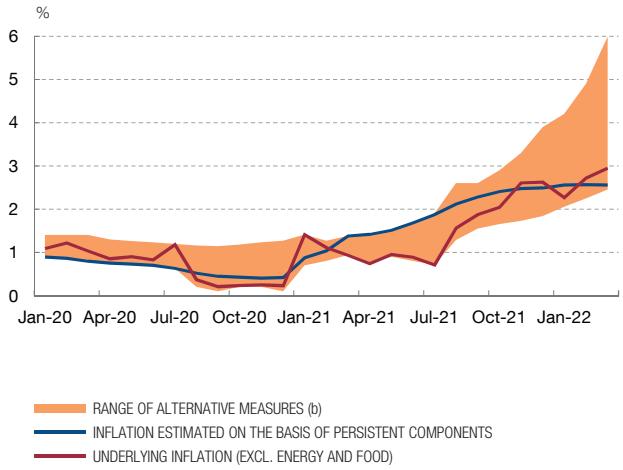
1 INFLATION RATE IN MARCH 2022 AND CONTRIBUTION OF COMPONENTS (a)



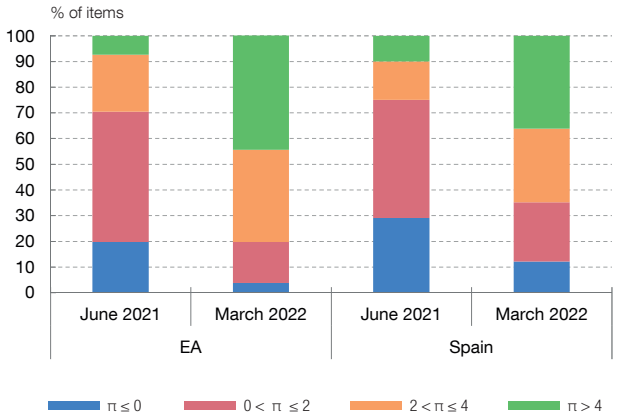
2 HEADLINE INFLATION EXCL. ENERGY AND FOOD



3 EURO AREA. MOST STABLE ALTERNATIVE MEASURES OF LATENT INFLATIONARY PRESSURES



4 DISTRIBUTION OF THE HICP ITEMS BY RATE OF CHANGE OF THEIR INFLATION RATE



SOURCES: ECB, Eurostat and Banco de España.

a February 2022 for emerging market economies.

b The range of indicators includes: underlying inflation (headline inflation excl. energy and food), inflation estimated on the basis of the persistent components of inflation obtained using regime change models (see Leiva-León, Le Bihan and Pacce (2022)), underlying inflation excluding tourism and clothing, the 10% and 30% trimmed means (taking into account the HICP item breakdown), the persistent and common component of inflation and supercore inflation.

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items[26] in euro area households' typical consumption basket with inflation rates of over 2% has risen from somewhat less than 30% in June 2021 to 80% in March 2022 (see Chart 3.9.4). In the same period this percentage has increased from 25% to 65% in the Spanish economy.

26 A breakdown with 88 headings matching the three-digit Classification of Individual Consumption by Purpose (COICOP) developed by the United Nations Statistics Division is used.

While inflation rates have been affected by base effects, the price level of some goods and services has risen significantly since the onset of the pandemic. In 2021 inflation rates were pushed upwards by the base effects associated with the moderation of, and even the fall in, the prices of some goods and services in 2020 (see Chart 3.10.1).[27] In quantitative terms, these effects played a more important role in the increase in inflation in the euro area than in the United States last year. In Spain, these base effects – related above all to the anomalous behaviour of tourism services prices in summer 2020 – lay behind more than 50% of the rise in underlying inflation in 2021.[28] Nevertheless, ignoring these technical and relatively mechanical aspects (which since early 2022 are now less relevant to explaining the behaviour of inflation rates), the price levels of some goods and services have increased significantly since the onset of the pandemic. Between before the pandemic broke out and March 2022 – i.e. in a period of over two years – in the Spanish economy the overall level of consumer prices rose by around 10%, compared with 8% in the case of the euro area and 11% in that of the United States (see Chart 3.3.1). These developments have been highly influenced by energy and food, whose prices have risen by 58% and 8%, respectively, in Spain in the same period (see Chart 3.3.3). By contrast, the prices of non-energy industrial goods and of services have grown at lower cumulative rates of 3.7% and 3.1%, respectively (see Chart 3.3.4).

Inflation volatility is also proving to be relatively high. In both the euro area and the United States, inflation was more volatile in 2021 than during the recovery phase following the European sovereign debt crisis (see Chart 3.10.2).[29] Inflation's higher volatility – which seems to partly be the result of the greater severity of the current shocks to the economy – poses a further challenge in agents' decision-making, as it complicates the task of assessing which aspects of the price dynamics are relatively persistent and which are more transitory (see Section 4).

Medium and long-term inflation expectations have also risen. There are different ways of quantifying changes in inflation expectations. First, the surveys conducted with professional forecasters or consumers themselves. In the case of the euro area, these surveys show that economic agents have been revising upwards the price growth rate expected in coming years (see Chart 3.10.3). In particular, the five-year inflation expectations of the professional forecasters surveyed by the ECB have risen from 1.66% in early 2020 to 2.05% at the beginning of April 2022. For their part, in the United States the professional forecasters who respond to the Federal Reserve Bank of Philadelphia's survey have revised upwards their future inflation expectations more substantially and, in their latest estimation, they expect it to stand at around 3% on

27 The base effect in a given month is calculated as the difference between the month-on-month change in prices in the same month of the previous year and the average for this month-on-month change over the last five years.

28 The contribution of the base effects to inflation in 2021 was somewhat larger in Germany, partly as a result of the temporary VAT rate cut adopted in Germany in 2020 H2.

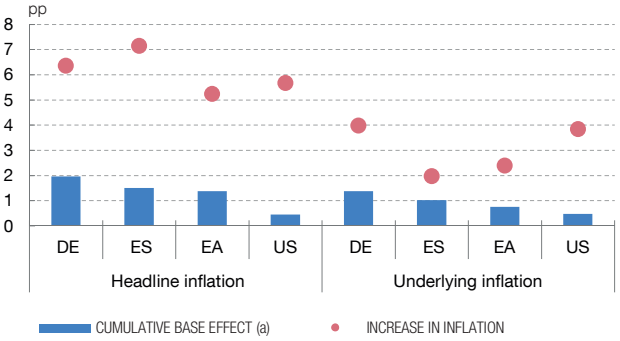
29 The statistical breakdown of inflation uses an unobserved components model with stochastic volatility. For further details on the model and its application to 12 euro area countries, see Correa-López, Pacce and Schlepper (2019).

Chart 3.10

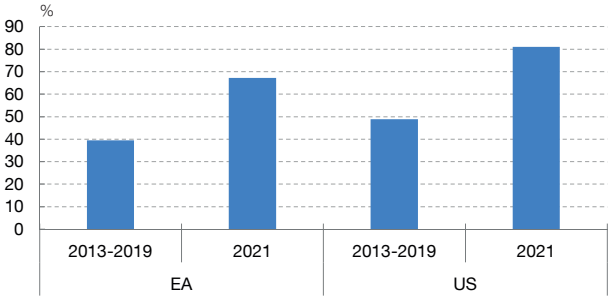
THE INCREASE IN LONG-TERM INFLATION EXPECTATIONS IN THE EURO AREA AND THE UNITED STATES

Base effects, initially, and higher inflation volatility are affecting the inflationary episode. Against this backdrop, and given the other developments, medium and long-term inflation expectations have risen in recent quarters.

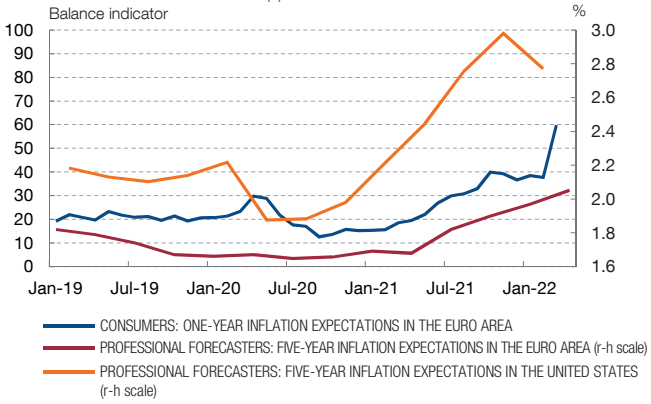
1 INCREASE IN INFLATION AND CUMULATIVE CONTRIBUTION OF MONTHLY BASE EFFECTS BETWEEN JANUARY AND DECEMBER 2021



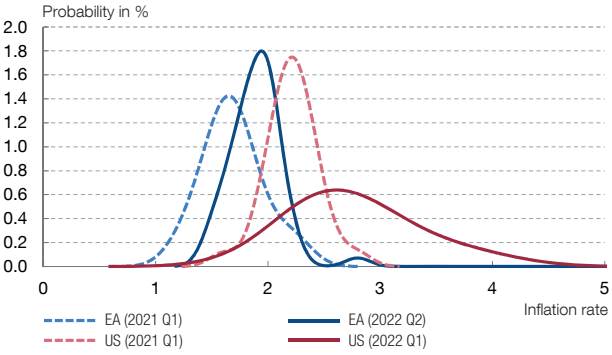
2 VOLATILITY OF UNDERLYING INFLATION RELATIVE TO HEADLINE INFLATION (b)



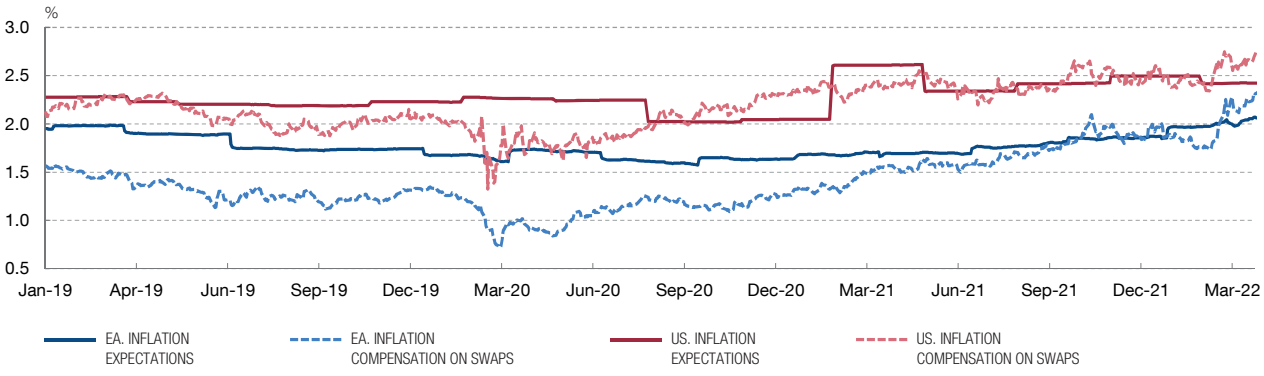
3 INFLATION EXPECTATIONS. CONSUMERS AND PROFESSIONAL FORECASTERS (c)



4 PROFESSIONAL FORECASTERS' FIVE-YEAR INFLATION EXPECTATIONS. PROBABILITY DISTRIBUTION



5 FIVE-YEAR ON FIVE-YEAR FORWARD INFLATION EXPECTATIONS DERIVED FROM THE INFLATION SWAPS MARKET (d)



SOURCES: ECB, European Commission, Federal Reserve Bank of Philadelphia and Banco de España.

a The base effect in a given month is calculated as the difference between the month-on-month change in prices in the same month of the previous year and the average for this month-on-month change over the last five years.

b Inflation volatility is calculated in a model that breaks inflation down into a temporary but persistent component, a trend component and a residual component. The latter is modelled using a stochastic volatility process and proxies the magnitude of the inflation shocks in the periods analysed. For more details, see Correa-López, Pacce and Schlepper (2019).

c The consumer expectations index (l-h scale) reflects the net balance of qualitative positive and negative responses regarding price developments for the next twelve months to the European Commission's monthly survey. The professional forecasters' expectations (r-h scale) are calculated as the average five-year inflation forecasts made by the forecasters surveyed quarterly by the ECB and the Federal Reserve Bank of Philadelphia. Latest data available: euro area (April 2022) and United States (February 2022).

d Five-year on five-year forward inflation compensation, daily data to 20 April 2022, Bloomberg. The compensation for inflation priced into inflation swaps is, for each horizon, broken down into the sum of the inflation expectations and the risk premium by term, using a model that estimates the term structure of inflation using daily data on inflation swaps at several time horizons (for the euro area or for the United States), monthly HICP data for the euro area (CPI for the United States) and quarterly data on one, two and five-year inflation expectations from the Survey of Professional Forecasters conducted by the ECB (Federal Reserve Bank of Philadelphia in the United States). See Gimeno and Ortega (2022).

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average in five years. In addition, both in the United States and in the euro area, the distribution of the professional forecasters' expectations has gradually shifted to higher inflation levels, with the dispersion widening significantly in the United States (see Chart 3.10.4). Second, agents' inflation expectations can also be deduced from different financial products traded on international capital markets. In this case it is important to consider the risk premium priced into these products.[30] In this regard, financial market-implied medium-term inflation expectations have risen, both for the euro area and for the United States (see Chart 3.10.5). These expectations remain anchored to the ECB's medium-term inflation target of 2% (for more details on the implications of these dynamics for monetary policy, see Section 4.2.4).

4 Potential determinants of the persistence of the inflationary episode

After the persistent upward surprises to price dynamics over the course of 2021, the war in Ukraine has triggered a further upward revision to the short-term inflation forecasts. In 2021 analysts were surprised by the intensity of the inflationary episode and had to revise upwards their price growth rate forecast on several occasions. For instance, at end-2020, analysts expected that, on average, inflation would stand at 2.0% in the United States, 0.9% in the euro area and 0.6% in Spain in 2021. These rates were far removed from those that were ultimately observed (4.7%, 2.6% and 3.0%, respectively). More recently, Russia's invasion of Ukraine has triggered a fresh sharp upward revision to analysts' short-term inflation projections, above all as a result of the stronger pressures expected on commodity prices and of a possible exacerbation of global production chain bottlenecks (see Chart 3.11.1).

Despite stronger inflationary pressures in the short term, analysts continue to expect that inflation rates will ease in the medium term. A sharp drop in inflation is expected worldwide in 2023 (see Chart 3.11.1). This decline will be particularly steep in the euro area and, especially, in the Spanish economy. These forecasts are consistent with developments in energy commodity futures prices (see Chart 3.11.2) and with the expectation that the current supply-demand imbalances will gradually dissipate in the coming months (see Chart 3.11.3).

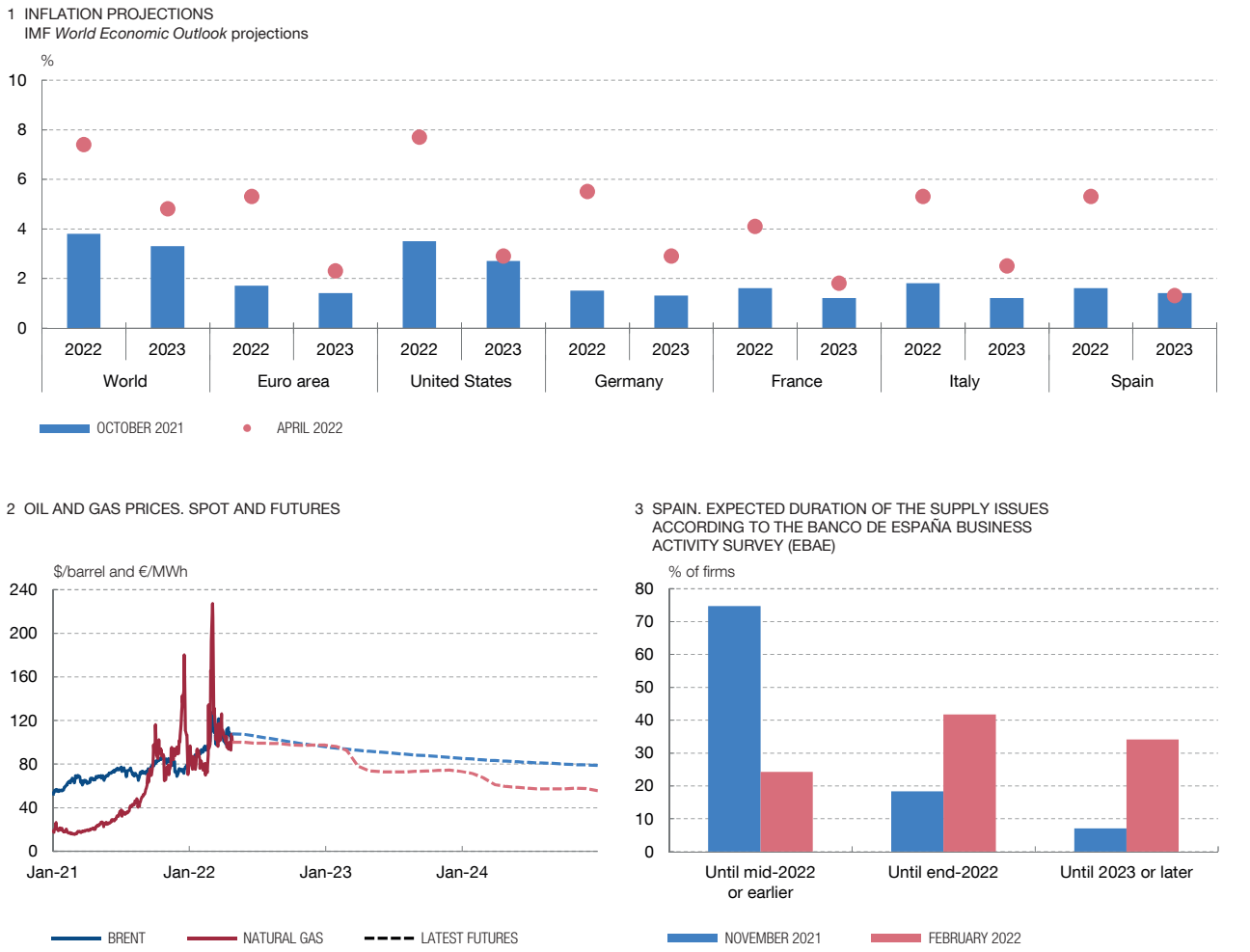
In any event, these forecasts are subject to considerable uncertainty. Undoubtedly, price dynamics in coming quarters will hinge decisively on the magnitude and the persistence of the disruptions that the war in Ukraine may entail for economic activity, commodity prices and global production chain bottlenecks overall. However, other factors may also significantly determine the persistence of the current inflationary episode. Particularly prominent among these factors are the indirect and second-round

30 The compensation for inflation priced into inflation swaps is, for each horizon, the sum of the inflation expectations and the risk premium by term (see Gimeno and Ortega (2022)).

Chart 3.11

REVISION OF SHORT-TERM INFLATION PROJECTIONS

Despite the significant upward revision to short-term inflation projections due to the war in Ukraine, analysts expect the current strong inflationary pressures to dissipate in the medium term, in step with the moderation of energy price futures and the impact of the bottlenecks.



SOURCES: Bloomberg, IMF (*World Economic Outlook*), Eurostat, Refinitiv and Banco de España.

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effects on inflation that may stem from the latest price increases (see Section 4.1), the economic policy response and the agreements between social partners against a very complex geopolitical and macro-financial backdrop (see Section 4.2) and developments in some relatively structural aspects (see Section 4.3).

4.1 Indirect and second-round effects on inflation

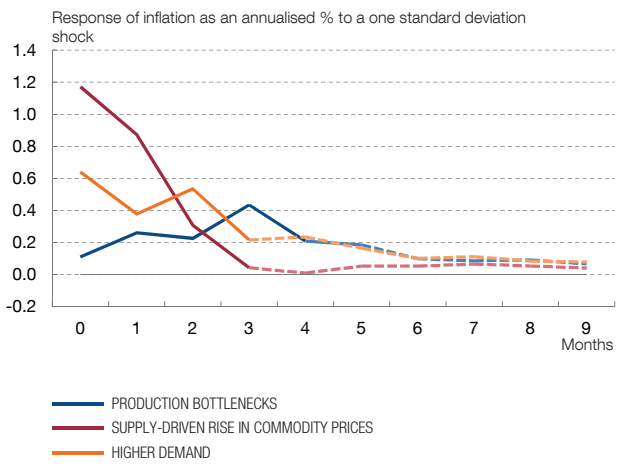
The rises that have already been observed in the prices of many goods and services could trigger further inflationary pressures in the future via indirect effects. By way of illustration, a transitory increase in oil prices may affect the inflation of consumer prices through two channels. First, a direct effect would arise

Chart 3.12

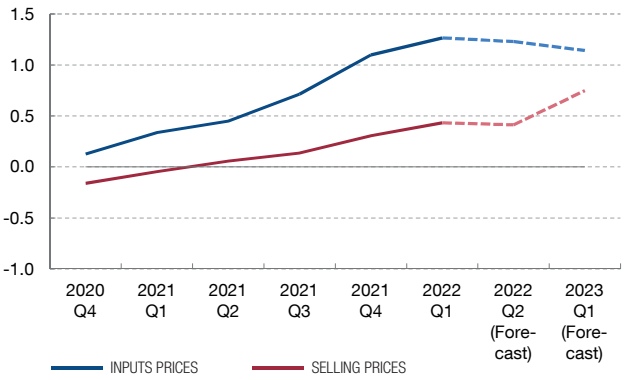
THE PERSISTENCE OF THE RISE IN INFLATION

The shocks that are affecting the economy have inertia, which has a bearing on the persistence of their impact on inflation.

1 RESPONSE OF INFLATION TO DIFFERENT SHOCKS (a)



2 PRICES IN SPAIN ACCORDING TO THE BANCO DE ESPAÑA BUSINESS ACTIVITY SURVEY (EBAE) (b)
Observed data and forecasts from the latest survey



SOURCE: Banco de España.

a The chart depicts the response of euro area inflation to an oil price (red), bottleneck (blue) and demand (orange) shock identified in a structural vector autoregressive model, as detailed in Chart 3.6. The dotted lines denote responses that are not statistically significant.

b Index constructed by assigning the following values to firms' qualitative responses: significant increase = 2; slight increase = 1; unchanged = 0; slight decrease = –1; significant decrease = –2.

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insofar as the shock to oil prices is passed through to the related products of this input consumed by households, such as heating and vehicle fuels. This pass-through is typically very quick.[31] Second, an indirect effect would be triggered insofar as crude and its related products are used as an input in different production processes. In this regard, higher costs for the productive sectors that use these inputs may lead to an increase in the final price of their products. These indirect effects typically materialise more slowly than the direct effects, and how forcefully they are passed through depends on the magnitude of the initial shock and its duration. The longer the shock, the likelier it is that significant indirect effects materialise.

Some indirect effects associated with the current inflationary episode have not yet fully materialised. Available empirical estimates show that, in the event of a temporary rise in commodity prices, aggregate demand or the severity of production bottlenecks, the response of consumer price inflation persists somewhat and extends over several months (see Chart 3.12.1). In a similar vein, several surveys suggest that, in the coming months business owners will pass on to their customers a portion of the higher prices that they have already borne on many of their inputs in recent quarters (see Chart 3.12.2 for the case of Spain).

31 See Álvarez, Sánchez and Urtasun (2017).

How long the price dynamics persist will also depend on the intensity of the potential second-round effects. The economic literature defines second-round effects as those stemming from changes in agents' expectation formation processes. These effects could emerge if, as a result of an increase in inflation rates, employees were to demand higher wages, which, in turn, would raise firms' labour costs and generate fresh upward pressures on prices. On the latest evidence, significant second-round effects are not materialising. Indeed, the latest data on wage settlements in Spain and the euro area point to employees bearing a considerable loss of purchasing power in recent quarters (see Chart 3.13.1). This limited pass-through of prices to wages would partly be the result of the scant prevalence of indexation clauses. In particular, in 2021, the percentage of private-sector employees covered by these types of clauses in the euro area and in the Spanish economy was the lowest in recent decades (see Chart 3.13.2).

The longer persistence of the inflationary shock makes it more likely that second-round effects will materialise. In this regard, in 2021 H2, the percentage of collective agreements signed in Spain which provided for wage increases of over 3% grew appreciably (see Chart 3.13.3). In early 2022, a greater prevalence of indexation clauses – which update minimum wage rates if past inflation exceeds a certain level – was observed in sectoral collective agreements. This represents a risk of the current inflationary pressures spreading (see Chart 3.13.4).[32]

These second-round effects would be likelier to emerge and more acute were the medium-term inflation expectations to become de-anchored. An episode of persistently high inflation could trigger an upward revision of agents' expectations for the future price growth rate. This process would induce further inflationary pressures in the short term – for example, through greater wage demands – and would therefore prolong the episode. In some instances, this revision of the medium-term inflation expectations could even place them above the central bank's inflation target. This would be a case of agents' expectations becoming "misaligned" or "de-anchored".

The sensitivity of future inflation expectations to current inflation is crucial to assessing the risk of agents' expectations becoming de-anchored and the persistence of a transitory inflationary shock. The greater this sensitivity, the greater the likelihood of second-round effects between prices and wages emerging (see Chart 3.13.6), of inflation expectations becoming de-anchored and of the cost of the current inflationary episode in terms of employment and GDP increasing (see Chart 3.13.7). However, while the sensitivity of long-term inflation expectations to current inflation decreased significantly in the euro area between 2005 and 2021, it

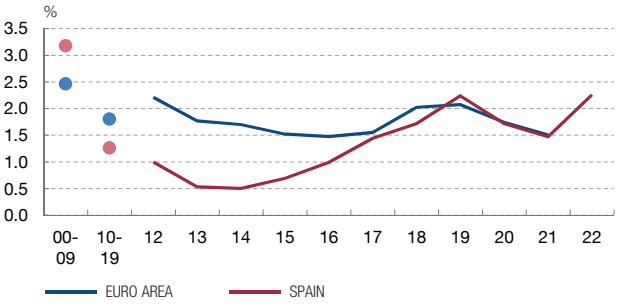
32 Indeed, recent Banco de España research indicates that in a year of high inflation such as 1993, around 40% of employees covered by a collective agreement containing an indexation clause saw their wages grow as a result of the increase in the minimum wage rate (see Adamopoulou, Díez-Catalán and Villanueva (2022)).

Chart 3.13

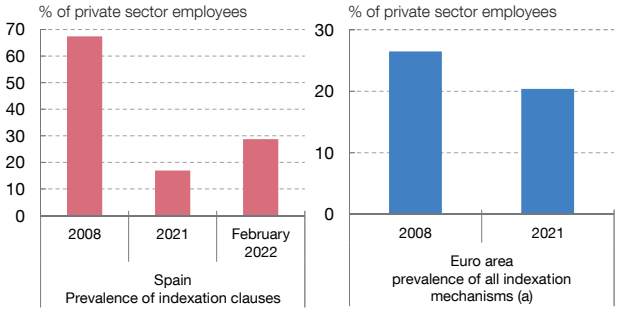
THE WAGE RESPONSE

The wage response will depend on wage indexation and revisions to inflation expectations, mechanisms that have become less prevalent and less sensitive to current inflation, respectively, in recent years. In any event, the increase in inflation may affect the wage distribution through collective bargaining.

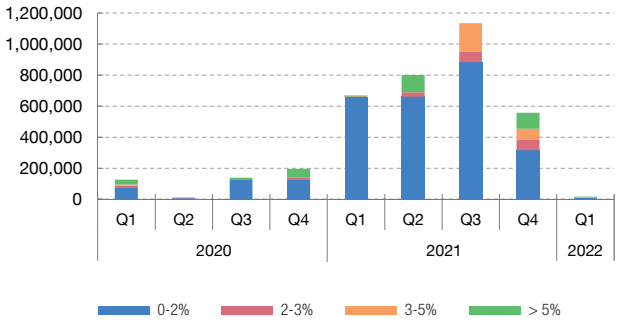
1 NEGOTIATED WAGE RATES. Y-O-Y CHANGE



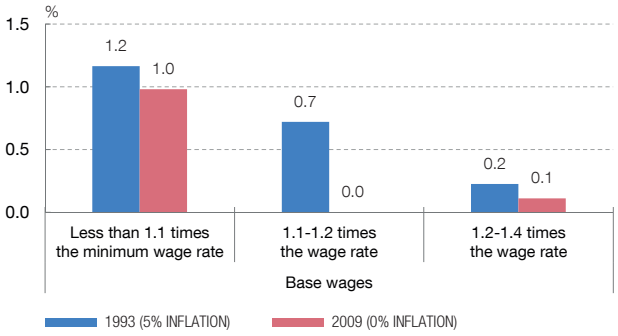
2 PREVALENCE OF WAGE INDEXATION IN SPAIN AND THE EURO AREA



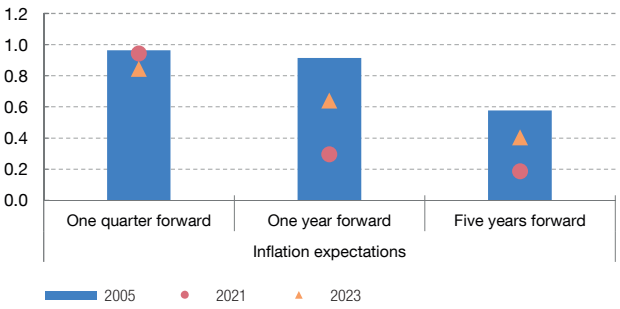
3 SPAIN. NUMBER OF EMPLOYEES COVERED BY COLLECTIVE AGREEMENTS SIGNED IN EACH QUARTER. BY NEGOTIATED WAGE INCREASE FOR 2022



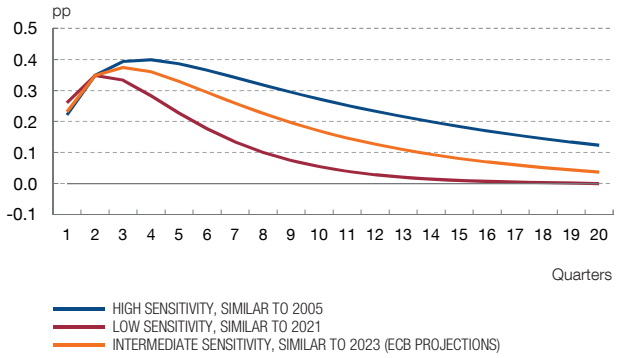
4 SPAIN. WAGE ELASTICITY TO A PERCENTAGE INCREMENT IN NEGOTIATED WAGE RATES (b)



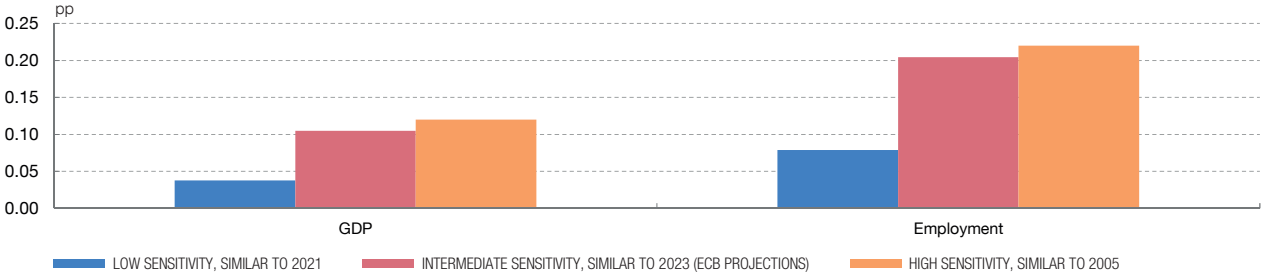
5 EURO AREA. SENSITIVITY OF INFLATION EXPECTATIONS TO RECENT INFLATION (c)



6 EURO AREA. WAGE RESPONSE TO AN INCREASE IN INFLATION UNDER DIFFERENT INFLATION EXPECTATION SENSITIVITY SCENARIOS (c) (d)



7 EURO AREA. CUMULATIVE LOSS OF EMPLOYMENT AND GDP AFTER ONE YEAR DUE TO AN INCREASE IN INFLATION UNDER DIFFERENT INFLATION EXPECTATION SENSITIVITY SCENARIOS (c) (d)



SOURCES: Eurostat, ECB and Banco de España.

a For a detailed description of the euro area data, see Koester and Grapow (2021).
b See Adamopoulou, Díez-Catalán and Villanueva (2022).
c The calculations for 2023 are based on the ECB Staff Macroeconomic Projection Exercise of March 2022.
d Calculated using the model developed by Aguilar and Vázquez (2021).

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is likely to increase again should the current inflationary episode persist (see Chart 3.13.5).[33]

4.2 The economic policy response and the role of an incomes agreement

The current inflationary episode amounts to an adverse shock to the terms of trade of Spain and the main euro area countries, which are net importers of energy and other commodities. Indeed, in recent quarters import prices for energy and many other commodities have risen far faster than the prices of the goods and services that Spain and the euro area export. For these economies, this has meant reduced international purchasing power (see Chart 3.14.1) and, consequently, a relative impoverishment that diminishes household disposable income and corporate earnings.

Against this background, it is vital that significant indirect and second-round effects be avoided. As Chart 3.13.7 shows, an adverse shock to terms of trade has a greater impact on GDP and employment when such effects materialise. Were these to spread throughout the euro area, a more aggressive normalisation of the ECB's monetary policy would be required to ensure fulfilment of its price stability mandate. To reduce the likelihood of this scenario, an economy-wide incomes agreement (see Section 4.2.1) would be desirable; one that results in a fair distribution of the inevitable income losses that sharp commodity price inflation entails for commodity-importing countries (both energy and non-energy commodities). Domestic, European and monetary policies (see Sections 4.2.2, 4.2.3 and 4.2.4, respectively) would also have a crucial role to play in response to this shock.

4.2.1 An incomes agreement

An incomes agreement between social partners would help avoid a spiral of price and cost increases which would only exacerbate the harmful effects of the current shock.[34] Under such an arrangement, firms and employees would agree to share the inevitable loss of income in the national economy that higher commodity import prices entail. In particular, in the present circumstances, employees will not be able to maintain their purchasing power in the short term and nor will firms be able to maintain their profit margins. Were employees to bear the full brunt of the adjustment, firms would likewise end up adversely affected through a sharp drop in demand. Conversely, if the full burden of the adjustment were placed on firms, many of them would be forced to close and many others would experience significant losses in competitiveness, affecting their future investment capacity. All of this would ultimately undermine job creation and the general public's well-being.

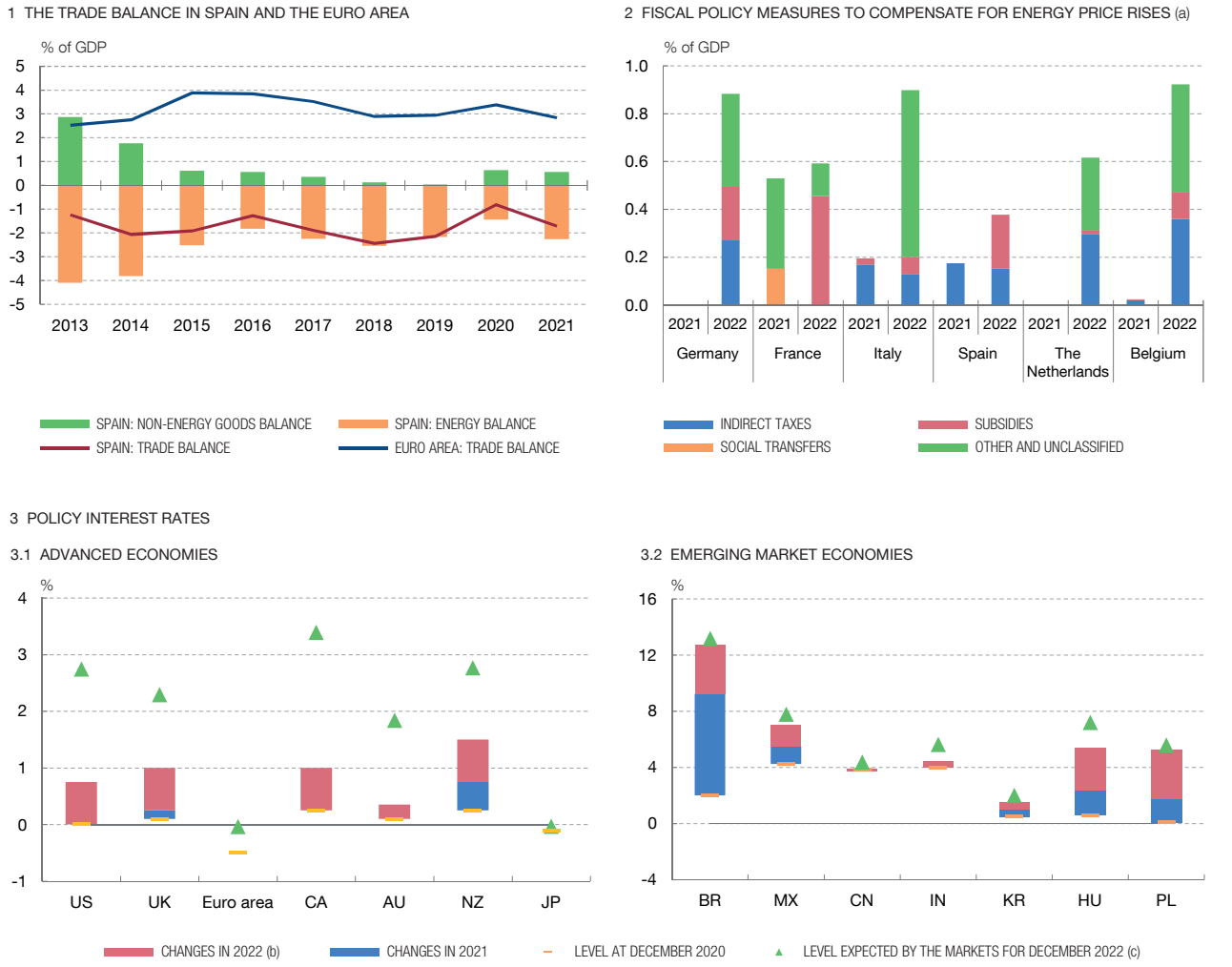
33 See Banco de España (2019) and Aguilar (2020).

34 See Hernández de Cos (2022).

Chart 3.14

THE ECONOMIC POLICY RESPONSE

The terms of foreign trade for net energy-importing economies, such as the euro area and Spain, have deteriorated. Countries have begun to adopt fiscal measures to mitigate the economic effects, while the monetary policy stance has been adjusted to keep the medium-term inflation outlook anchored to the target.



SOURCES: INE, national central banks and Banco de España.

a Measures approved or announced to mid-March 2022. Unclassified measures are those for which a breakdown is not available and also include losses stemming from price caps for State-owned electric utilities.
b Includes changes to policy rates adopted before 13 May 2022.
c Based on futures for the interbank overnight rate, interest rate swaps and the OIS rate for the euro area, in April 2022.

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The asymmetric impact of the current shocks on workers, firms and sectors must be considered when determining the specific features of the incomes agreement. Given that asymmetry, the necessary coordination at national level must be combined with mechanisms to adapt the agreement to the existing productivity and activity-related differences across firms and sectors. Equally, where the standard of living of certain segments of households is hit particularly hard by rising energy costs, the incomes agreement should naturally seek to mitigate their straitened circumstances. In short, these considerations suggest that

a potential incomes agreement should avoid overly sweeping measures that might prove too rigid for certain groups of agents.

It would also be desirable to avoid arrangements that automatically link wages to past inflation or indexation clauses. The aim is precisely to reduce the risk of triggering a wage-price feedback loop. Admittedly, workers with collective agreements registered up to March of this year that provide for any form of indexation clause linking the final wage increases agreed in 2022 to developments in inflation are in the minority. Nonetheless, the figure (30%) is notably higher than it was at the end of 2021 (17%). More concerning still is the fact that this figure rises to 50% for agreements entering into force in 2023, although the number of such agreements remains low.

The incomes agreement should include multi-year commitments relating both to wage increases and to job protection. In a context as uncertain as the current one, such commitments would afford households and firms considerable certainty for their spending and investment decisions. Within this multi-year horizon, the nominal benchmarks for wage bargaining should exclude components associated with energy products and should be based on the projected trend in underlying inflation. These recommendations would apply both to the benchmarks used for setting wage increases and, if agreed, to possible wage guarantee clauses. These types of practices have been used in the past by social partners and have proved to be useful in sustaining employment and reducing unemployment, boosting Spanish firms' competitiveness and fostering economic growth.

These wage guidelines should be accompanied by explicit profit margin moderation commitments. This is the only way to ensure that the wage moderation is effectively passed through to business competitiveness, while limiting the pass-through of rising energy input costs to other goods and services. Some sort of mechanism should be devised to ensure that this moderation of margins is verifiable.

4.2.2 Domestic fiscal policies

The fiscal policy response is key to mitigating the effects of the current adverse shock on the hardest-hit households and firms, while simultaneously preventing its persistence over the medium term. With this dual aim, the fiscal policy response should focus on temporary compensation measures targeting the most vulnerable households and firms. Likewise, averting any feedback into the current inflationary process is a further reason to avoid an across-the-board fiscal impulse and the widespread use of automatic indexation clauses in expenditure items.

In recent months, the authorities of various countries have responded in this direction (see Chart 3.14.2). In Europe, several countries have reduced electricity charges and taxes, and have launched transfer programmes focused on the most

vulnerable households.[35] In some cases, these measures have included electricity price freezes or subsidies to electricity companies to compensate for the increase in their costs. Likewise, some recent interventions have aimed to compensate households and hauliers for rising fuel prices, whether through direct subsidies for fuel purchases (France), tax cuts (Italy) or subsidies for the use of public transport (Germany).

In Spain, several measures were approved over the course of 2021 to reduce the electricity tax burden and to protect the most vulnerable consumers.[36] For example, the period during which electricity supply cannot be disconnected was extended and social rebates on electricity bills were increased. In addition, it was established that a portion of the unbudgeted tax revenue from the ETS and the tax revenue from windfall remuneration of non-CO_2-emitting power plants in the wholesale market would be earmarked to cover electricity system charges.

More recently, the National Plan to respond to the economic and social consequences of the war in Ukraine was approved.[37] Among other measures, the plan includes direct grants to firms in the hardest-hit sectors, such as electricity/gas-intensive industry, transportation, agriculture and fishing. Also included are a temporary general rebate on fuel purchases, incentives for using renewable energy, a new €10 billion State guarantee facility and specific measures to protect the most vulnerable workers and groups. In addition, at the European Council meeting held on 24-25 March, the Member States were called on to apply emergency temporary measures to contain electricity prices. The Iberian exception – in terms of the Iberian Peninsula's interconnection with the rest of the EU being less than 3% – was also acknowledged at that meeting. This has recently enabled Spain and Portugal to reach an agreement with the European Commission for a temporary (12-month) mechanism to cap the price of gas and lower that of electricity.[38]

4.2.3 European policies

The recent surge in commodity prices and the war in Ukraine warrant coordinated European action. As discussed in Chapter 2 of this report, the invasion of Ukraine and the severe sanctions imposed on Russia by the international community will have highly uneven effects on European economies depending on the exposure of their exports and imports. In addition, despite the common elements in the design of the European electricity market, there is considerable disparity across the European economies in both their energy mix and the geographical source of their imported oil and gas. In these

35 The initial measures were introduced in 2021 Q4 and were expected to remain in force until 2022 Q1. However, persistent inflation has resulted in these measures being extended and others introduced, most of which will run until end-2022.

36 See Royal Decree-Law 12/2021 of 24 June 2021, Royal Decree-Law 17/2021 of 14 September 2021, Royal Decree-Law 23/2021 of 26 October 2021 and Royal Decree-Law 29/2021 of 21 December 2021 (all available in Spanish only).

37 See Royal Decree-Law 6/2022 of 29 March 2022 (available in Spanish only).

38 Not enough is known about this mechanism at the cut-off date for this report to accurately assess its implications on multiple fronts.

circumstances, the optimal response should combine, first, various domestic measures to mitigate the short-term adverse economic effects of these shocks on the most vulnerable groups and, second, European policies with a medium-term outlook to increase the EU's strategic autonomy in key sectors and accelerate the energy transition. Further, against a background of reduced budgetary space at the national level, the pooling of budgetary resources to jointly fund the increase in public expenditure prompted by this new exogenous shock would be the most effective means of fending off a persistent deterioration in the economic outlook, while simultaneously eliminating a new potential source of financial fragmentation in Europe.

To coordinate European actions in the energy arena and to reduce reliance on Russia, the European Commission has proposed its REPowerEU plan, which aims to cut European demand for Russian gas by 60% by the end of 2022. There are two main pillars to this initiative.[39] First, diversifying gas supplies by increasing imports from non-Russian suppliers, in particular liquefied natural gas. To this end, in addition to expanding capacity in the sector, the use of existing capacity (which is concentrated in certain countries such as Spain) must be maximised by investing in cross-border interconnections to eliminate the current bottlenecks.[40] Second, the plan aims to reduce the EU's reliance on fossil fuels more swiftly by accelerating the roll-out of renewables and boosting energy efficiency. In addition, the plan envisages temporarily easing the State aid framework for the business sector and establishing certain limits on retail electricity prices.

4.2.4 Monetary policy

In response to the current strong inflationary pressures, the central banks of developed economies have moved towards monetary policy normalisation (see Chart 3.14.3). For example, at its March meeting the US Federal Reserve began a cycle of interest rate hikes (raising the target range for its policy interest rate by 25 bp followed by a further increase of 50 bp in May, putting the range at 0.75%-1.0%), signalled further rises over the rest of the year and announced that it would begin reducing its holdings of Treasury securities, agency debt and mortgage-backed securities. For its part, since December 2021 the Bank of England has raised its policy interest rates by 90 bp to 1%. In the same vein, the central banks of Canada and New Zealand, which had gradually tapered their asset purchase programmes over the last few months, also recently raised their key policy rates. As for the main emerging market economies, in the early stages of 2022 all continued the cycle of monetary policy tightening that they began in 2021, save for those in Asia.

39 See European Commission (2022).

40 In addition to gas market interconnection, electricity interconnection must also be boosted. Spain and Cyprus were the only countries to fall short of the electricity interconnection target of 10% set for 2020. See European Commission (2017). Various studies have demonstrated the benefits of a more interconnected system in terms of stability and lower prices, in particular for Spain; see Deane, Ó Ciaráin and Ó Gallachóir (2017) and Abadie and Chamorro (2021).

Since late 2021, the ECB has taken various measures consistent with the gradual normalisation of its monetary policy stance. For instance, at its meeting in December 2021 the Governing Council announced that it would discontinue net asset purchases under the pandemic emergency purchase programme (PEPP) in March 2022, as well as the end in June of the special conditions applicable to the third series of targeted longer-term refinancing operations (TLTRO III). In addition, the Governing Council announced in April that it expected to end net purchases under the APP in the third quarter of this year, after shortening their duration at the March Governing Council meeting. It also indicated that the raising of key ECB interest rates would take place some time after the end of the net purchases under the APP.

In a particularly uncertain context, the ECB has emphasised that its monetary policy decisions will be based on developments in economic indicators. One key determinant of the ECB's response is the medium-term orientation in the formulation of its price stability objective, which is the key guidance for correctly anchoring economic agents' expectations.

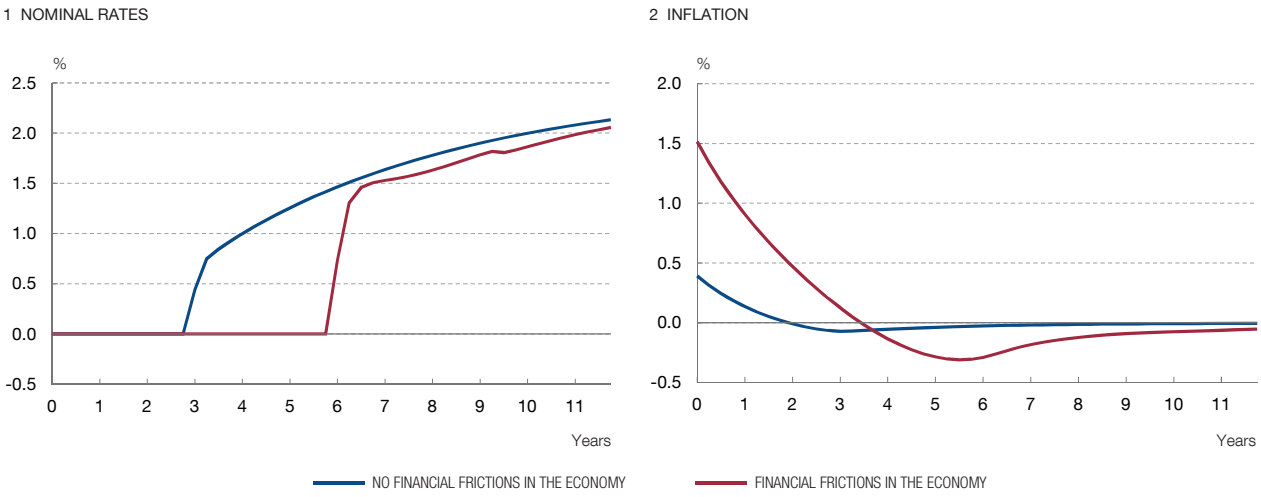
The ECB has also reiterated that, in the current setting, its monetary policy response will be gradual and will retain all the optionality and flexibility that its various instruments allow. In particular, at its April meeting the ECB Governing Council explicitly stated that it would keep its options open and maintain flexibility in the conduct of monetary policy, taking whatever action was needed to fulfil its price stability mandate and to contribute to safeguarding financial stability. The pandemic has shown that, under stressed conditions, flexibility in the design and conduct of asset purchases has helped to counter the impaired transmission of monetary policy and made the ECB's efforts to achieve its goal more effective. Within its mandate, the ECB has indicated that, under stressed conditions, flexibility would remain an element of monetary policy whenever threats to monetary policy transmission jeopardise the attainment of price stability. In this regard, the ECB announced that reinvestment under the PEPP, the horizon of which extends to end-2024, would be adjusted flexibly across time, jurisdictions and asset classes, to contend with any pandemic-related fragmentation that might impair the transmission of monetary policy. The normalisation will also be gradual, provided that medium-term inflation expectations remain anchored around the 2% target, as they are at present, although there are preliminary signs, which will have to be monitored carefully, of those indicators being revised to above-target levels (see Chart 3.10). The latest economic literature likewise stresses the benefits of a gradual monetary policy response to a supply-side shock (see Chart 3.15).[41]

41 For instance, some authors (see Caballero and Simsek, 2022, and Guerrieri et al. (2021)) emphasise that, in times of sectoral reallocation, monetary policy should respond gradually to sporadic upturns in inflation prompted by the ensuing changes in relative prices. Meanwhile, other authors (see, among others, González et al. (2021)) have highlighted the effects of a premature tightening of monetary policy on the build-up of physical capital and, therefore, on the potential growth of economies. As Chart 3.15 illustrates, when various financial frictions that may give rise to a misallocation of productive capital are taken into account, a relatively patient monetary policy response to a supply-side shock is preferable.

Chart 3.15

THE OPTIMAL MONETARY POLICY RESPONSE TO A SUPPLY-SIDE SHOCK UNDER A THEORETICAL MODEL (a)

When interest rates are constrained by an effective lower bound, the optimal response to an adverse supply-side shock is to delay monetary policy normalisation, particularly when financial frictions affecting heterogeneous firms are considered.



SOURCE: Banco de España, using the model devised by González et al. (2021).

a The chart shows the optimal monetary policy response and inflation developments in the event of an adverse supply-side shock in an economy where the natural interest rate stands temporarily below the effective lower bound of interest rates.

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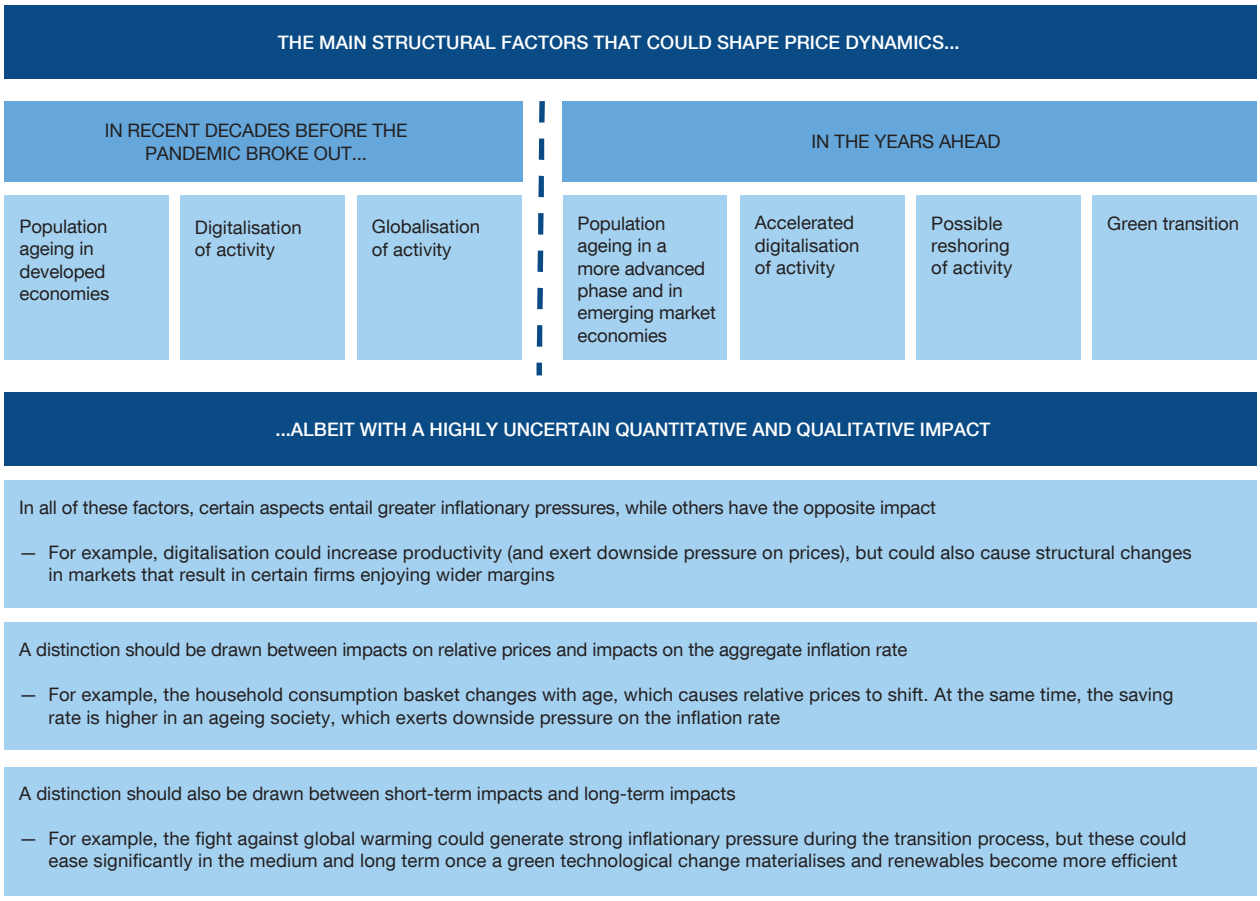
In step with the communication of this process of monetary policy normalisation, market expectations of ECB policy rate hikes have been brought forward since December. The prospect of a normalisation of the monetary policy stance has also been reflected in an upturn in long-term interest rates in the euro area. Specifically, the 10-year OIS rate, which proxies the euro area risk-free interest rate, has risen by about 170 bp since the beginning of the year.

4.3 Other structural aspects

Various structural factors could shape price dynamics in the years ahead, although the sign and scale of that influence is difficult to predict. Prominent among these are how the COVID-19 pandemic may have changed the globalisation and digitalisation of economic activity, the latest geopolitical events, recent developments in demographic trends and the green transition (see Figure 3.1).[42] In some cases, these developments could affect future inflation very differently to other similar structural changes in recent decades (see Section 2). In any event,

42 Another recent significant development for inflation relates to the new monetary policy frameworks that have emerged in the last few years, as some of the world's foremost central banks have revised their monetary policy strategy.

Figure 3.1
INFLATION: STRUCTURAL DETERMINANTS BEFORE AND AFTER THE PANDEMIC



SOURCE: Banco de España.

there is extraordinary uncertainty as to the intensity and even the direction of the potential implications of these recent developments for relative prices and for future inflation.

The COVID-19 pandemic and the geostrategic tensions could play a part in reshaping globalisation, which could increase inflationary pressures going forward. Even before the outbreak of the health crisis, a certain tendency towards the regionalisation of trade flows and value chains was already evident. The pandemic and the latest geopolitical tensions could accelerate reshoring initiatives and reinforce industrial policies that aim to incentivise the local production of certain strategic goods, all of which are likely to drive up prices.

The pandemic has also provided very significant momentum to the digitalisation and automation of economies. As discussed in Section 2, the advances in digitalisation during recent decades may have driven productivity gains and lowered

the relative prices of technological goods and services and of goods and services sold online. All of these factors appear to have exerted downside pressure on inflation. However, the links between digitalisation and price dynamics are ambiguous, since they largely depend on how the digitalisation process affects the structure and level of competition in the markets. Some recent evidence[43] shows that, partly as a result of the digitalisation process (which in some cases fosters an industrial structure characterised by high entry costs and a greater concentration and polarisation of activity), the margins and pricing power of certain firms have increased considerably in recent years, more so in the United States than in Europe. An acceleration of that digitalisation process could compound these dynamics[44] and heighten future inflationary pressures. Conversely, however, some recent papers[45] have found that this market configuration might also lead to lower price responsiveness to changes in the costs of factors of production or to global and monetary policy shocks.

The effects on inflation of population ageing are also difficult to anticipate. The aggregate level of saving tends to increase as societies age since individuals need to build up sufficient funds for their retirement. Accordingly, this process can induce downside pressure on prices. However, the price implications of population ageing may become more ambiguous as these demographic dynamics progress and older generations (which in principle no longer save and also have a very different spending profile from younger generations) make up a larger share of the population. Some papers associate older generations accounting for a larger share of the population with higher inflation.[46] They also indicate that the ageing process in emerging economies will reduce the supply of relatively cheap labour from these countries. This is likely to increase workers' wage bargaining power, even in advanced countries, which could give rise to additional inflationary pressures in the medium and long term.[47]

One structural factor that is becoming increasingly important is the energy transition. As discussed in Chapter 4 of this report, the introduction of green taxes and carbon pricing systems (a cornerstone of the current climate change mitigation policies) could significantly affect relative prices and the level of inflation.[48] These measures could also have a considerable impact on the volatility[49] and persistence

43 See De Loecker, Eeckhout and Unger (2020) for the United States and Kouvavas et al. (2021) for the euro area. Calligaris, Criscuolo and Marcolin (2018) find that mark-ups in OECD countries are higher in digitally-intensive sectors and that the mark-up differentials between digitally-intensive and less-digitally-intensive sectors have increased significantly over time.

44 Digitalisation also has important implications for the labour market, since it affects the wages of skilled and unskilled workers differently (see European Central Bank, 2021b).

45 See, for example, Kouvavas et al. (2021) and Bobeica, Ciccarelli and Vansteenkiste (2021).

46 See Aksoy et al. (2019) and Juselius and Takáts (2018).

47 See Goodhart and Pradhan (2020).

48 See, for example, Moessner (2022) and McKibbin, Konradt and Weder di Mauro (2021).

49 See Santabárbara and Suárez-Varela (2022).

of inflation. Likewise, the gradual reduction in investment in fossil fuel exploration and extraction (given its diminished appeal in terms of medium-term profitability) adversely affects energy supply and producers' responsiveness to shocks. This could strain price dynamics, at a time when, in the near term, investment in renewables is yet to reach a sufficient scale of production.[50] However, over the medium and long term, these effects could be offset by potential technological developments and by renewables becoming more energy efficient.

5 The uneven impact of the surge in inflation

The price surge over the last few quarters has already had an appreciable impact on economic activity, which would increase if this episode proves to be more intense and persistent. Indeed, as analysed in depth in the Banco de España's December 2021 and March 2022 Quarterly Report on the Spanish Economy, the inflationary pressures observed would have had a significant adverse impact on both the Spanish economy's growth rate in 2021 and its outlook for 2022-2024. Most of this effect appears to have stemmed from the deterioration of consumption and investment dynamics, in response to the loss of real income. Beyond these aggregate effects, the impact of the current inflationary episode on the different types of households and firms appears to be very heterogeneous. This aspect is analysed in the rest of this section.

5.1 Households

Aggregate inflation metrics are constructed on the basis of an average household's consumption pattern. Therefore, they do not provide a fully accurate indication of price changes for certain types of households. The standard metrics for quantifying consumer price inflation, such as the CPI or the HICP, are constructed as a weighted average of the changes in the prices of a number of goods and services, which are selected and weighted so as to approximate the consumption basket of a representative household. This methodology is the most appropriate for calculating the inflation borne by the economy's households overall. However, since consumption patterns may differ significantly depending on the type of household, these aggregate measures could underestimate or overestimate the true rate of price change for certain specific households.[51] Incorporating these considerations into the analysis is particularly relevant in the current setting, in which prices are rising relatively unevenly across the different goods and services.

50 See Alonso and Suárez-Varela (2021) and International Energy Agency (2021).

51 Izquierdo, Ley and Ruiz-Castillo (2003) analyses the differences between the CPI and a price index in which households are weighted equally, regardless of their share in aggregate consumption.

The Household Budget Survey allows different inflation rates to be constructed for different types of households according to their family structure, age, education and income.[52,53] This exercise begins by documenting the notable differences between the consumption patterns of the different types of households. Thus, for instance, Chart 3.16.1 shows that spending on staple goods (particularly food, electricity, gas and other fuels) as a share of the total consumption basket is considerably higher for households with a lower income level or where the reference person is older or has a lower educational attainment level. Specifically, in the period 2006-2020, the share of expenditure on these goods accounted for 24% of consumption in the bottom quartile of the income distribution. This percentage falls to 17% in the top quartile.

In the period 2006-2020 a negative relationship is seen between the inflation borne by households and their level of income. As can be seen in Chart 3.16.2 (columns 1 to 3), over this period households with lower income levels were affected to a greater extent by the price increases. In particular, between 2006 and 2020, the average annual inflation rate for households in the bottom quartile of the income distribution stood at 1.6%, almost 2 percentage points (pp) higher than for those in the top quartile. When this difference is accumulated over the 15 years analysed, and assuming that the households remain in the same income bracket throughout this period, the inflation gap increases to more than 2.75 pp.

The share of spending on staple goods lies behind many of the differences in the inflation rates that households with different income levels faced between 2006 and 2020. Specifically, over this period food, electricity, gas and other fuels jointly accounted for 58% of the inflation experienced by lower-income households. This percentage falls to 34% in the case of higher-income households.

In recent months the inflation rate for lower-income households (bottom quartile) is estimated to be 1.2 pp higher than for higher-income households (top quartile).[54] As shown by Chart 3.16.2 (columns 4 to 6), between April 2021 and March 2022 the price of the consumption basket of lower and higher-income households rose by 5.6% and 4.3%, respectively. In absolute terms, this would have meant an additional average annual expenditure of €618 and €1,329, respectively.[55] For both groups, higher electricity prices appear to be the largest driver behind this increase in spending (€286 and €446, respectively). Households

52 See Basso and Pidkuyko (2022).

53 This rate is calculated by weighting the price growth of individual goods according to the share of total expenditure that each household spends on the relevant item. See Attanasio (1998) for a detailed description of the methodology.

54 This exercise is based on an extrapolation to the reference period of the latest available consumption data (for 2020) in the Household Budget Survey. It uses the average of the annual percentage changes in inflation between April 2021 and March 2022.

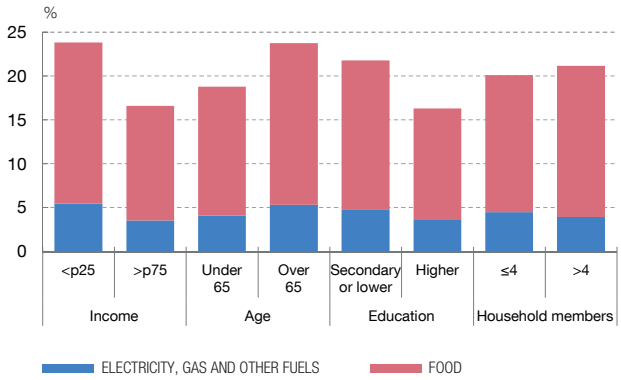
55 These contributions may differ from the figures published by the National Statistics Institute (INE), as they are the result of a simulation exercise disaggregated by household, drawing on household expenditure in the Household Budget Survey.

Chart 3.16

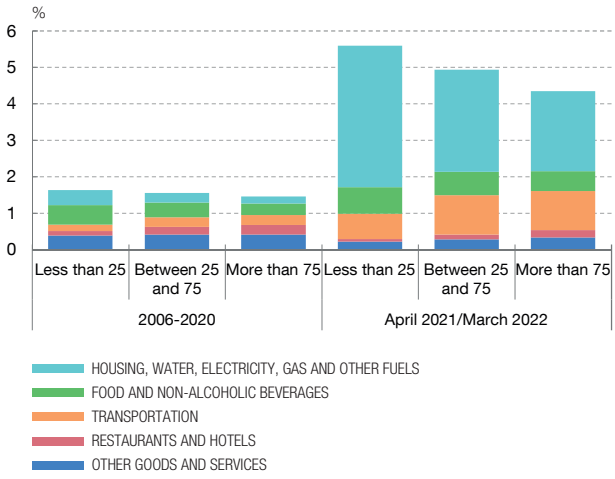
INFLATION RATES FOR DIFFERENT INDIVIDUAL CHARACTERISTICS AND EFFECT OF THE TAX MEASURES (a)

The increase in staple goods prices in the period 2006-2021 contributed to inflation hitting lower-income households (which spend a larger share of their expenditure on such goods) the hardest. Tax measures on electricity have partially offset the rise in electricity prices.

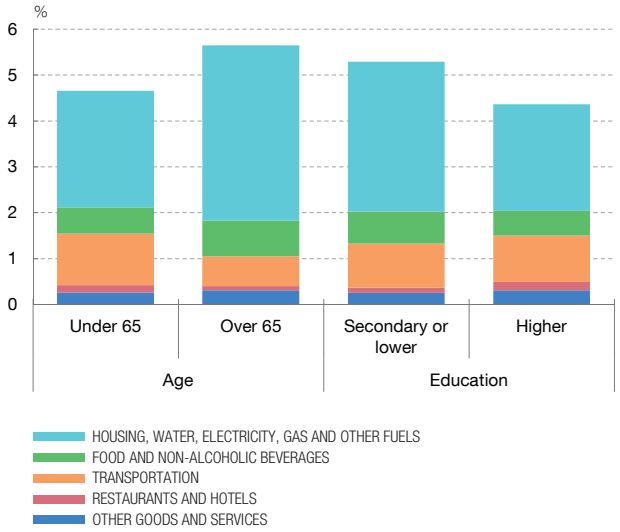
1 SHARE OF EXPENDITURE ON FOOD AND ELECTRICITY, GAS AND OTHER FUELS (2006-2020)



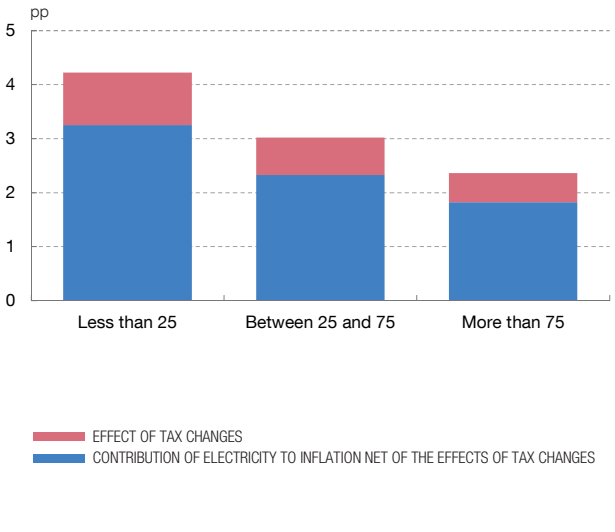
2 HOUSEHOLD-SPECIFIC INFLATION BY INCOME PERCENTILE



3 HOUSEHOLD-SPECIFIC INFLATION BY EDUCATIONAL ATTAINMENT LEVEL AND AGE (APRIL 2021/MARCH 2022)



4 CONTRIBUTION OF RECENT CHANGES IN ELECTRCITY TAXES TO HOUSEHOLD-SPECIFIC INFLATION BY INCOME PERCENTILE (APRIL 2021/MARCH 2022) (b)



SOURCES: Household Budget Survey, INE and Banco de España.

a See Basso and Pidkuyko (2022).
b The tax changes considered are the reduction of VAT on electricity from 21% to 10% (Royal Decree-Law 12/2021) and the reduction in the excise duty on electricity from 5.1% to 0.5% (Royal Decree-Law 17/2021).

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where the reference person was older than 65 faced inflation 1 pp higher than the rest. This gap is mainly due to the higher inflation experienced by the lower-income households within this group (see Chart 3.16.3). Further, as compared with the other groups, inflation was 0.9 pp higher for households with secondary education or less.

Some of the measures approved in recent months would have an impact on the distributional effects of inflation. In particular, Banco de España estimates suggest that the indirect tax cuts approved in 2021[56] reduced average inflation for lower-income households between April 2021 and March 2022 by 1 pp, a sharper reduction than that experienced by households in the top quartile of the income distribution (0.5 pp) (see Chart 3.16.4). Conversely, according to preliminary estimates of the impact of the recently approved fuel discount (€0.20 per litre of fuel for the period from 1 April to 30 June 2022),[57] the inflation borne by lower-income households over this period could be reduced by 0.35 pp, a smaller reduction than that experienced by higher-income households (0.61 pp).[58]

The upturn in prices could also affect households differently depending on their net financial position. Conceptually, inflation imposes a tax on cash holdings and bank deposits, while it reduces the real value of debts. Thus, a sharp rebound in prices could lead to some redistribution of wealth among households with different types of financial assets and liabilities. This is the so-called "Fisher channel" of monetary policy.[59]

Empirical evidence confirms the quantitative relevance of this "Fisherian" channel. The findings of a recent paper[60] suggest that middle-aged people (aged 36 to 45) with high labour income, who have a net debtor position on average,[61] have benefited from the rise in inflation. In particular, their ability to save would have increased by 3% of their annual labour income owing mainly to the lower real value of their debts (see Table 3.1). By contrast, the over-65s, who tend to have a net creditor position, would have been comparatively more adversely affected. It should be borne in mind that, in this exercise, the channel for updating income with inflation has been considered equally across all groups. The adverse effects on the over-65s could therefore be partially mitigated by the automatic indexation of pensions.

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56 See Royal Decree-Law 12/2021 of 24 June 2021 and Royal Decree-Law 17/2021 of 14 September 2021 (both available in Spanish only), approving, respectively, the reduction in VAT on electricity from 21% to 10% and the reduction in the excise duty on electricity from 5.1% to 0.5%. The estimates presented in Chart 3.16.4 only assess the impact of these two measures. Given the information available at the cut-off date for this report, it is not possible to assess with sufficient accuracy the distributional effects of the other measures approved by the Government in recent months.

57 See Royal Decree-Law 6/2022 of 29 March 2022 (available in Spanish only).

58 Given the mobility restrictions in place for much of 2020, these estimates consider the share of household spending on diesel fuel and petrol observed in 2019. Additionally, these calculations are based on the assumption that the measure recently approved will entail a reduction of around 11% in diesel and petrol prices compared to their pre-regulation price.

59 See Doepke and Schneider (2006) and Nuño and Thomas (2022).

60 This paper draws on individual data from more than four million customers of one of the largest Spanish commercial banks and analyses the impact of the increase in inflation in 2021 on individuals' ability to save. To this end, it takes into account both consumption disparities and the Fisher channel (see Cardoso et al. (2022)).

61 See Cardoso et al. (2022). Customer account balances show that the average net position of customers aged between 36 and 45 above the 75th percentile of the income distribution is -€36,000. The average net position of customers over 65 years of age is around €40,000.

Table 3.1

MEDIAN EFFECT OF UNEXPECTED INFLATION ON SAVING CAPACITY THROUGH NET NOMINAL POSITIONS AND CONSUMER SPENDING (a)

%	Percentile of the labour income distribution				
Age	p10 - p25	p25 - p50	p50 - p75	p75 - p90	> p90
< 36	0.06	0.04	-0.06	-0.45	-0.30
36-45	0.37	0.62	1.58	3.43	3.17
46-55	0.05	0.11	-0.04	-0.12	-0.18
56-65	-1.04	-1.24	-1.94	-2.44	-2.70
> 65	-5.15	-5.38	-5.47	-4.90	-4.70

SOURCE: Cardoso et al. (2022).

a The table presents the effect of the year-on-year inflation of December 2021 (calculated using the aggregate composition of spending in the sample) on the saving capacity of 4.2 million bank customers with directly credited salaries, by age group (rows) and percentile of the conditional distribution of labour income in the database (columns). The total effect is the sum of: (1) the effect through net nominal positions (NNPs) and (2) the effect through consumer spending. The values in each cell are the median of the distribution of effects for the corresponding age-income group, calculated as a percentage of the annual labour income of each customer.

In any event, the effect of inflation on households' well-being depends not only on the composition of their expenditure and financial portfolios, but also on their ability to react to the increase in relative prices by adjusting their consumption and saving patterns. Some households may be able to reduce their spending on goods with higher price increases or adjust the composition of their investment portfolios with the aim of reducing their exposure to inflation. Moreover, the distribution of the effects of inflation on well-being may also depend on the ability of household members to adjust their labour supply. A more detailed analysis is required in the future to understand how this adaptability varies according to each household's demographic and economic situation.

5.2 Firms

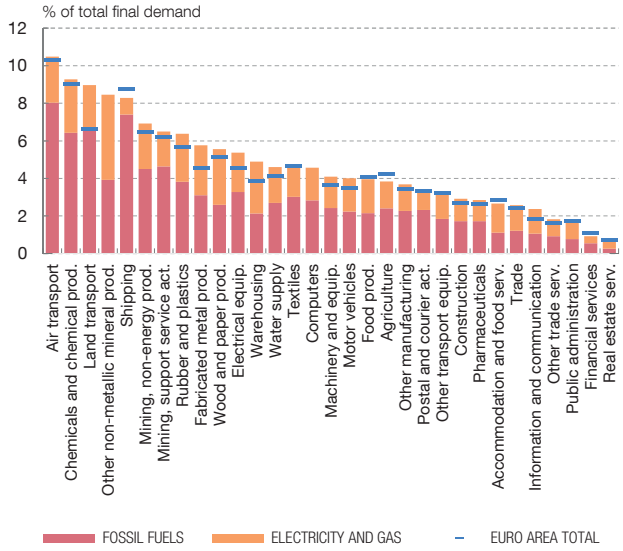
The impact of the inflationary episode is very uneven across the different sectors and mainly depends on how intensely energy inputs are used in their production processes. As noted above, the most significant price increase in the current inflationary episode has been in energy inputs. In this respect, although energy is an input common to all of the economy's production processes, its weight differs widely from sector to sector (see Chart 3.17.1). Thus, for example, manufacturing and transport are particularly energy-intensive, while its relative importance in real estate services, pharmaceuticals and even public administration is very low. Chart 3.17.1 also illustrates that, in general terms, energy has a higher weight in Spanish sectors' production processes than the euro area average. This is especially the case in the land transport sector.

Chart 3.17

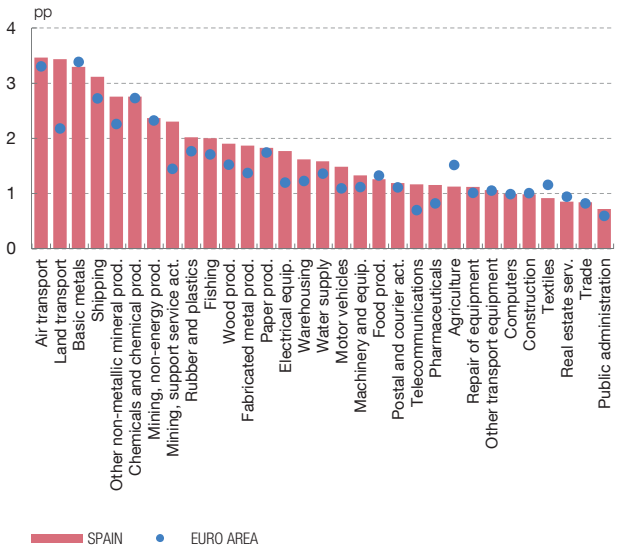
THE RISE IN INFLATION IS HAVING HETEROGENEOUS EFFECTS ON FIRMS

The impact of the current inflationary episode is very heterogeneous across sectors and mainly depends on the intensity with which each sector of activity uses energy inputs in its production processes.

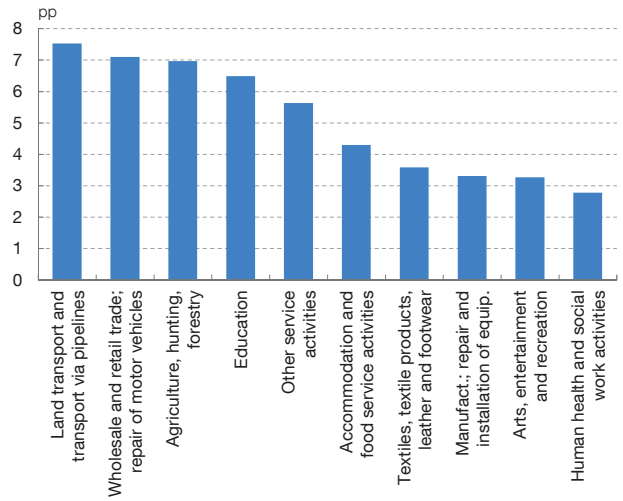
1 VALUE ADDED BY THE ENERGY SECTOR TO FINAL DEMAND. SPAIN AND EURO AREA



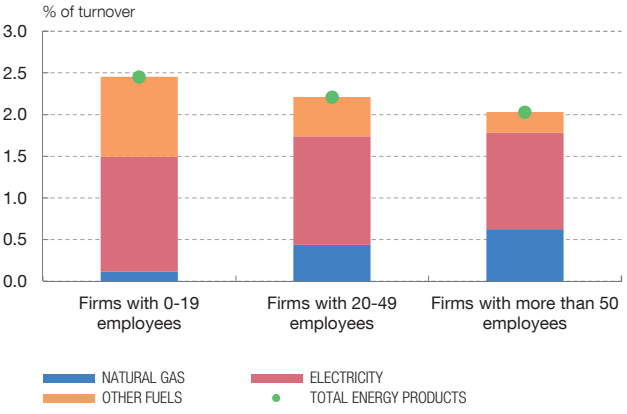
2 INCREASE IN SECTORAL COSTS FOLLOWING A 22% RISE IN ENERGY PRICES. SECTORS WITH THE HIGHEST INCREASE (a) (b)



3 INCREASE IN THE SHARE IN EMPLOYMENT OF FIRMS WITH NEGATIVE PROFITABILITY IN 2022 FOLLOWING A 22% INCREASE IN ENERGY PRICES. SECTORS WITH THE HIGHEST INCREASE (a) (c)



4 PURCHASES OF ENERGY PRODUCTS BY FIRM SIZE (d)



SOURCES: OECD and Banco de España.

a The 22% increase considered in the cost of energy is the increase in energy prices observed between the Banco de España projections published on 5 April 2022 and those published on 17 December 2021.
b See Izquierdo et al. (2022).
c Simulation using individual data. Profitability is defined as (ordinary net profit + financial costs) / assets net of non-interest-bearing liabilities.
d For sectors B-E of the NACE classification.

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The impact of higher energy prices on firms' costs is magnified by sectoral linkages. The linkages between one sector and the rest of the economy amplify the effects on firms of the rise in energy prices beyond the aforementioned direct impacts. This mechanism is particularly relevant in sectors such as transport, which has a high direct exposure to changes in fuel prices and plays a key role in production chains. Any increase in its costs is therefore passed on very significantly to the rest of the economy. Chart 3.17.2 illustrates the expected cost increase for the different economic sectors in 2022, through direct and indirect channels,[62] if energy costs were to increase by 22% over this year (i.e. the increase in energy prices observed between the Banco de España projections published on 5 April 2022[63] and those published on 17 December 2021).[64] According to these simulations, the most affected sectors in the Spanish economy would be air transport, land transport, basic metals and shipping, while in the euro area the most affected sectors would be basic metals, air transport and chemical products.

The increase in production costs is expected to lead to a deterioration of some firms' economic and financial situation. This deterioration could happen whether firms pass on their higher costs to their customers (causing their sales to suffer) or not (thus narrowing their margins). In both scenarios, corporate earnings will decline and, as a result, some firms could become financially vulnerable. The simulations carried out show that a 22% increase in energy costs would translate into a moderate increase in the share of financially vulnerable firms in Spain, albeit with a high sectoral heterogeneity.[65] For example, in 2022 the share in employment of firms with negative profitability would rise by more than 3 pp. However, this increase would stand at more than 6 pp in several sectors of activity (see Chart 3.17.3).[66] The sectoral heterogeneity would be linked to both sectoral differences in the degree to which firms' costs increase (a reflection of their production structure) and asymmetries in the initial economic and financial situation (in particular, the number of firms that were close to the thresholds determining vulnerable status in each sector before the shock).

Within each sector, smaller firms are relatively more reliant on energy inputs, making them more vulnerable to the current inflationary pressures. Indeed, according to the INE's "Estadística Estructural de Empresas" (Structural

62 The scale of these indirect effects can be estimated using a sectoral production network model that properly represents, in a stylised framework, customer-supplier relationships between the different sectors in each economy, and between such sectors and those in other economies from around the world (see Izquierdo et al. (2022)).

63 See "Macroeconomic projections for the Spanish economy (2022-2024)".

64 See "Macroeconomic projections for the Spanish economy (2021-2024): the Banco de España's contribution to the Eurosystem's December 2021 joint forecasting exercise".

65 See Blanco et al. (2022).

66 These simulations take into account both the increase in the cost of energy and non-energy inputs and the increase in wages prompted by higher energy prices. The effects on corporate earnings include those associated both with higher purchase and selling prices and with lower quantities, as result of the fall in demand stemming from higher selling prices.

Business Statistics), in 2019 the cost of energy products as a percentage of sales was comparatively higher for smaller firms (see Chart 3.17.4). Moreover, these firms made the highest relative use of oil-related products in their production processes.[67]

6 Conclusions

The global inflation rate rose significantly in 2021 and accelerated further in early 2022, partly because of the war in Ukraine. Overall, this sharp rise in prices is the result of a marked increase in commodity prices, a strong recovery in demand following the pandemic-related slump, and an insufficient supply response due to various geopolitical issues and certain bottlenecks in global value chains.

Although it is a global phenomenon, the effects of this inflationary episode and the factors behind it have been very uneven across countries. Specifically, the inflationary impact of higher energy prices has been especially marked in the euro area, in particular in the Spanish economy. This is partly due to the energy component making up a larger share of Spanish households' consumption basket and to Spanish firms' productive structure.

Analysts' consensus suggests that inflationary pressures will gradually ease over the coming quarters, as production bottlenecks clear and energy price growth slows. In any event, there is considerable uncertainty surrounding these forecasts and the possibility that the current inflationary episode may be more persistent cannot be ruled out, particularly should significant indirect and second-round effects on inflation arise. This would entail a significant loss of employment and competitiveness for the Spanish economy. To avoid this, it would be desirable to reach an incomes agreement whereby the costs of this episode for the Spanish economy are shared out in a balanced way across society as a whole.

Some Spanish households and firms have been hit hard by the sharp price hikes of recent quarters. The impact on the different types of households and firms appears to be very heterogeneous. Lower-income households would have experienced a significantly higher inflation rate in recent months. Similarly, some of the most-energy-intensive sectors (such as transport) and types of firms (such as small enterprises) would have endured a higher cost increase and greater deterioration in their economic and financial situation. It would therefore be desirable for public policies (particularly fiscal policy) to take into account these asymmetric impacts and, in a highly targeted and temporary manner, try to mitigate the adverse effects on the most vulnerable groups. The need to avert any feedback into the current inflationary process and the limited budgetary scope, given the high

67 See Matea and Muñoz (2022).

government deficit and debt, are further reason to avoid an across-the-board fiscal impulse and the widespread use of automatic indexation clauses in expenditure items.

Central banks must continue the process of normalising their monetary policy and avoid a de-anchoring of inflation expectations from their target over the medium term. The ECB, like other central banks, has already begun this normalisation process. In the current extraordinarily uncertain setting, and provided that euro area medium-term inflation expectations remain anchored around its 2% target, the ECB has emphasised that its monetary policy response will depend on the performance of economic indicators, in addition to being gradual and maintaining all the optionality and flexibility provided by its various instruments. In particular, the ECB Governing Council has insisted that it will take whatever action is needed to fulfil its mandate to pursue price stability and to safeguard financial stability.

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4

THE SPANISH ECONOMY AND THE CLIMATE CHALLENGE

1 Introduction

The fight against climate change and the green transition is one of the biggest challenges facing our society. This chapter details how mitigating and adapting to global warming will involve a profound structural change in our economic growth model, with very relevant implications for practically every sphere of activity.

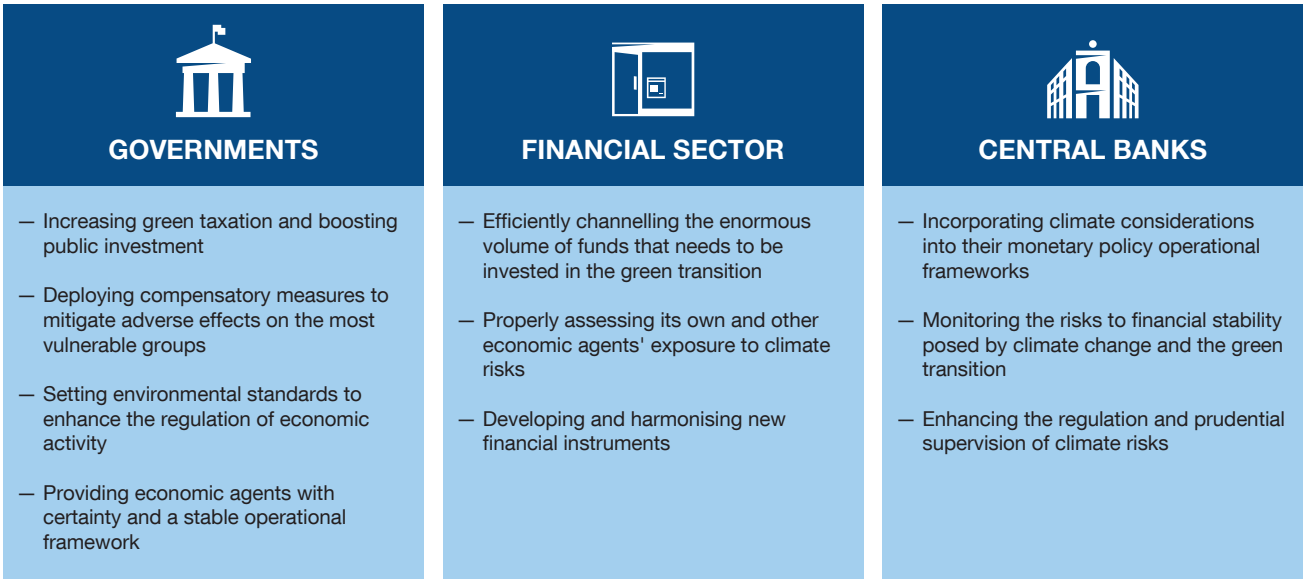
There is enormous uncertainty regarding the impact that these transformational challenges will have on the economy as a whole (see Section 2). Nonetheless, there is a broad consensus among researchers that, if greenhouse gas (GHG) emissions are not reduced significantly in the coming decades, the economic impact of the physical risks associated with global warming could be very large. Moreover, the shift to a low-emission economy also involves significant transition risks, which means that an orderly transition with a high degree of international coordination is desirable.

In recent years, Spain has made very significant commitments on the environment (see Section 3). Meeting the proposed targets – which are in line with those also set in the EU as a whole and in other advanced economies – will be an enormous challenge for the total Spanish economy in the coming years. However, beyond the possible aggregate economic impact of fighting climate change, this process will foreseeably have a very uneven impact across regions, sectors, businesses and households. In particular, there is evidence to suggest that the physical and transition risks linked to global warming may affect precisely some of the most vulnerable households and businesses more severely.

In view of the magnitude of the climate challenge, all economic policies and all agents need to contribute very actively to the green transition (see Figure 4.1). In particular, governments have a leading role to play. They have the necessary democratic legitimacy to establish the roadmap and also the broadest and most suitable set of instruments to achieve the proposed targets, especially in the fiscal sphere and to regulate economic activity (see Section 4). It is essential that these public policies provide economic agents with certainty – when present and future circumstances are so uncertain – and focus especially on temporarily mitigating the greater adverse short-term impact of climate change on the most vulnerable groups.

The financial system and central banks – within the scope of their competencies – must also contribute to the green transition. Without the active involvement of the financial system, it will be impossible to efficiently channel the large volume of

Figure 4.1
THE ROLE OF KEY ACTORS IN THE FACE OF THE CLIMATE CHALLENGE...



SOURCE: Banco de España.

funds needed to develop new green technologies and to enable households and firms to adopt them across the board (see Section 5). Climate change and the transition to a low-emission economy are also a considerable challenge for central banks (see Section 6). In particular, these processes may have a very significant impact on the conduct of monetary policy and pose major risks to financial stability. As a result, decisive action by central banks is required to analyse the economic and financial implications of climate change and in the regulation of financial institutions and in the area of prudential supervision. An example of the initiatives in these areas are the stress tests for adverse weather events that have recently begun to be conducted in collaboration with credit institutions.

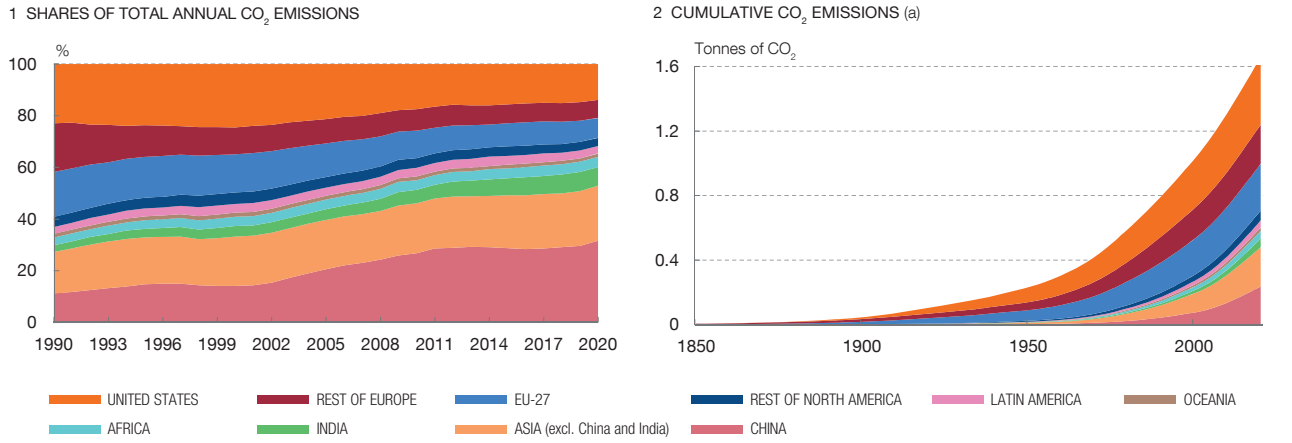
2 Global warming and initiatives to limit it

According to the Intergovernmental Panel on Climate Change (IPCC), the global temperature is increasing by some 0.2°C per decade and, in the last

Chart 4.1

CO_2 EMISSIONS

Extensive scientific evidence shows that global warming is caused by GHG emissions arising from human activity, notably CO_2 emissions. Currently, China is the main global CO_2 emitter (responsible for 32% of global emissions in 2020), followed by the United States (14%) and the EU-27 (7.7%). However, from a historical perspective, the United States has been responsible for more emissions of CO_2 of human origin since 1850 than any other country, followed by the EU-27 and China.



SOURCE: Our World in Data.

a Cumulative CO_2 emissions since 1850, excluding those from land use change (LUC).

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decade, has already reached 1.1°C above pre-industrial levels. This panel of experts – which has reflected the scientific consensus on climate change, its causes, its consequences and possible response strategies since 1988 – points out, moreover, that the warming of the planet that has been observed over recent decades has been caused almost entirely by GHG emissions stemming from human activity.[1] CO_2, which can remain in the atmosphere and contribute to global warming for centuries, stands out among the anthropogenic greenhouse gases.[2] As seen in Chart 4.1.1, China is currently the world's main emitter of CO_2 (being responsible for 32% of global emissions in 2020), followed by the United States (14%) and the EU-27 (7.7%). From a historical perspective, however, the United States has been responsible for most CO_2 emissions of human origin since 1850 (25% of the cumulative total), followed by the EU-27 (18%) and China (14%) (see Chart 4.1.2).

The IPCC warns that, without a very significant reduction in GHG emissions, global warming will continue and that this could have very serious consequences for the planet, some of which might be irreversible. In fact, a

1 See IPCC (2021) and IPCC (2022).

2 See Prentice et al. (2001). This chapter refers almost exclusively to CO_2 emissions. In 2019, such emissions accounted for 75% of global GHG emissions. Other important greenhouse gases are methane (18%), nitrous oxide (4%) and fluorinated gases (2%). As in the case of CO_2, there are also global agreements to reduce these other greenhouse gases. For example, agreements were reached at the Glasgow COP 26 to reduce methane emissions by 30% from their 2020 levels by 2030.

large number of studies show that global warming will cause, among other disruptive phenomena, a rise in sea levels, an increase in the frequency and intensity of extreme weather events – such as heat waves, droughts, floods, cyclones and hurricanes – and a very significant loss of biodiversity in the years ahead.[3] As seen in Chart 4.2, some of these physical risks vary considerably across regions.

In recent years, in the light of this evidence, many Governments have made very significant environmental commitments – essentially as regards the reduction of GHG emissions – both in coordination with others and individually.[4] Notable among these initiatives is the Paris Agreement of 2015, reached at the 21st United Nations Climate Change Conference (COP 21) and ratified by 191 countries. The aim of this agreement is to keep the increase in global temperature this century below 2°C (above pre-industrial levels), although it also aspires to limit this rise to 1.5°C. For this purpose, the various signatory countries have adopted commitments to reduce their emissions, known as nationally determined contributions (NDCs). The fulfilment and ambition of these commitments will be regularly reviewed.

In the case of the EU, the coordination of actions to mitigate the effects of climate change and to promote the green transition has mainly been based on the European Green Deal.[5] Notable among such actions is the European Climate Law,[6] enacted in June 2021, which sets a legally binding target of net zero GHG emissions by 2050 and requires both Member States and EU institutions to take the necessary measures to meet this target. This Law also sets an intermediate target for 2030 of reducing GHG emissions in the EU as a whole by 55% (from 1990 levels). To make these targets operational, the European Commission has proposed a broad package of legislation known as the "Fit for 55 Package",[7] most of which is currently in the legislative approval process.

In recent years, many Governments have been adopting various economic policy measures, within the framework of these environmental commitments (see Sections 3.1 and 4). The main initiatives include, on the one hand, various regulatory interventions aiming to limit energy consumption and promote the development and adoption of less polluting energy sources. On the other, action has also been taken in the area of fiscal policy, aiming to ensure that economic agents internalise the environmental costs of their actions. Notable within this category are

3 For the relationship between climate change and biodiversity, see Pörtner et al. (2021).

4 For an analysis of the various international and European initiatives adopted in this area, see Dormido et al. (2022), forthcoming.

5 See European Commission (2019). It is important to stress that the European Green Deal not only addresses climate change but also includes other initiatives such as the Biodiversity Strategy for 2030 (see European Commission (2020a)), the EU Action Plan "Towards Zero Pollution for Air, Water and Soil", and the EU's Circular Economy Action Plan (see European Commission (2021a)).

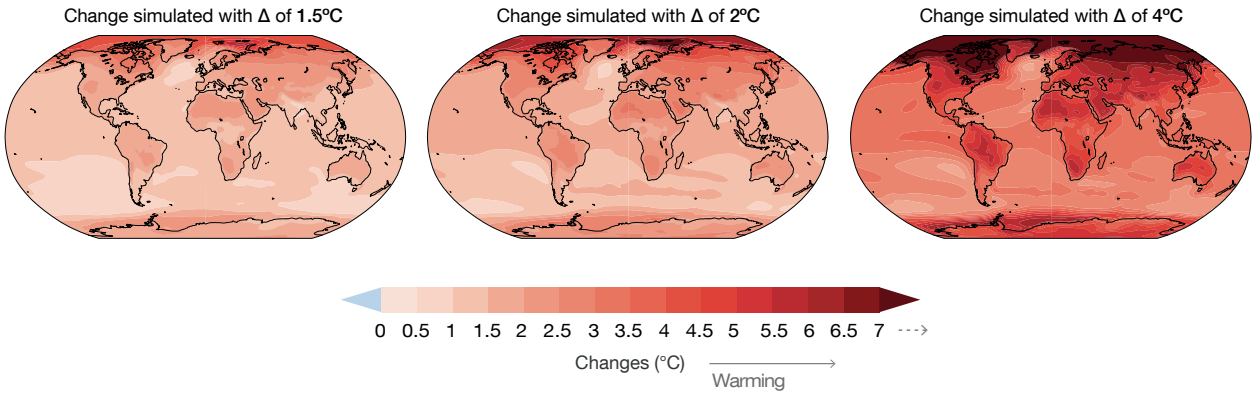
6 See Regulation (EU) 2021/1119 of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 ('European Climate Law').

7 See European Commission (2021c).

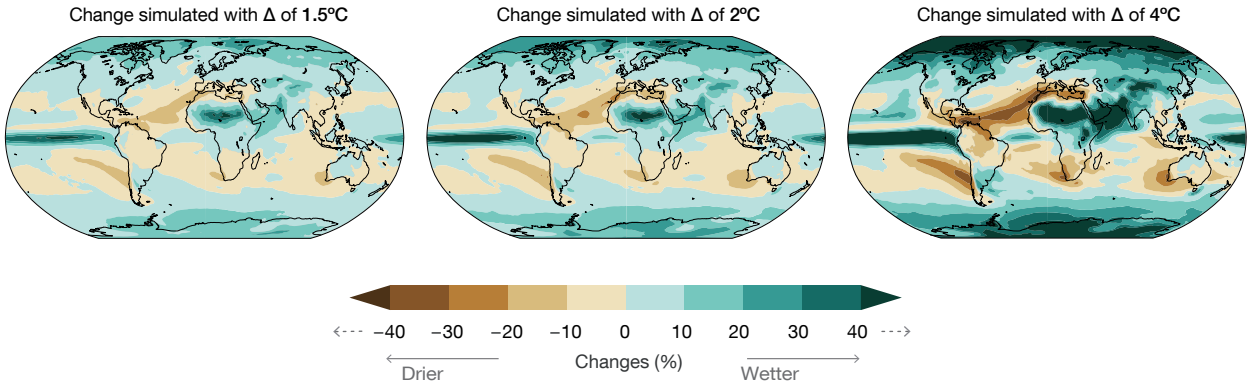
Chart 4.2

ESTIMATED CHANGES IN GLOBAL TEMPERATURE AND RAINFALL IN 2100

1) Annual temperature changes (ºC), relative to 1850-1900



2) Annual rainfall changes (%), relative to 1850-1900



SOURCE: IPCC (2021).

the creation and subsequent expansion of markets for emission allowances (for example, in the EU, where the Emissions Trading System (ETS), the world's largest market for GHG emissions, is a basic pillar of EU climate policy)[8] and the imposition and tightening up of various green taxes. Fiscal policy initiatives to encourage public and private investment in new technologies to accelerate the green transition have also proliferated in recent years. Notable in Europe, for instance, is the Recovery and Resilience Facility (RRF), which aims to implement €724 billion of investment projects in the period 2020-2024, of which a very significant proportion (at least 37%) must contribute to the green transition.

8 This system places an upper limit (which is reduced over time) on the total amount of greenhouse gases that can be emitted by all the activities it covers. Some of the emission allowances associated with this limit are (temporarily) allocated free of charge, while the rest are auctioned. However, there is a secondary market for these allowances, which determines a market price for GHG emissions (see Dormido et al. (2022), forthcoming).

In any event, despite the initiatives deployed, the trend reduction in GHG emissions committed to in the current NDCs is not yet apparent. This trend would still entail a global temperature more than 2°C above pre-industrial levels by the end of the century (some 2.4ºC higher) (see Chart 4.3). In fact, the consensus of scientific experts suggests that limiting the increase in global temperature to 2ºC would require the volume of global GHG emissions to be reduced on average by 3.2% per annum over the next thirty years, which is significantly more than the reduction that has been committed to (under the NDCs of the Glasgow COP 26 held in November 2021).[9] It should be noted here that the 6.1% reduction in global GHG emissions observed in 2020 appears to have been entirely one-off and was essentially a result of the sharp contraction in activity caused by the COVID-19 pandemic and the measures taken to contain its spread.

Against this background, it is increasingly likely that the physical risks associated with climate change will materialise, but also that significant transition risks will arise if the transition has to be stepped up in the future. Apart from the physical risks associated with global warming highlighted above, the transformation into a low-carbon-emission economy may also be accompanied by considerable transition risks. These risks essentially stem from the mitigation initiatives taken by the authorities. For example, insofar as many of these actions may entail an increase in energy prices in the short term, this may pose a risk to the incomes and the creditworthiness of households and firms that use energy intensively. At the same time, the lack of certainty for economic agents regarding the public policies and the structural transformation process that will have to be implemented in the years ahead may adversely affect their consumption and investment decisions and, in this climate of heightened uncertainty, financial market disruption cannot be ruled out. The probability of these risks materialising in the future and how intensely they do so will doubtless depend on the speed and orderliness with which the transition to a low-carbon economy is proposed and implemented. In this respect, any delay in the transition could increase the need to implement it more abruptly in the near future: compare, for example, the emission reduction paths that would be consistent with a 2ºC increase in the global temperature assuming a transition beginning in 2021 and one that begins in 2030 (the orange and green lines in Chart 4.3.2, respectively). This would also significantly increase the transition risks.

The assessment of the economic impact of the various physical and transition risks associated with climate change is subject to enormous uncertainty, although there seems to be a certain consensus as to the high costs of not adjusting the current path of GHG emissions and the advantages of an orderly

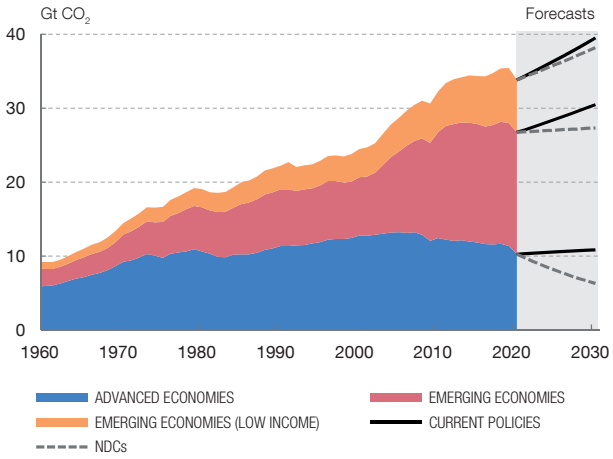
9 To achieve the more ambitious target of limiting the increase in temperature to 1.5°C, 151 countries, accounting for 90% of global GDP, have committed to reaching climate neutrality by 2050 (Climate Ambition Alliance: Net Zero 2050). In the case of the United States, China, the EU and Japan, achieving climate neutrality through an orderly transition will require more resolute action before 2030 than has currently been announced. See Nieto (2022).

Chart 4.3

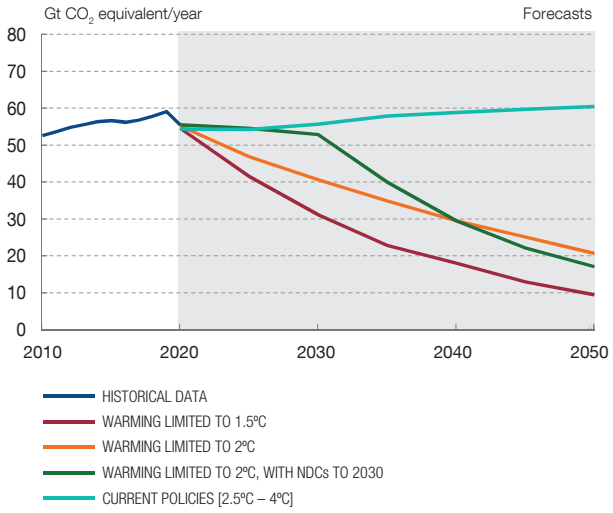
GLOBAL WARMING AND MITIGATING INITIATIVES

The consensus of scientific experts suggests that to limit the global temperature rise to 2ºC will require the volume of global GHG emissions be reduced on average by 3.2% per annum over the next 30 years, a significantly higher rate of reduction than committed to under the NDCs of the Glasgow COP 26 held in November 2021.

1 CO_2 EMISSIONS BY REGION (a)



2 ANNUAL GHG EMISSIONS AND GLOBAL WARMING SCENARIOS IN 2100 WITH RESPECT TO PRE-INDUSTRIAL LEVELS (b)



SOURCES: IMF, Global Carbon Project and IPCC.

a Shows the CO_2 emissions arising from fossil fuels. From 2020, the forecasts correspond to a scenario with current policies. "NDCs" includes, in addition, the national mitigation initiatives up to 2030.

b The scenarios correspond to the trajectories presented in the contribution of Working Group III of the IPCC (2022) and are expressed in terms of planet temperature increases in 2100 with respect to pre-industrial levels.

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adjustment. In addition to the scientific uncertainty involved when discussing climate change and the green transition, sufficiently numerous or broad economic benchmarks to assess precisely how different agents will respond to climate shocks and the transition risks or how these elements will feed into each other do not exist. In this respect, great caution should be exercised when interpreting the quantitative results of the available models that seek to estimate the economic impact of climate change and the green transition. For example, in two of the benchmark studies in the literature (Nordhaus (2017) and Dietz and Stern (2015)) there is an enormous disparity in the estimated effects of global warming, owing to the different assumptions made.[10] That said, from a qualitative point of view, there seems to be some consensus that not adjusting the current path of GHG emissions may have considerable economic costs in the long term (under this scenario there would be no transition risks, but physical risks would materialise more markedly) and that a gradual adjustment of this path would be best to ensure an orderly transition (for example, without excessively delaying the adjustment of emissions). This can be inferred, for example, from the report of the Network for Greening the Financial System (NGFS) (see Chart 4.4).

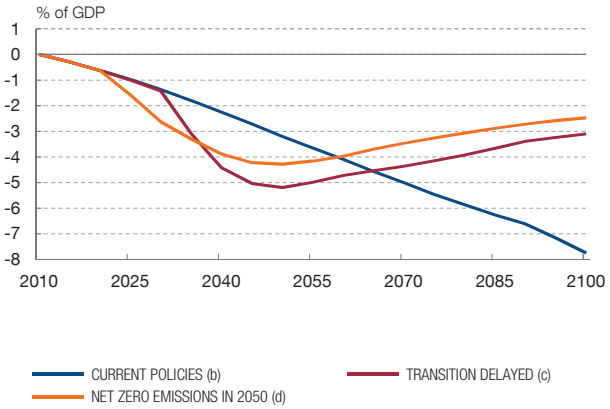
10 In particular, these studies estimate long-term global GDP losses ranging from 0.7% under a moderate scenario to 62% under a severe scenario.

Chart 4.4

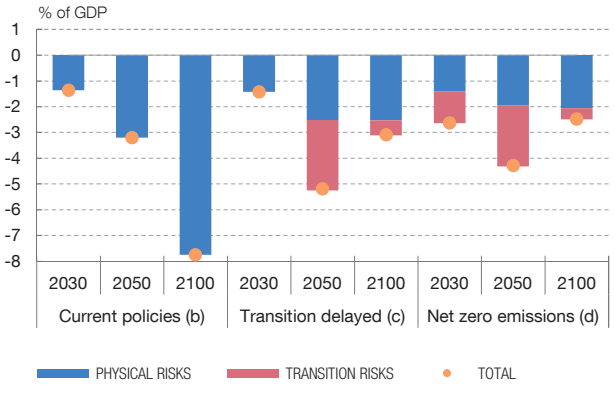
GLOBAL ECONOMIC COSTS OF THE MATERIALISATION OF PHYSICAL AND TRANSITION RISKS ASSOCIATED WITH CLIMATE CHANGE, UNDER VARIOUS SCENARIOS (a)

According to the NGFS, the possible scenarios differ according to the timing and intensity of mitigation measures. The costs of the materialisation of transition risks are higher earlier under the more ambitious scenarios. In the long term, the physical risks dominate in all scenarios and involve greater costs the later the necessary measures are implemented.

1 ESTIMATED GLOBAL ECONOMIC LOSSES



2 BREAKDOWN OF EXPECTED CHANGE IN GLOBAL GDP



SOURCE: NGFS.

a Of the different options offered by the NGFS scenarios, the results of the IAM REMIND-MAgPIE 2.1-4.2. model are presented here.
b In this scenario no further measures are taken in addition to those already in force, leading to an increase in global temperatures of between 2.5ºC and 4ºC in 2100, with respect to pre-industrial levels.
c This scenario assumes that annual emissions do not decrease until 2030 and that, as a result, harsh policies have to be implemented to keep global warming below 2ºC in 2100, with respect to pre-industrial levels.
d This last scenario envisages measures to reduce net emissions to zero in 2050, while the increase in global temperature is kept below 1.5ºC in 2100, with respect to pre-industrial levels.

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Further progress in the fight against global warming will require greater international coordination, while taking into account the specific development conditions of each country. Since climate change and the green transition are a truly global challenge, an internationally coordinated response is needed. This response must, however, take into account the differing capacity of each economy to adjust its emissions profile. For example, the empirical evidence suggests that, for countries at an early stage of development, economic growth and an increase in GHG emissions are positively related, while this relationship is reversed once a high level of per capita income is attained.[11] Also, a recent study by the Banco de España,[12] which analyses CO_2 emissions in 230 countries over the period 1995-2018, indicates that the demographic composition of economies is another factor that affects their level of emissions. In particular, countries with a higher proportion of young people (aged 20-30) and over-60s have a lower level of emissions relative to output than those with a higher proportion of the population in the middle age groups.

11 This relationship is known as the Kuznets environmental hypothesis (see Dasgupta et al. (2002)). However, some studies find that this empirical relationship is not very robust (see, for example, Stern (2004)).

12 See Basso, Jaimes and Rachedi (2022).

In this context, it is essential that the advanced economies support the emerging economies in adapting to and mitigating climate change, but also that mechanisms are put in place to prevent "carbon leakage" if a sufficient degree of coordination is not achieved. Indeed, as required by some of the environmental agreements already achieved at global level, it is essential that the advanced economies provide the emerging economies with the funds and technology they need to be able to undertake the green transition at a pace that does not limit their necessary economic development. Nonetheless, if the international coordination of climate policies fails to prevent significant disparities across countries in the level of ambition of their mitigation initiatives, then it will be necessary to design instruments to prevent economic activity moving to those jurisdictions where climate policies are less restrictive, a process known as "carbon leakage". The carbon border adjustment mechanism recently proposed by the European Commission is a case in point.[13] As a recent Banco de España paper[14] indicates, such a mechanism may significantly help to prevent an increase in the EU's environmental ambition from leading to competitiveness losses for its economies and would thus reduce the negative impact on GDP of the green transition.

In any event, it should be noted that if a high degree of globally synchronised climate ambition materialises, it could cause very significant bottlenecks in certain key sectors for the energy transition. Some of these bottlenecks appear to be apparent already in certain commodities (such as copper, lithium, cobalt and nickel) that are key to the mitigation policies implemented worldwide. According to some studies,[15] these bottlenecks may intensify significantly in the coming years with the transition to a carbon-neutral economy, which a large number of countries have committed to achieving by the middle of this century. Should this happen, the transition process could slow down and its economic cost may increase considerably.

3 The asymmetric impact of climate change in Spain

3.1 Climate risks and the transformational challenge facing the Spanish economy

There is consensus among the scientific community that the Iberian Peninsula could be significantly affected by the physical risks associated with climate change and that this impact would be highly uneven across regions. The considerable intensity and asymmetry of the possible impact of global warming in

13 At its meeting of 15 March 2022, Ecofin approved the general approach of a carbon border adjustment mechanism to ensure the environmental integrity of the EU's policies and prevent carbon leakage, in line with World Trade Organization rules, as part of the "Fit for 55 Package" (see Council of the European Union (2022)).

14 See Delgado and Santabárbara (2022), forthcoming.

15 See, for example, Boer et al. (2021).

Spain is highlighted, for example, by the European Commission's PESETA IV report.[16] Among other things, this multidisciplinary and highly granular study illustrates how the temperature, annual rainfall and water stress will change in Spain and in its regions, in comparison with the rest of the EU, under different global temperature scenarios (see Chart 4.5). In particular, it suggests that the impact of global warming on rainfall will be highly uneven across the peninsula, with sharper declines in the south, and that the duration of water shortages and the proportion of people exposed to them will increase notably, especially in the south east.

Even though they are subject to a high degree of uncertainty, these projections point to the need to develop and implement an ambitious strategy to mitigate and adapt to climate change in Spain. In general terms, the basic pillars of such a strategy are the Climate Change and Energy Transition Law, the National Energy and Climate Plan (NECP) 20212030, the National Plan for Adapting to Climate Change (PNACC by its Spanish abbreviation) and the Just Transition Strategy.[17] Within the framework of this set of initiatives, and in keeping with the commitments at European level in the European Green Deal and the "Fit for 55 Package", Spain proposes, among other targets, to fully decarbonise the economy by 2050 and to have a system of electricity generation based exclusively on renewables. In the process of transition towards this new energy model, certain minimum targets have also been set for GHG emission reductions (a decrease of 23% from 1990 levels), for the use of renewables (42% of final energy consumption and 74% of electricity generation) and for energy efficiency improvement (a decrease of 39.5% in primary energy consumption).

As part of this strategy, and to be able to meet the environmental commitments made, a broad range of initiatives capable of bringing about a far-reaching transformation in the way in which economic and social activity is carried out in Spain will need to be implemented in the coming years. For example, within the framework of the Law on Climate Change and Energy Transition, proposals have been made for notable changes to patterns of mobility and the creation of low-emission zones in major cities. Also, the NECP envisages the need for higher taxes on heavily polluting activities (for further details, see Section 4). The Technical Building Code[18] lays down new building regulations, to ensure that buildings' energy consumption is low. A fundamental driving force behind many of these initiatives will be the Recovery, Transformation and Resilience Plan (RTRP),[19] presented by the Government in October 2020, which proposes assigning 39% of the funds that Spain receives under the Next Generation EU (NGEU) programme to the green transition.

16 See Feyen et al. (2020).

17 Also notable, in other related initiatives, are the Renewable Hydrogen Roadmap, the Spanish Circular Economy Strategy and the National Strategy for Green Infrastructure and Ecological Connectivity and Restoration.

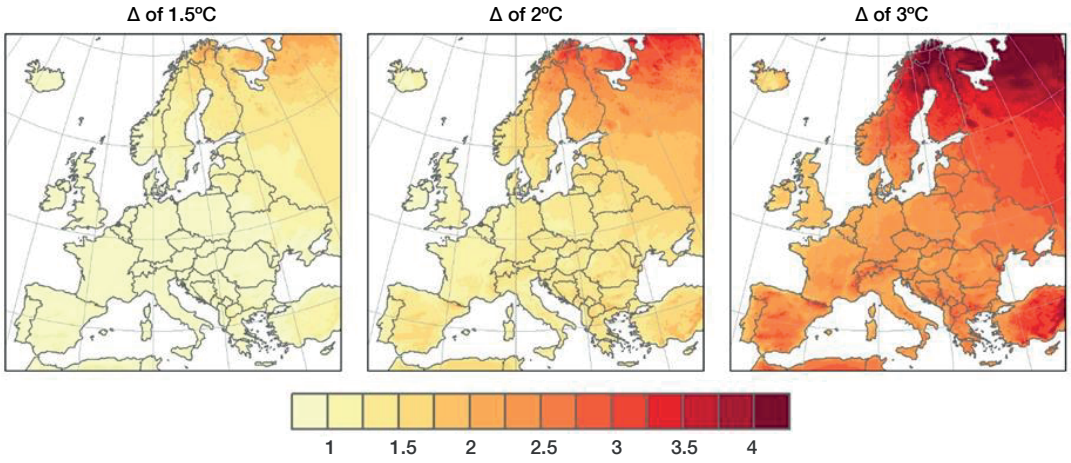
18 See Royal Decree 732/2019 of 20 December 2019.

19 The final text with detailed information was published in April 2021. See the Recovery, Transformation and Resilience Plan.

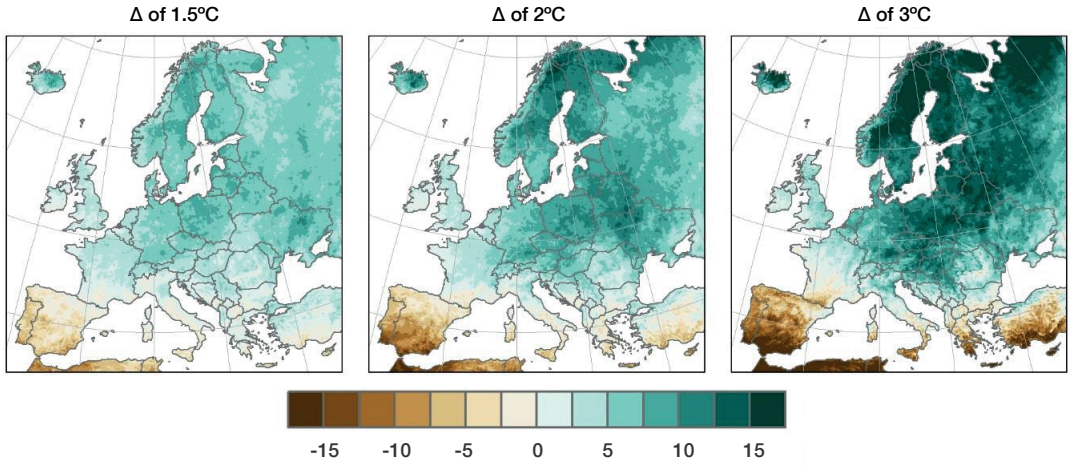
Chart 4.5

ESTIMATED CHANGES IN TEMPERATURE, RAINFALL AND EUROPEAN WATER RESOURCES IN 2100

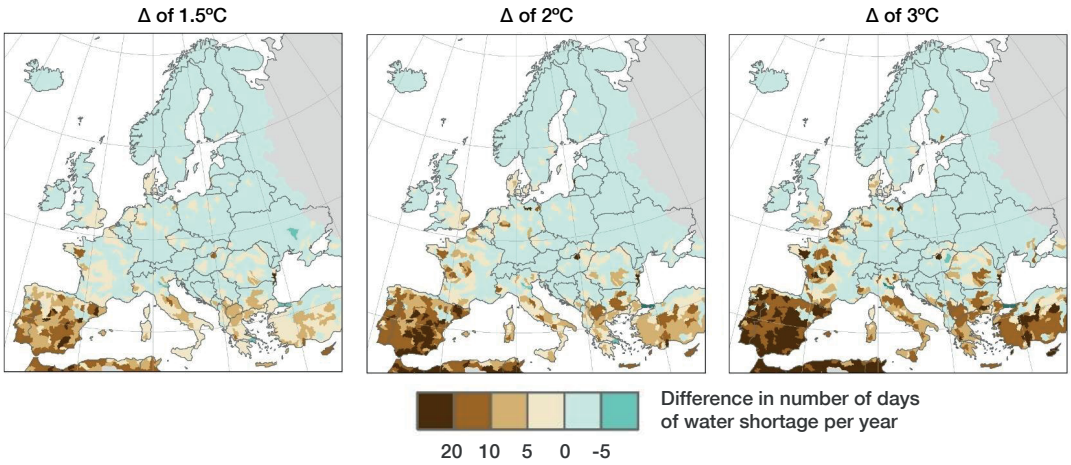
1) Changes in average annual temperature (in degrees centigrade) relative to 1981-2010 under three aggregate global warming scenarios: +1.5ºC, 2ºC and 3ºC.



2) Change in average annual rainfall (%) relative to 1981-2010 under the three global warming scenarios.



3) Impact on water resources.

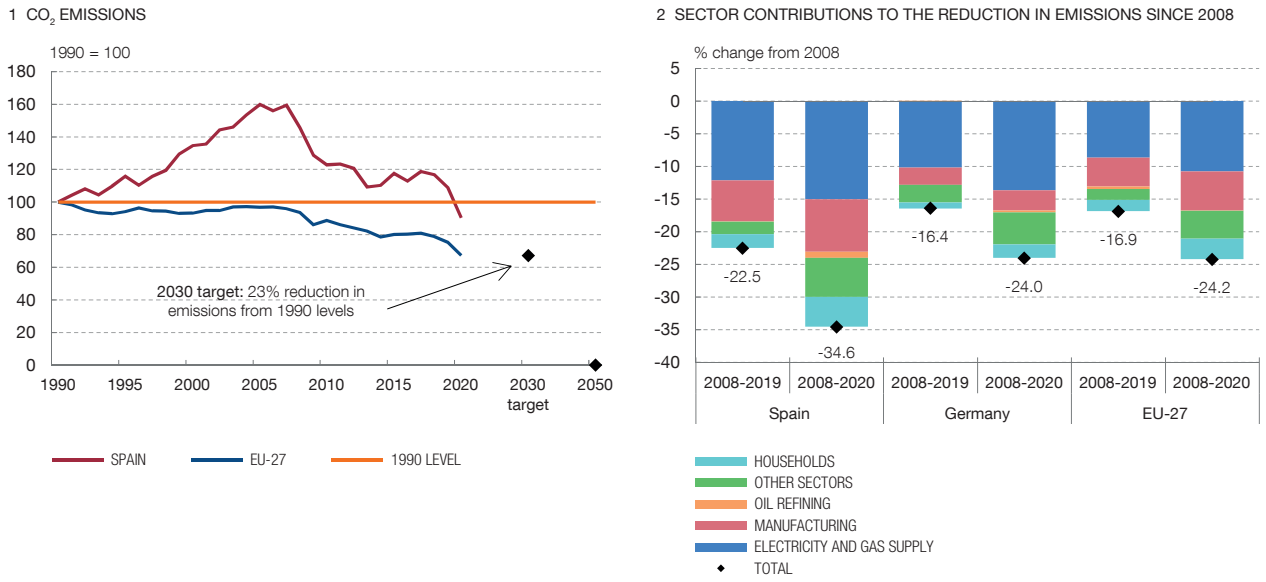


SOURCE: JRC PESETA IV report, European Commission, 2020.

Chart 4.6

GREENHOUSE GAS EMISSIONS: EVOLUTION AND CONTRIBUTIONS OF DIFFERENT SECTORS

In Spain, GHG emissions peaked in 2008, approximately 18 years after they did so in the EU as a whole. Since then, emissions in Spain have declined on average by 4.1% per annum, to stand 13% below their 1990 levels in 2020, still far from the targets set for 2030 and 2050. The factor that has contributed most to this fall in emissions has been the increase in the share of renewables in the production of electricity, although the change in the sectoral structure of the economy, the specialisation in less energy intensive products and the decline n household emissions have also contributed to the aggregate reduction.



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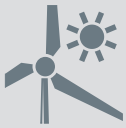
SOURCES: Our World in Data and EUROSTAT.

In any event, the transformational challenge facing the Spanish economy is enormous. In Spain, GHG emissions peaked in 2008, approximately 18 years after they did so in the EU as a whole (see Chart 4.6.1). Since then, emissions in Spain have decreased, on average, by 4.1% per annum, to stand 13% below their 1990 levels in 2020. As SerranoPuente (2021) has pointed out, the main factor behind this fall in emissions appears to have been the increase in the share of renewables in the production of electricity (to 43% in 2020), although the change in the sectoral structure of the economy, the specialisation in less energy intensive products and the decline in household emissions will also have contributed to the aggregate reduction (see Chart 4.6.2). Nonetheless, in 2020 the Spanish economy's direct GHG emissions still amounted to 274.6 million tonnes.[20] These emissions accounted for 7% of total EU emissions (0.7% of global emissions) and made Spain the fifth largest EU emitter (the 23rd EU emitter in terms of per capita emissions). To meet the targets set for 2030, the Spanish economy's GHG emissions must decline on average by 1.5% per annum in the coming years.

20 According to preliminary INE estimates, in terms of equivalent tonnes of CO_2. CO_2 emissions amounted to 213.3 million tonnes, 77.7% of the total. Methane and nitrous oxide (other greenhouse gases) represented 14% and 6.4%, respectively, of total GHG emissions in Spain in 2020.

Figure 4.2
THE ASYMMETRIC IMPACT IN SPAIN OF THE PHYSICAL AND TRANSITION RISKS ASSOCIATED WITH COMBATING GLOBAL WARMING

The Iberian Peninsula could be significantly affected by the physical risks linked to climate change:
— This impact would be highly uneven across regions.
— For example, lower rainfall in the southern part and greater water stress in the south east.



The impact of the green transition will be very uneven at sectoral level:
— Manufacturing, agriculture, transport and electricity and gas supply are the most GHG emitting productive activities in Spain.
— That said, the exposure of a particular sector to climate change does not only depend on its direct GHG emissions but also on its energy intensity and its links to other sectors.

Climate change and the green transition will affect different types of firms unevenly:
— Within each sector, smaller firms seem to be less prepared for climate challenges; many of them have still not assessed the impact these challenges may have on them.
— Among the main risks associated with the green transition identified by firms, higher inflationary pressures and greater administrative burdens (linked to new disclosure requirements) stand out.

The impact of the physical and transition risks may vary considerably from one person to another:
— The foreseeable increase in the prices of more polluting goods and services over the coming years will probably have a greater impact on lower-income households, those whose household reference person is aged 35-45, those residing in rural areas, those with a lower level of education and larger households.
— It would be desirable for public policies to have mechanisms to compensate, temporarily, the most vulnerable households in each of these groups.

SOURCE: Banco de España.

Although this rate of reduction is significantly lower than the average rate recorded since 2008, achieving it will involve an extra incremental effort that should not be underestimated. In particular, beyond the extraordinary challenge involved at aggregate level (for example, the proportion of electricity generated from renewable sources must increase from 43% in 2020 to 74% in 2030), the transition towards a more sustainable economy will entail a considerable challenge for certain types of sectors, firms and households (see Figure 4.2), as illustrated in the following sections.

3.2 The sectoral heterogeneity of the climate challenge

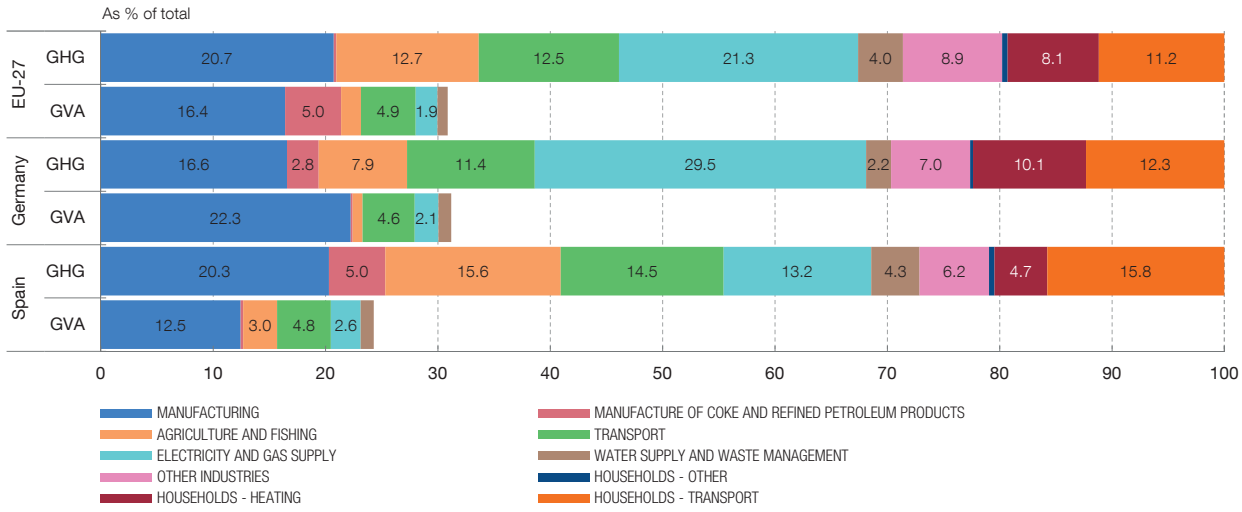
Manufacturing, agriculture, transport, and electricity and gas supply are the productive activities with most GHG emissions in Spain. According to Eurostat, in 2019 household activity – essentially connected with transport and heating – accounted for 20.9% of GHG emissions in Spain (see Chart 4.7). All other emissions came from the productive sector, where manufacturing, agriculture, transport, and

Chart 4.7

GREENHOUSE GAS (GHG) EMISSIONS BY SECTOR

Direct emissions are concentrated among a small number of industries: manufacturing, agriculture and fishing, transport, and electricity and gas supply account for almost 70% of GHG emissions both in Spain and Europe and generate less than 25% of Spanish GVA and around 30% of European GVA.

DISTRIBUTION OF GHG EMISSIONS AND GVA BY SECTOR IN 2019



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SOURCE: Eurostat.

electricity and gas supply – industries that account for approximately 25% of the gross value added (GVA) of the economy – accounted for almost 70% of GHG emissions in 2019.

Cross-sector differences in emission volume and intensity suggest that the green transition will foreseeably pose a highly uneven challenge for the different industries. Thus, for example, partly as a result of the sectoral differences in GHG emissions, some of the public policies already rolled out to mitigate global warming have had a very asymmetrical impact across economic activities. The European Emissions Trading System (EU-ETS) is a case in point, as so far it has affected only a small number of industrial sectors and aviation. Going forward, the ETS is expected to be extended, to include emissions associated with shipping, road transport and buildings.

An individual sector's exposure to climate change depends not only on its direct GHG emissions but also on its energy intensity and its links with other sectors. Climate change mitigation measures have meant that a sector that uses a great deal of energy or has numerous inputs from high-emission sectors will foreseeably face a relatively higher increase in its production costs, while one that invoices a large share of its output to highly contaminating sectors will probably face a sharp fall in demand.

Input-output tables enable each sector's carbon footprint to be identified,[21] including both its direct and indirect GHG emissions (the latter, deriving from its energy intensity and participation in value chains). Chart 4.8 depicts this carbon footprint – direct and indirect GHG emissions per million euro of output – for the different economic sectors, distinguishing between those that are highly emission intensive (over 1,000 tonnes of CO_2 per million euro of output) and those that are not. Among the latter, construction, food and beverage preparation, hospitality and retail are noteworthy in that they have low direct emissions but a relatively high carbon footprint overall, owing to the indirect emissions stemming from their links to other contaminating sectors or to their higher relative share of the total GVA of the economy.

A general equilibrium sectoral model developed by the Banco de España makes it possible to assess the implications of Spanish industries' asymmetrical exposure to the green transition process. In particular, the Banco de España's CATS (CArbon Tax Sectoral) model[22] has a highly granular sectoral structure (51 non-energy industries and two energy industries (fuel and electricity)) which includes the cross-sectoral relationships contained in the input-output tables described above. Using this model, calibrated for the Spanish economy, the general equilibrium effects stemming from changes in the relative prices of the different economic sectors' products in response to any shock can be identified, together with the magnitude of the potential substitution processes between different intermediate inputs and consumer goods in the economy.

The model is primarily used to generate medium-term climate stress scenarios, to assess the different productive sectors' degree of exposure in the event of an increase in the price of emission allowances or an extension of EU-ETS coverage. In particular, in the event of an increase in the price of emission allowances similar to that observed in recent years (from approximately €25 per tonne of CO_2 in 2019 to almost €100 per tonne in early February 2022), the model predicts a cumulative decline after three years of 0.6% in Spanish GDP. If an extension of ETS coverage to include all productive sectors' emissions is added, the model predicts a fall of 1.3% in GDP after three years. In any event, as indicated earlier, the scale of these aggregate impacts must be interpreted with the utmost caution. In particular, the model does not include certain aspects that could be critical for a quantitative determination of the implications of the green transition for the economy overall; for instance, the possibility of a non-linear acceleration in technological change or in the implementation of short-term energy efficiency measures in response to large-scale shocks.[23] Also, as with other models, the results of the CATS model are highly

21 For more details on the methodology used to calculate each industry's carbon footprint, see Yamano and Guilhoto (2020).

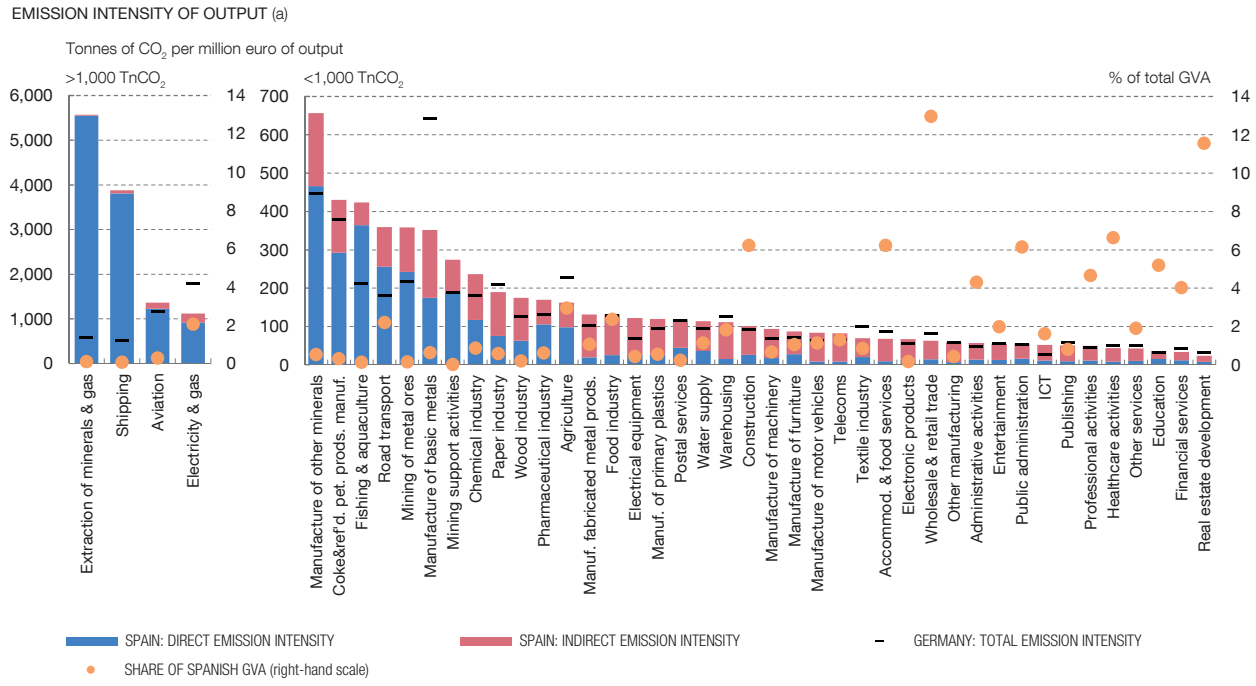
22 See Aguilar, González and Hurtado (2022), forthcoming.

23 In this respect, the simplification hypotheses that the CATS model applies to the energy sectors are a constraint, since they assume that all electricity generated is consumed in the country, while all oil is imported.

Chart 4.8

DIRECT AND INDIRECT GHG EMISSION INTENSITY IN SPAIN

Emission intensity by sector in Spain is highly uneven, both in the case of direct and indirect emissions. The latter stem from the use of inputs from other sectors, especially energy inputs. Of the four most emission intensive sectors, only electricity and gas supply, whose emission intensity is lower than in Germany, accounts for a significant share of Spanish GVA overall. Meanwhile, construction, food and beverage preparation, hospitality and retail are all noteworthy in that they have low direct emissions but a relatively high carbon footprint overall, owing to the indirect emissions stemming from their links to other contaminating sectors or to their higher relative share of the total GVA of the economy.



SOURCE: IMF Climate Dashboard.

a Direct and indirect emission intensity is calculated with data as at 2018 drawing on International Energy Agency (IEA) data on energy-related CO_2 emissions and the 2021 OECD Inter-Country Input-Output (ICIO) Tables.

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sensitive to certain elements that cannot be accurately assessed, such as the different economic sectors' capacity to substitute their inputs,[24] and how the tax revenue stemming from the ETS is used.[25] However, despite these limitations, the CATS model is particularly useful for a qualitative assessment of the potential sectoral asymmetries resulting from the green transition process. In this respect, as shown in Chart 4.9, under the first of the scenarios considered, i.e. an increase in the price of the ETS allowances, the sectors most affected, after the energy sectors, would be other non-metallic mineral products, aviation and paper. Under the second scenario, i.e. an increase in the price of the ETS allowances plus broader ETS coverage, the sectors most affected, in addition to the energy sectors, would be transport (shipping, aviation and road transport) and agriculture and fishing.

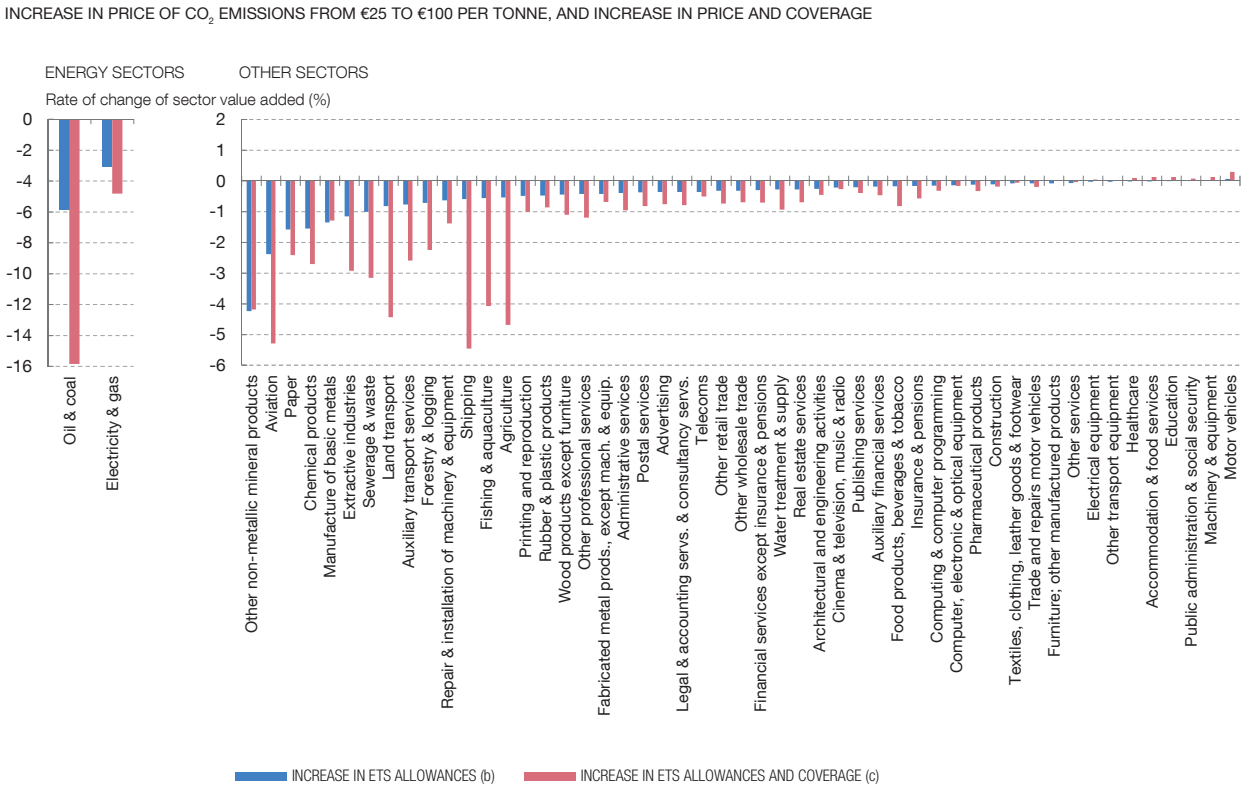
24 See Bachmann et al. (2022).

25 For instance, if this tax revenue is used to cut taxes on labour, the overall impact on GDP in the two scenarios analysed would be positive. Using a different model, Hinterlang et al. (2021) obtain a similar result for Germany. See the discussion in this respect in Section 4.1.

Chart 4.9

SECTORAL IMPACT OF ENVIRONMENTAL EMISSION POLICIES (USING THE CATS MODEL) (a)

An increase in the price of ETS emissions reduces activity in non-energy sectors such as building materials and other non-metal mineral products, aviation, paper and chemical products. If ETS coverage is extended, the greatest impact among the non-energy sectors would be in the various transport sectors (shipping, aviation and land transport), and agriculture and fishing. In both scenarios there would be a significant reduction in energy use (owing to their emission intensity), which would be most acute in the case of oil. Accordingly, higher emission prices accelerate the electrification of the economy.



SOURCE: Banco de España.

a See Aguilar et al. (2022).
b Increase in price of CO_2 emissions, from €25 to €100 per tonne.
c Increase in price of CO_2 emissions, from €25 to €100 per tonne, and extension of coverage of EU-ETS to include all the emissions of all the productive sectors.

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The CATS model also enables assessment of the extent to which the Spanish economy's sectoral structure and its productive sectors' emission intensity could affect green transition costs in Spain compared with those in other European countries. As Charts 4.7 and 4.8 show, there are some highly significant differences between the sectoral composition and emission intensity of Spain's industries and those of other European economies, such as the EU-27 average or Germany. Thus, for example, Spain's manufacturing industries tend to be more emission intensive than their German counterparts. However, the reverse is also true, for example, in electricity and gas supply, manufacture of basic metals or agriculture, where emission intensity in Spain is considerably lower than in the same industries in Germany. In turn, emission intensity in the services sector is more

closely aligned between the two economies. According to alternative CATS model calibrations, overall these differences would not mean that green transition risks would be significantly more or less costly for the Spanish economy than for other European economies. In other words, if Spain's sectoral structure and Spanish industries' emission intensity overall were the same as those of Germany or the EU-27 average, the aggregate economic impact of the simulated transition risks would continue to be very similar.

3.3 An unequal challenge for different types of firm

In late 2021 the Banco de España surveyed Spanish firms on their view of how climate change and the transition towards a more sustainable economy might affect them. The survey, in which some 5,000 firms took part, was conducted through an additional module to the Banco de España Business Activity Survey (EBAE). In this module, firms were asked about the expected impact associated with climate change and the green transition, the time horizon of that impact, the level of awareness and initiatives launched in this field, the main risks detected, and their view of the role that public policy should play in this process.

The survey showed that Spanish firms had a relatively optimistic perception of the direct impact of climate change on their activity, albeit with notable differences by economic sector.[26] Specifically, around 35% of the firms surveyed expected climate change to have a very negative impact (slightly less than 10% of the total) or a moderately negative impact (approximately 25% of the total) on their activity.[27] In any event, as was to be expected in light of the findings presented in Section 3.2, the response was very uneven across industries. Thus, in general, firms operating in higher GHG emission intensity sectors – such as transport, agriculture and manufacturing – tend to expect climate change to have a more negative impact on their activity (see Chart 4.10).[28]

In any event, within each sector, the smaller firms were less well prepared for these climate challenges. A large majority of smaller firms have still not assessed the impact that climate change and the green transition may have on their activity. In addition, of those that had carried out this assessment, the percentage of small firms that expected a negative impact was almost 8 percentage points (pp) higher than among the larger firms.

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26 For more details on the survey results, see Izquierdo and Montero (2022), forthcoming.

27 The percentage of all the firms surveyed that reported having carried out an assessment of these effects (approximately 65% of the total). Of this group of firms, 20% expected the impact to be positive, while the other 45% expected it to be neutral.

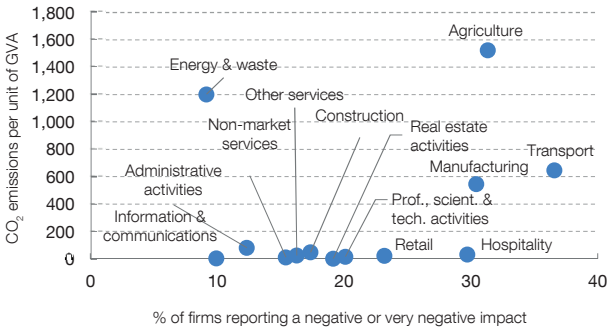
28 Energy sector firms reported that they were particularly well prepared for climate challenges; indeed, only 12% expected these challenges to have a negative impact on their activity.

Chart 4.10

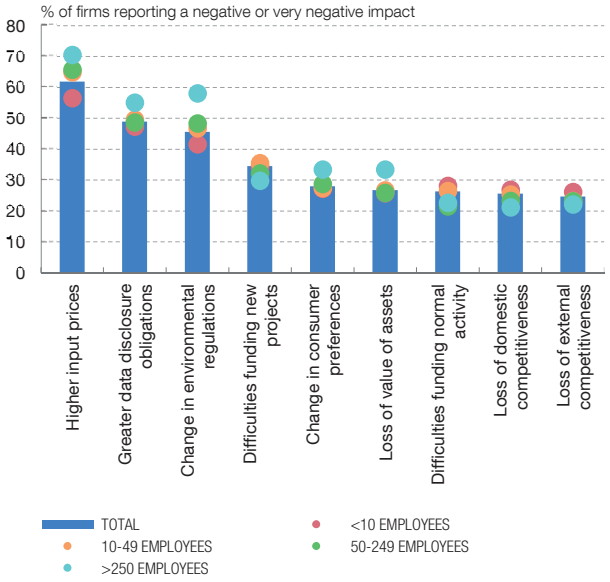
IMPACT OF CLIMATE CHANGE BY INDUSTRY AND RISKS DETECTED BY FIRMS

According to a survey conducted in 2021 by the Banco de España, asking for firms' views on how climate change and the transition towards a more sustainable economy might affect them, firms operating in higher GHG emission intensity sectors – such as transport, agriculture and manufacturing – tend to expect a more negative impact on their activity. The main risks detected by the firms were a potential increase in the price of energy inputs, greater reporting obligations and changes in environmental regulations.

1 IMPACT OF CLIMATE CHANGE AND EMISSIONS BY INDUSTRY



2 MAIN RISKS PERCEIVED BY FIRMS AND DIFFERENCES BY FIRM SIZE (a)



SOURCES: Banco de España (Climate module of 2021 Q4 EBAE) and Eurostat (2019).

a Size differences estimated after taking into account the impact of the industry in which the firms operate.

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Once the results were controlled for industry differences, the smaller firms were more vulnerable to the problems that climate change and the green transition could pose in terms of funding and loss of competitiveness (see Chart 4.10.2). Beyond the size differences, newly created firms were especially concerned about the potential loss of value of their assets, while more highly indebted firms expressed greater concern regarding potential difficulties in funding their normal activity or new projects to address the climate change challenge. For their part, less productive firms expressed more concern for the potential future funding and competitiveness problems, and for the possible increase in the price of their inputs.

Concern for the possible inflationary pressures that the green transition process could create was, in absolute terms, the risk considered most relevant for their activity by the highest percentage of firms (see Chart 4.10.2). This could reflect the sharp surge in prices observed worldwide in recent quarters (for more details on this inflationary episode, see Chapter 3 of this report). Indeed, part of the recent inflationary episode could stem from the ongoing climate transition, for instance, insofar as it has been partially associated with the supply shortage owing to the closure of certain

highly contaminating plants in China, the higher demand for gas as the resolve to drive coal out of the energy mix has quickened, and very sharp price rises in certain commodities (such as lithium) used in the manufacture of electric batteries.

Another of the main risks associated with the green transition identified by firms was the possibility of having to bear a heavier administrative burden linked to new data disclosure obligations. In order to achieve efficient green transition progress, the volume, quality and standardisation of the data available on firms' granular exposure to the different climate challenges – both in Spain and the rest of Europe – must be enhanced. This is crucial, not only for the firms themselves, for example when it comes to making investment decisions, but also for the public authorities, for instance to design possible offset policies (see Section 4.2), and for the financial system, to ensure that funding flows can be efficiently assigned between sectors and firms (see Sections 5 and 6 below).

In this respect, the annual "non-financial statement" (NFS) required of Spanish firms, whose content and scope was extended significantly following the entry into force of Law 11/2018,[29] has substantial scope for improvement. In its supervision of the non-financial statements of entities whose shares are admitted to trading on regulated markets, the National Securities Market Commission (CNMV) identifies each year the areas in which more detailed breakdowns are required and sets out the aspects where enhanced data quality and comparability are needed.[30] Nevertheless, under the current regulations, three essential problems persist: there are no harmonised standards and reporting is not in digital format, which hinders large-scale data processing and cross-firm comparison; firms that belong to a group can be exempted from submitting individual data if the consolidated European group to which they belong provides such data, which means that the (essential) national breakdown is lost; and reporting is not obligatory for small and medium firms (fewer than 250 employees), which poses a challenge as it means their main indicators must be estimated. To remedy the current data shortcomings, strategies need to be designed to enable the necessary data to be compiled without imposing an excessive cost on firms, especially small ones.

At the domestic level, Article 32 of the Spanish Climate Change Law will also entail climate change risk disclosure requirements for entities whose shares are admitted to trading on regulated markets and for credit institutions, insurers and reinsurers, and firms according to size. Every two years, the Banco

29 Law 11/2018 transposes Directive 2014/95/EU of the European Parliament and of the Council of 22 October 2014 amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups. Since 2021, some 3,800 non-financial firms (those that have more than 250 employees, which is a more demanding requirement than the 500 employees envisaged in the Directive) are required to report this information in Spain, although they may be exempted if they belong to a European group.

30 The results of the CNMV's supervision of the non-financial statements of entities issuing shares are summarised in the *"Informe sobre la supervisión de la información no financiera del ejercicio 2020 y principales áreas de revisión del ejercicio siguiente"* (Spanish version only).

de España, the CNMV and the Directorate General of Insurance and Pension Funds (DGSFP), each within their respective competences, will together draft a report on the degree of alignment with the climate change goals set out in the Paris Agreement and in EU regulations, based on future scenarios, and on the risk assessment for the Spanish financial system associated with climate change and the policies to fight it. This report will be coordinated by AMCESFI, the Spanish macroprudential authority.

As part of the European Green Deal, the European Commission has launched a process for reform of the Non-Financial Reporting Directive (NFRD). The proposal for a Corporate Sustainability Reporting Directive (CSRD) was presented in April 2021. It has now passed through several stages and is to be submitted for debate in the European Parliament in spring 2022 for final approval. The main new features in the CSRD are the adoption of reporting standards and the requirement that reporting (compulsory for large European firms) be in digital format. The proposal includes the mandate given to the European Financial Reporting Advisory Group (EFRAG) to draft the European sustainability standards. The first set of standards will be common to all economic sectors, will be approved by means of a Delegated Regulation and will foreseeably come into force from 2024. It is essential that these sustainability standards are compatible with the international standards being drafted by the International Sustainability Standards Board (ISSB).

3.4 The asymmetric impact of the green transition for households

The physical and transition risks associated with climate change could have a highly uneven impact on individuals, according not only to where they live[31] but also, among other aspects, to their health, age, educational level and income. Thus, for example, many studies indicate that both global warming and high air pollution levels (closely linked to GHG emissions) could have a considerable negative impact on health, especially among children, the elderly and persons suffering from chronic diseases.[32] In the same vein, it seems likely that higher income and higher educational level households could find it easier to adopt measures that would enable them to better adapt to the different climate change risks. In particular, more highly educated individuals would be better prepared to face episodes of large-scale reallocation of economic activity between firms and sectors[33] which, as described in Sections 3.2 and 3.3 above, will foreseeably arise in the coming years in the framework of the transition towards a more sustainable growth model.

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31 According to the White House (2021), between 2008 and 2016 an average of 21.5 million people worldwide were forcibly displaced each year by extreme weather events. Rigaud et al. (2018) foresee that, in Latin America, southern Asia and Sub-Saharan Africa, 2.8% of the population will be displaced as a result of extreme weather events by 2050. Also, according to Desmet et al. (2021), solely because of rising sea levels, 1.4% of the world population will be displaced by the year 2200.

32 See, for example, Holub, Hospido and Wagner (2020), Chay and Greenstone (2003) and Schlenker and Reed-Walker (2016).

33 See, for example, Notowidigo (2020), Charles et al. (2018) and Lamo et al. (2011).

Between 2006 and 2020, the consumption pattern of the average Spanish household generated 271 kg of CO_2 per €1,000 of expenditure. This takes into account all the pollution generated throughout the production process and is obtained by combining the Household Budget Survey, information from the input-output tables, and the air emission accounts for each industry. At an itemised level it is observed that 20% of this carbon footprint stems from the consumption of goods produced by the electricity, gas, steam and air conditioning supply sector, while a further 18% is associated with expenditure on goods produced by the food, beverages and tobacco industry. Between 2012 and 2020 the average amount of CO_2 per euro spent fell by 6% in Spain, from 281 kg to 264 kg of CO_2 per €1,000 spent. An international comparison shows that the carbon footprint of average expenditure in Spain is significantly lower than in the United States. In particular, between 2006 and 2018, the consumption pattern of the average US household generated 832 kg of CO_2 per $1000 spent, three times more than in Spain, essentially because the production process of the US electricity, gas and water sector is much more emission intensive.

Nevertheless, the consumption pattern of lower income households in Spain has a higher carbon content. In particular, compared with households that receive no income, which are those with the most intensive consumption of high CO_2 emission goods, the consumption spend of Spanish households in the bottom decile of the income distribution entails slightly fewer emissions: some 1.15 kg of CO_2 less per €1,000 spent. By contrast, households in the top income decile are much less emission intensive: 5.63 kg of CO_2 less per €1,000 spent compared with non-income households (see Chart 4.11.1). The reason for this negative correlation between consumption emission intensity and income is essentially that the percentage of expenditure on high-emission industries[34] declines with income, from 8.7% for households with income between the 10th and 50th percentiles of the distribution, to 8.2% for households in the top income decile (see Chart 4.11.2).

CO_2 emission intensity per euro spent also varies sharply with age. Thus, between 2006 and 2020, Spanish households whose reference person was around 20 years old had a larger expenditure carbon footprint – 19 kg of CO_2 more per €1,000 spent – than those whose reference person was 75 years old. The most emission intensive age group is around 40 years old: their expenditure carbon footprint amounts to 24 kg of CO_2 more per €1,000 spent than that of 75-year olds (see Chart 4.11.3). Once again, the differences in consumption emission intensity between age groups are mainly linked to the different share of expenditure that each type of household devotes to high emission sectors (see Chart 4.11.4).

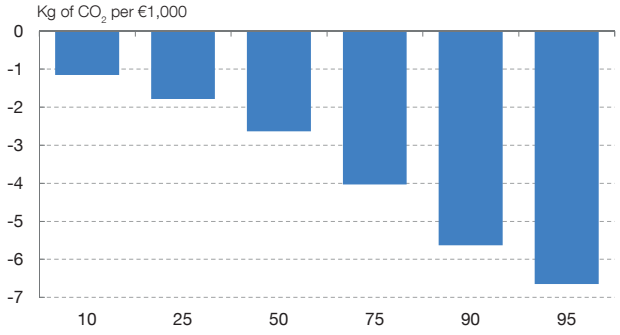
34 These are the industries whose emission intensity (measured as kg of CO_2 per €1,000 of output) is higher than the average for all industries (see Chart 4.8). They include, in particular, fishing and aquaculture, manufacture of coke and refined petroleum products, manufacture of other non-metallic mineral products, electricity, gas, steam and air conditioning supply, shipping and river transport and aviation.

Chart 4.11

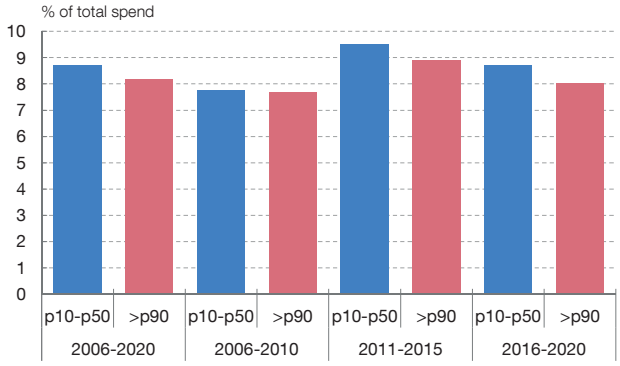
EMISSION INTENSITY AND PROPORTION OF SPANISH HOUSEHOLDS' EXPENDITURE ON HIGH EMISSION INDUSTRIES

Between 2006 and 2020, the consumption pattern of lower income Spanish households had a higher carbon content. Emission intensity peaks around 40 years of age and falls off swiftly thereafter. The proportion of expenditure on high emission industries is largest among households with a lower level of education, those that are not home-owners, larger households and those that live in smaller municipalities.

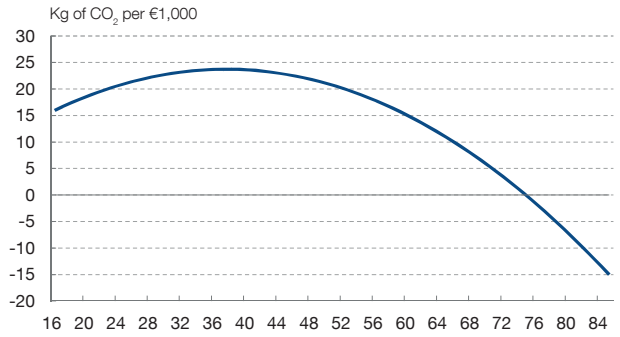
1 CHANGE IN EMISSION INTENSITY BY INCOME DECILE (a) (b)



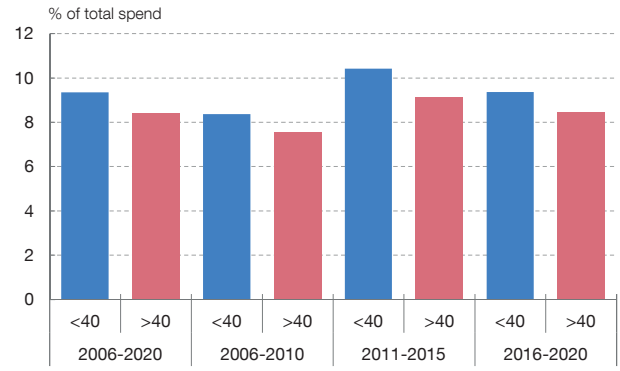
2 PROPORTION OF EXPENDITURE ON HIGH EMISSION INDUSTRIES BY INCOME DECILE (a)



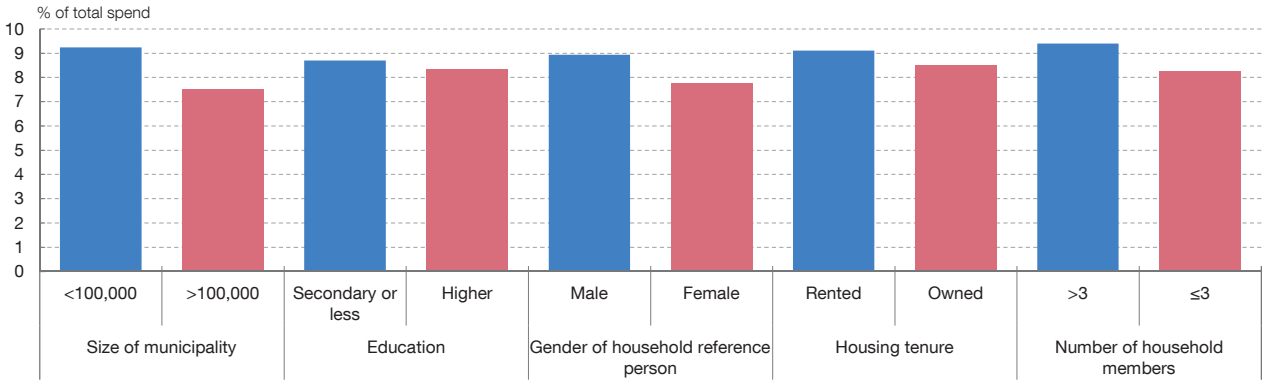
3 CHANGE IN EMISSION INTENSITY BY AGE GROUP (c) (d)



4 PROPORTION OF EXPENDITURE ON HIGH EMISSION INDUSTRIES BY AGE GROUP (c)



5 PROPORTION OF EXPENDITURE ON HIGH EMISSION INDUSTRIES BY OTHER SOCIOECONOMIC FACTORS



SOURCES: INE and Banco de España.

a Household income.
b Difference in emission intensity compared with non-income households.
c Age of household reference person.
d Difference in emission intensity compared with households whose reference person was around 75 years old.

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The amount of emissions per euro spent is also higher among Spanish households with a lower level of education, those that are not home-owners, larger households and those that live in smaller municipalities.[35] In particular, as Chart 4.11.5 shows, between 2006 and 2020 households living in municipalities with under 100,000 inhabitants devoted 9.2% of their spending to high emission sectors, compared with 7.5% for households living in larger municipalities. Moreover, the proportion of expenditure devoted to high emission sectors among households with lower secondary education or less was 8.6% in the same period, 0.3 pp more than among households with a higher educational level. In turn, households whose reference person was male devoted 9% of their expenditure to high emission goods, compared with 7.8% for households whose reference person was female.

To sum up, there are clear signs that the green transition process may affect different types of households very differently. In particular, the foreseeable increase in the coming years in the price of the most contaminating goods and services will likely have a more pronounced impact on low income households, those whose reference person is in the 35 to 45 age group, those that live in rural areas, households with a lower educational level and larger households.

In view of all the above, it would be advisable for public policies to shape mechanisms to temporarily compensate the more vulnerable households within each of these groups for the higher costs that the green transition could entail for them (see Section 4 below). Aside from equity considerations, the need to roll out compensatory measures of this kind would also be justified, to achieve the sufficient and necessary social consensus required to undertake the deep structural transformation that the economy and society need to address in the coming years to face the important climate challenges ahead.

4 The role of public policy in Spain

Public policy, particularly in terms of fiscal matters and the regulation of economic activity, has a pivotal role to play in the green transition. First, as it is governments and parliaments that have the legitimacy required to determine when and how the economy and society must undertake the far-reaching structural transformation needed to mitigate and adapt to climate change. Second, because the public authorities, when compared with other agents, have at their disposal the most comprehensive and granular set of instruments best suited to meeting the targets set as efficiently as possible, while also taking into account equity considerations. In any event, in the midst of an extraordinarily uncertain structural transformation process, it is essential that public policy provide certainty to the

35 See Basso and Pidkuyko (2022), and Basso, Jaimes and Rachedi (2022).

different economic agents, while facilitating a stable operational framework within which they can make their consumption, investment and production-related decisions with every assurance.

4.1 Green taxation

There is widespread consensus that green taxation is the most efficient means of ensuring that economic agents internalise the climate-related consequences of their decisions. Indeed, a wealth of academic literature attests to the fact that environmental or green taxes are the instrument best able to ensure that the prices the different economic agents face in their production and consumption-related decisions factor in not only the private cost, but also the social cost deriving from the environmental impact of such decisions.[36] With this in mind, in recent years carbon taxes have taken centre stage among the various initiatives launched by authorities across the globe to drive the green transition. Particularly noteworthy is the creation and subsequent expansion of various emissions trading systems (ETS), as well as the adjustments made to a series of green taxes, for instance, those levied on energy, hydrocarbons and transport.

Spain consistently features among the EU-27 economies in which green taxation raises the least revenue in relative terms (see Chart 4.12). Over the past two decades, when compared with the arithmetic mean of the EU-27, Spain's revenue gap in this regard has remained stable at around 1 pp. Specifically, in 2019 Spain posted a negative differential of 0.8 pp. Lower taxes on energy (and hydrocarbons in particular) accounted for 67% of this lower revenue.

Although hydrocarbon taxes are lower in Spain than elsewhere, tax rates have not risen in real terms in recent years (see Chart 4.13). The nominal rates of the excise duties on the consumption of standard petrol and diesel in Spain (a fixed amount in euro cents per litre) have been adjusted periodically since 1995. However, this has not led to any increase in the tax rate on such consumption in real terms, which would explain why this rate lies below that of the EU economies as a whole.[37]

Green taxes in Spain must be strengthened and their design improved if the country's economy is to forge ahead efficiently with the green transition. Published in March 2022 and prepared by a committee of independent experts at the request of the Ministry of Finance, with the assistance of the Spanish Institute of Fiscal Studies, the White Paper on the Reform of the Tax System[38] represents an essential starting point from which to assess a possible wholesale overhaul of

36 See, for example, Pigou (1932), Fullerton et al. (2010) and Stiglitz et al. (2017).

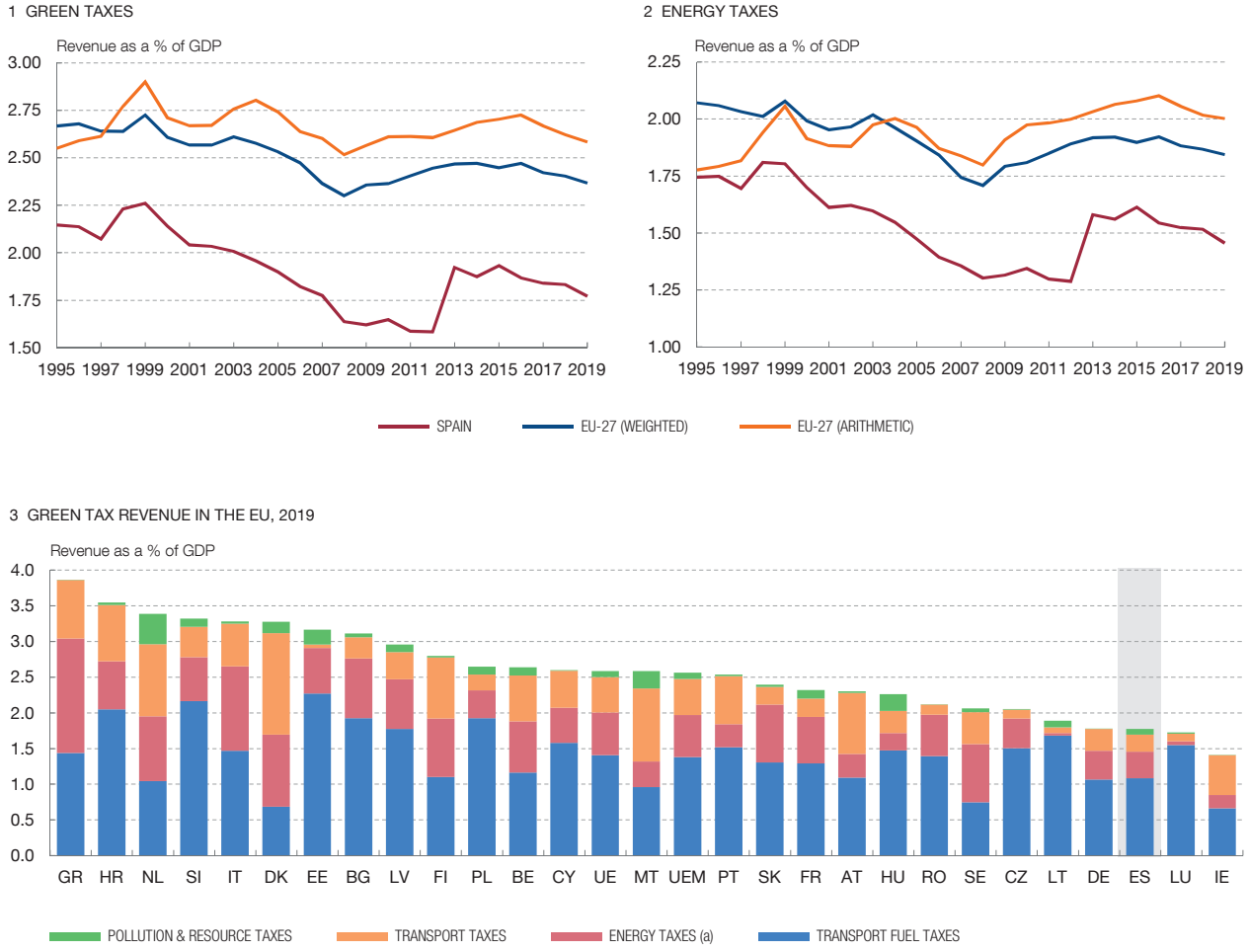
37 The rates on such taxes are a fixed amount of euro cents per litre of fuel, and any international comparison should therefore be adjusted for purchasing power parity (PPP).

38 See the White Paper on the Reform of the Tax System (only available in Spanish).

Chart 4.12

GREEN TAXATION IN SPAIN IN THE CONTEXT OF THE EU-27

Over the past two decades, Spain has consistently featured among the EU 27 economies in which environmental taxation raises the least revenue in relative terms. Spain's revenue gap with respect to the EU-27 average can largely be explained by the lower taxes on energy and, in particular, on hydrocarbons. A third of Spain's revenue gap is due to lower transport taxes.



SOURCE: Eurostat.

a Not including transport fuel.

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Spain's green taxes. Specifically, the report sets out a broad array of specific environmental proposals and recommendations that, taken as a whole, seek to encourage changes in household equipment and consumption and mobility patterns, as well as the development and adoption of technologies, capital goods and operational changes by firms, enabling the country to more efficiently reduce its pollutant emissions.

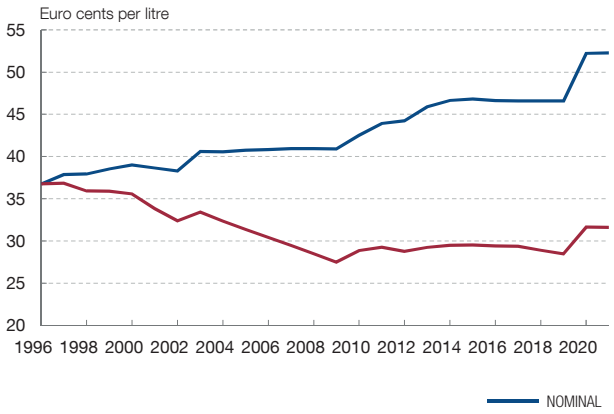
If used efficiently, the revenue raised by higher environmental taxes could significantly reduce the transition costs for the economy overall. Both the proposals detailed in the White Paper and Spain's sizeable shortfall in terms of green

Chart 4.13

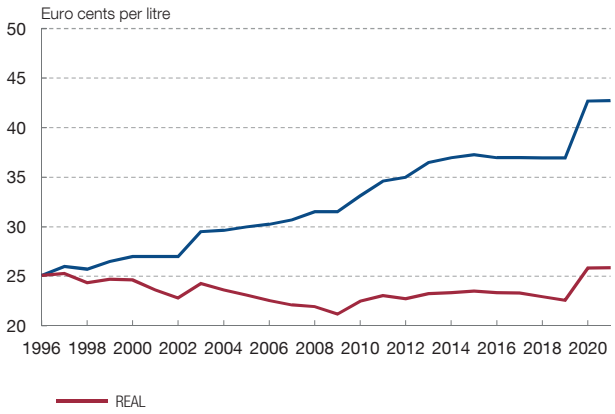
CHANGES IN THE RATES OF EXCISE DUTIES ON HYDROCARBONS (1995-2020)

Excise duties on hydrocarbons did not rise in Spain in real terms between 1995 and 2020. When compared with the EU-27 economies, the Spanish tax rates on petrol and diesel, adjusted for purchasing power parity (PPP), are below the EU-27 average.

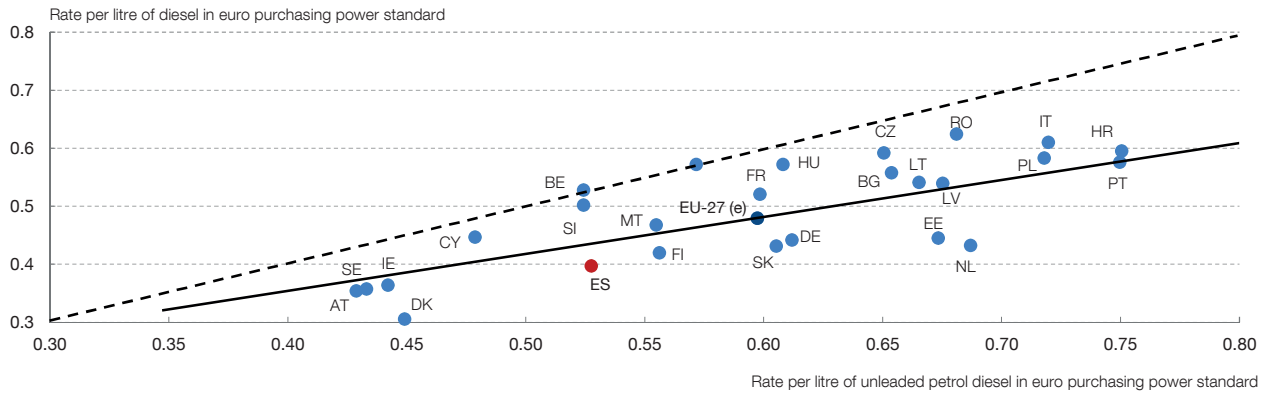
1 PETROL EXCISE DUTY RATES IN SPAIN (a) (b)



2 STANDARD DIESEL EXCISE DUTY RATES IN SPAIN (a) (b)



3 HYDROCARBON TAX RATES ADJUSTED FOR PPP IN THE EU-27 ECONOMIES, 2020 (c) (d)



SOURCES: Informe Anual de Recaudación Tributaria del año 2020 (AEAT), Excise Duties Tables - Part II Energy products and Electricity (European Commission 2020) and Eurostat (2021).

a The rates include both the general and special tax rates. The special rate includes the regional tranche, which has been homogeneous for all Spanish regions since 2019.
b The real rates are obtained by deflating the nominal rate by the household and NPISH final consumption expenditure deflator (1995 Index = 100).
c Average rates on consumption subject to excise duties. The nominal rates are adjusted by the price level indicator (PLI) for final household expenditure (EU 27 = 100 in 2020) that results from dividing the Purchasing Power Parity (PPP) indicators by the nominal exchange rate.
d Regressions with average values of the rates, adjusted for PPP, in force at 1 July 2020 in the EU-27 economies.
e EU-27 refers to the arithmetic mean of the rates, adjusted for PPP, in the EU-27 economies at 1 July 2020. In the case of Spain, the regional tranche of the special rate, amounting to 0.048 euro cents per litre, is not included.

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tax receipts when compared with its neighbouring economies point to ample room for increasing environmental tax revenue in the country's economy. It is worth stressing here that the revenue-raising potential of some of the tax initiatives that could be rolled out in this regard could significantly offset the short-term costs of the green transition for the Spanish economy. First, the higher environmental tax revenue could be used to reduce other taxes that significantly distort overall economic

activity. For instance, some studies[39] have noted that using part of the additional green tax revenue raised to cut taxes on labour could have a considerable expansionary impact on activity. Meanwhile, the extra receipts from higher environmental taxes could be used to deploy policies to offset the short-term transition costs for the most vulnerable firms and households[40] (see Section 4.2). It should be borne in mind, however, that if the green transition is successful, a significant portion of the higher green tax revenue raised in the short term would be essentially temporary, declining gradually as households and firms adapted to a more sustainable growth model.

4.2 The need to address distributional aspects

It seems unlikely that the green transition will advance at a good pace if the markedly asymmetric impact this process will have on different types of sector, firm and household is not factored in and mitigated. Indeed, as noted in Section 3, climate change and the transition to a more sustainable economy will have highly heterogeneous effects across regions, sectors, firms and households. In fact, such processes are likely to have a notably adverse impact on certain groups of firms and households that are already particularly vulnerable (see Sections 3.3 and 3.4, respectively), among other reasons because such groups will be relatively harder hit by any increase in green taxes, owing to their consumption and production patterns (see Section 4.1). With this in mind, it is important to note that while society as a whole may be willing to act decisively to address the challenges posed by the green transition (as borne out by various surveys[41]), particular attention must be paid, for reasons of both efficiency and equity, to mitigating the distributional effects this process will entail. Otherwise, not only may the economic costs of the green transition be higher, but the speed and ambition of the process could also be conditioned by potentially disruptive episodes of social unrest.

Aware of the need to take the distributional aspects associated with the fight against climate change into account, the authorities have come up with various mechanisms to ensure a more equitable transition. For instance, the European Union has created a Just Transition Fund to adopt potential measures to compensate the regions hardest hit by the green transition.[42] Meanwhile, Spain has approved a Just Transition Strategy, which envisages a raft of initiatives for softening the adverse impact of the shift towards a more sustainable economic model on certain groups.[43]

39 See, for example, Hinterlang et al. (2021), Aguilar et al. (2022) and Delgado and Santabárbara (2022).

40 See, for example, Benkhodja et al. (2022).

41 See, for example, Centro de Investigaciones Sociológicas (2021) (only available in Spanish).

42 See European Commission (2020b).

43 See the Just Transition Strategy.

In any event, any necessary offsetting measures to be rolled out in future must be carefully designed to ensure a targeted approach, without undermining the incentives to reduce pollutant emissions. In particular, any offsetting measures targeting households should preferably be framed via personal income tax and should be dependent on household income, so as not to alter the relative price signs deriving from taxes in the overall economy. Moreover, these transfers could be made conditional on the need to make consumption and investment decisions in keeping with the transition towards a more sustainable economic and social model. These would take the form of "green cheques", to be used, for instance, for investment in equipment that helps reduce GHG emissions.

4.3 Public investment and subsidies

Aside from using green taxes to discourage the most environmentally harmful activities, fiscal policy also has a key role to play in stimulating the massive investment required to facilitate the green transition. In order to meet the climate targets set out in the European Green Deal (including a 55% reduction in GHG emissions by 2030), the European Commission estimates that additional investment of €520 billion a year will be required up to 2030.[44] Along similar lines, Spain's Climate Change Law seeks to mobilise €200 billion between 2021 and 2030 to boost, inter alia, investment in the electricity, transport and residential sectors.

Public investment, particularly in core research, must be a cornerstone of the green transition. In a context of tremendous uncertainty as to which technologies might drive the future green transition, and of investment from which there may be little direct benefit for investors, public investment has a pivotal role to play in driving the necessary structural transformation of the economy. Moreover, the academic literature notes that it is precisely in a climate such as the current one that public investment exerts the strongest pull on private investment.[45]

In any event, given the sheer scale of the investment needed, alongside environmental taxes and public investment, subsidies should also be made available to encourage private investment in green technologies. In this regard, Acemoglu et al. (2016) suggest that, given the relative advantage (in general terms) currently enjoyed by dirty technologies over their greener counterparts, taxes on the most environmentally harmful activities should be combined with subsidies for investment in new, cleaner technologies. This would prevent any delay in the adoption of such new technologies, while at the same time avoiding an excessive hike in green taxes that could cause very significant economic distortions.

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44 See European Commission (2022).

45 See, for example, Alloza, Leiva-León and Urtasun (2022), forthcoming.

The Recovery, Transformation and Resilience Plan (RTRP) should act as a key lever for driving public and private investment in Spain in the coming years. Of the €69.5 billion earmarked under the Spanish RTRP over the next six years (within the framework of the NGEU programme), more than €27 billion is expected to be set aside to support the green transition. In particular, there are plans to invest over €6.8 billion to improve the energy efficiency of public and private buildings, alongside €13.2 billion earmarked for sustainable urban and long-distance mobility, for example in the form of programmes including incentives for the purchase of electric vehicles and the installation of recharging points, for upgrading railway infrastructure and for developing urban public transport. Also contemplated is a drive towards the decarbonisation of the energy sector, with a €6.4 billion-plus investment in clean technologies and infrastructure.

Fully harnessing the transformational capacity of the NGEU programme will call for decisive action both in Spain and at EU level. Indeed, as noted in Chapter 2 of this report, a rigorous selection of the investment projects to be funded will be required if Spain is to make the most of this programme, while supplementing such investments with the roll-out of an ambitious package of structural reforms. Moreover, from an EU standpoint, it may be advisable to extend the time frame envisaged for loan applications under the NGEU programme, to limit the risk that any of the investments required to press ahead with the fight against climate change, as well as with the digitalisation and the strategic autonomy of the EU, might fall by the wayside. Elsewhere, outside this programme, new tools should also be developed at EU level to enable certain structural investment needs that are shared by the different EU economies (such as those associated with climate change) to be funded on a permanent basis.

4.4 Other government measures and the need for ongoing assessment of policies

Aside from fiscal policy, the public authorities can also turn to other regulatory measures to further the green transition. Notable examples of such actions include, for example, initiatives establishing air quality targets, such as the European Air Quality Directive (currently under review), the energy performance standards for the development and renovation of buildings, the rules laying down certain vehicle manufacturing standards[46] and the penetration targets for the use of renewable energy sources to generate electricity.

In any event, meeting the environmental targets set without wasting resources and avoiding any unwanted effects on activity calls for the ongoing assessment

46 For example, Regulation (EU) 2019/631 establishes CO_2 emission standards for new passenger cars and for new light commercial vehicles registered in the Union.

of public policies. While all economic policies should, in general, undergo thorough evaluation, this is all the more relevant in the area of climate change and the green transition, since many of the instruments proposed are relatively new and the direction and scale of their possible impact are still highly uncertain. In this regard, as noted in Section 3.3 above, the proper evaluation of public policies requires an increase in the amount of granular information available on environmental matters and access to that information for researchers. By way of example, detailed below are some recent Banco de España research papers that allow the implications of certain economic policy initiatives to be assessed.

As part of the fight against climate change, the fight against air pollution could have a very significant impact on the health and labour market participation of the Spanish population. In particular, Holub et al. (2020) show that, for the period running from 2005 to 2014, there is a positive correlation between the levels of air pollution in the main Spanish cities and the amount of sick leave taken by employees. Moreover, this positive correlation is significantly more pronounced in the largest cities in the sample (over 500,000 inhabitants). According to the estimates in this study, a reduction in air pollution in Spain during the period analysed led to an increase in the labour supply equivalent to an extra 5.58 million days' work and a saving of at least €505 million over the entire period.[47]

In Spain, the impact of subsidies to purchase electric vehicles has been highly uneven across municipalities. Notable among the initiatives rolled out in recent years to drive the green transition (both in Spain and in many other advanced economies) has been support for the purchase of low-emission vehicles. For instance, since February 2009 the Spanish Government has budgeted close to €1 billion in various rounds of the MOVES programme. Nonetheless, Anghel and Muñoz (2022) note that, up until the implementation of the most recent programme (MOVES III), these incentives for the purchase of low-emission vehicles did not lead to a significant increase in the number of these vehicles registered in Spain, once adjusted for the secular trend towards the greater presence of such vehicles on the market. This finding tallies with those of Diamond (2009), who finds little correlation between the purchase of electric vehicles in the United States and the subsidies offered by various US states, and of Münzel et al. (2019) who, after analysing programmes to encourage purchases of electric vehicles in various European countries, find a positive, albeit very limited impact on registration numbers. Nevertheless, such programmes do appear to have had a positive impact on the probability of electric vehicle sales in Spanish municipalities with a greater number of recharging points and higher income per capita.

47 This calculation does not factor in the possible additional benefits in terms of a reduction in mortality and in other medical treatment-related costs. Given that the impact of air quality on the labour supply is greater among workers in worse health or with chronic illnesses, these additional effects could be substantial.

While investment in renewable energy sources could have a positive impact on overall employment, this need not necessarily be apparent at local level. In particular, Fabra et al. (2022) find evidence that Spanish municipalities that have received investments in solar or wind farms in recent years have not generally seen any significant decline in local unemployment.

5 The role of the financial system

In order to mobilise the huge amount of funds required both to combat climate change and for the green transition, it is essential that the financial system play an active role. Regardless of any initiatives that may be developed by the public authorities (in the areas of economic regulation and fiscal policy) to deter conduct that may increase negative environmental externalities and to encourage sustainable investment, the fact remains that it is the financial system as a whole (from banks to institutional investors and other financial intermediaries) that plays a key role in channelling the funds that such actions require across activities, sectors, firms and households. To do so efficiently, it is essential that all participants in the financial system and the capital markets are able to accurately identify the extent to which they and the other economic agents are exposed to the various physical and transition risks associated with climate change, and that they actively factor such information into their risk management.

To enable the financial system to act as a lever for the transition to a more sustainable economy, recent years have seen the roll-out of a wide range of initiatives in a variety of spheres.[48] Many of these initiatives essentially seek to increase the total amount of information available on economic agents' exposure to climate change-related physical and transition risks. Noteworthy examples of these initiatives include the voluntary recommendations prepared by the Task Force on Climate-Related Financial Disclosures, which seek to help businesses disclose information on climate-related risks and opportunities,[49] and the work performed by the European Commission since 2018 under the action plan for financing sustainable growth, in particular, the implementation of the Sustainable Finance Disclosure Regulation (SFDR)[50] and the proposal for a Corporate Sustainability Reporting Directive (CSRD), which will change the current requirements under the Non-Financial Reporting Directive.

Some of these initiatives are geared towards establishing and harmonising the way the financial system needs to assess and process the risks posed by climate change and the green transition. At a global level, particularly noteworthy examples of such initiatives include those developed under the United Nations

48 See González (2021a).

49 See Task Force on Climate-related Financial Disclosures (2017).

50 See Regulation (EU) 2019/2088 of the European Parliament and of the Council of 27 November 2019 on sustainability-related disclosures in the financial services sector.

Environment Programme Finance Initiative (UNEP Fi), such as the Principles for Responsible Investment, the Principles for Responsible Banking and the Principles for Sustainable Insurance. At the European level, the initiatives notably include the development of a European taxonomy of environmentally sustainable economic activities. Also worth noting is the proposal for a Directive on corporate sustainability due diligence.[51] Moreover, from a supervisory and financial stability standpoint, various supervisory guidelines have been drafted and work has begun on stress-testing of banks, as a learning exercise, in the face of a potential worsening of climate risks (see Sections 6.2 and 6.3 for more details).

In the wake of these institutional initiatives, but also, above all, as a result of a growing, genuine interest on the part of investors, recent years have seen an extraordinary boom in sustainable finance. This has led to the emergence and development of new financial instruments, such as green bonds, social bonds, sustainability bonds and sustainability-linked bonds.[52] As Chart 4.14.1 shows, between 2013 and 2021 (the latest information available), the volume of funds channelled through these green and sustainable instruments on international bond markets increased very significantly, particularly since 2019. This growth was equally notable in the case of Spanish issuers (see Chart 4.14.2). Specifically, green bond issuances rose by 83% in 2021 and in September 2021 the Spanish Treasury made its first ever green bond issue.

On the capital markets, a key current question is whether the various financial assets fully price in all of the climate risks to which they are exposed. Otherwise, the problem would be twofold. First, any assets for which the climate risks are underestimated, or the benefits of the green transition are overestimated, could suffer a sharp price correction at any time. Second, this would distort the allocation of resources across activities, sectors and firms, thereby hindering the speed and efficiency of the green transition. In any event, Marqués and Romo (2018) note that, to date, the academic literature has not reached a definitive conclusion on whether or not the climate risks priced into the different financial assets are currently being accurately assessed.[53]

This notwithstanding, recent bond market developments point to the existence of something of a "green premium". For example, Gimeno and Sols (2020) find that, in the case of the European Investment Bank (EIB) and the

51 This proposal seeks to foster sustainable and responsible business conduct throughout global supply chains.

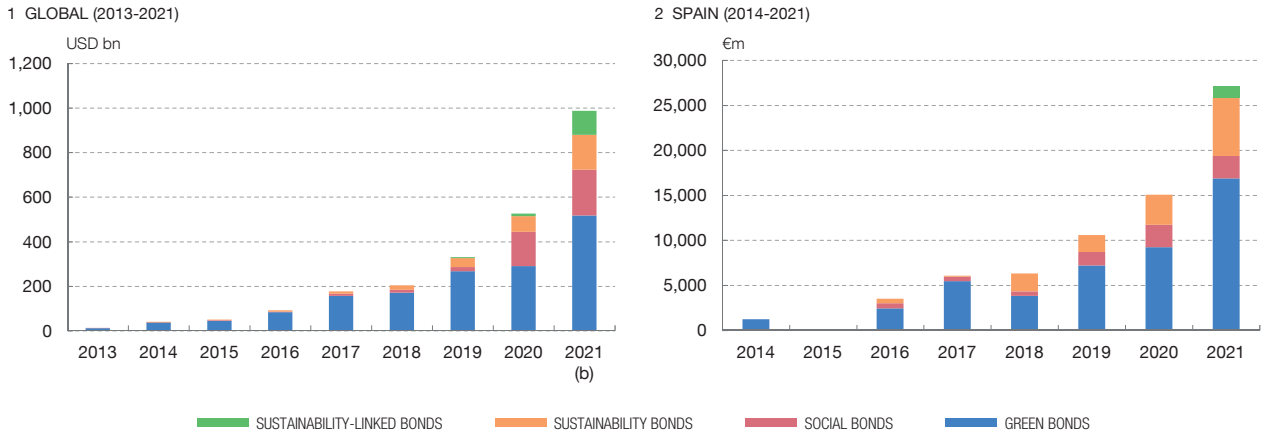
52 See González and Núñez (2021). A green bond is one whose funds are earmarked for financing projects that are directly related to sustainability, the preservation of natural resources and the transition to a low-carbon economy. In the case of social bonds, the proceeds are allocated to a range of social projects that, for example, seek to promote health or education and to positively impact communities. A sustainability bond is a bond whose proceeds are used for environmentally sustainable purposes, combining green and social projects. Lastly, a sustainability-linked bond is one whose financial and/or structural characteristics can vary depending on whether the issuer meets a pre-defined (environmental, social or governance-related) sustainability target.

53 For instance, Monnin (2018), Hong, Li and Xu (2019) and Kumar, Xin and Zhang (2019) present evidence of inaccurate climate risk assessments in carbon intensive assets. However, Griffin et al. (2015) and Gimeno and González (2022) suggest that financial markets are alert to climate-related news.

Chart 4.14

GREEN AND SUSTAINABLE BONDS (a)

Recent years have seen a considerable increase in the volume of funds in the international bond markets channelled through a range of green and sustainable instruments, both globally and in Spain.



SOURCES: González and Núñez (2021) with figures from IFF, Sustainable Debt Monitor & CBI and Dealogic.

a A green bond is one whose funds are earmarked for financing projects that are directly related to sustainability, the preservation of natural resources and the transition to a low-carbon economy. In the case of social bonds, the proceeds are allocated to a range of social projects that, for example, seek to promote health or education and to positively impact communities. A sustainability bond is a bond whose proceeds are used for environmentally sustainable purposes, combining green and social projects. Lastly, a sustainability-linked bond is one whose financial and/or structural characteristics can vary depending on whether the issuer meets a pre-defined (environmental, social or governance-related) sustainability target.

b Provisional figures.

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Kreditanstalt für Wiederaufbau (KfW), green bonds have in recent years posted a negative yield spread over conventional bonds from the same issuer (see Chart 4.15.1).

In the case of equities, some studies have identified a "green" factor that explains the excess stock market returns to an extent similar to or even greater than that explained by other factors commonly used in the literature. Specifically, Gimeno and González (2022) calculate a green factor as the return on a portfolio that maintains a long position in green assets and a short position in browner assets (see Chart 4.15.2),[54] and demonstrate that this factor (which has grown in importance since the Paris Agreement) offers relevant information for stock market investors.

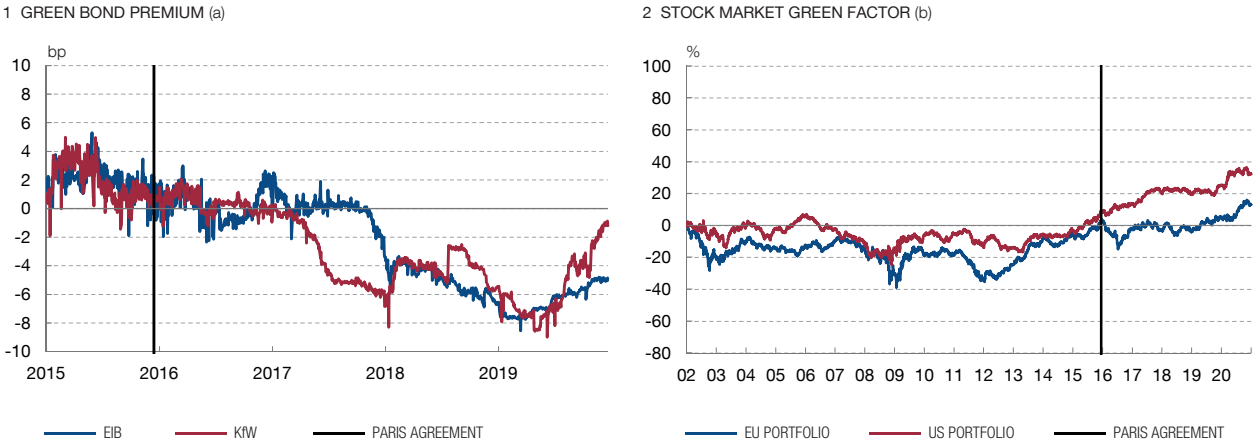
Looking ahead, the progress of sustainable finance will critically depend on improvements to the information available, on the headway made in defining international standards and on the ex post verification of the commitments undertaken by the issuers of sustainable instruments. The availability of information is key in this area, while the lack of standards that are uniform, as well as mandatory at global level, makes it very hard to assess the extent to which a firm is

54 The two subportfolios are created by giving equal weighting to 50 (60) firms on the S&P 500 (the broad EURO STOXX index), with small and large carbon footprints, and with equal weightings by sector and size.

Chart 4.15

YIELD SPREAD BETWEEN GREEN AND CONVENTIONAL ASSETS

The most recent bond market developments point to the existence of something of a “green" premium in favour of green bonds and a green factor in equities that explains much of the excess returns.



SOURCES: Gimeno and Sols (2020) and Gimeno and González (2022).

a The premium is calculated as the average of the spreads between the yield of the green bonds and the yield they should have based on the estimated yield curve for conventional bonds.

b The green factor is calculated as the yield on a portfolio with a long position in green assets and a short position in browner assets. The two sub-portfolios are created by giving equal weighting to 50 (60) firms on the S&P 500 and the broad EURO STOXX index with small and large carbon footprints, and controlling to ensure both are weighted equally by sector and size.

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environmentally sustainable. The existence of standards is of particular importance in financial markets and, above all, in the case of green bonds, given the challenges associated with compliance and verification of the commitments taken on by the issuers, so as to avoid any “greenwashing”. In this regard, as noted in certain studies,[55] the fact that green bond issuers are not reducing their emissions underscores the need for a shift towards emissions models that take into account all of an issuer’s productive activity and not just individual investment projects.[56] Moreover, verification also has a very important role to play throughout this entire process. The European Commission understands this, and is currently developing a European green bond standard with four key requirements: taxonomy-alignment, transparency, external review and supervision of reviewers by ESMA.

6 The role of central banks

Climate change and the transition to a more sustainable economy also present a considerable challenge for central banks. Specifically, such processes of structural change may have a most significant impact on monetary policy conduct

55 See, for example, Ehlers, Mojon and Packer (2020).

56 See Delgado (2021).

(see Section 6.1) and pose considerable risks to financial stability (see Section 6.2), calling for a resolute response in terms of both banking regulation and prudential supervision (see Section 6.3). Insofar as central banks are capable, within their mandates, of adapting to these challenges, they will be able to actively contribute to the green transition. In addition, as with other institutional investors on the international capital markets, central banks could also bolster the transformational process required for the fight against global warming through their investment policy in respect of their own asset portfolios (see Section 6.4).

6.1 Monetary policy

There is already a broad consensus that climate change and the green transition may affect monetary policy conduct through various channels. Such structural processes may, for instance, induce changes in the level and volatility of inflation, affect the level of the equilibrium real interest rate or cause disruptions in the financial system (particularly in credit institutions) that hamper monetary policy transmission.

As has been evidenced in recent quarters, the green transition can have a most significant impact on the level of inflation and, therefore, on the monetary policy stance. Indeed, part of the sharp upturn in global inflation since early 2021 has been associated with the policies recently adopted by various governments across the world to reduce their economies' GHG emissions more swiftly. For example, after the European Commission announced the "Fit for 55" legislative package on 14 July 2021, the price of EU emission allowances rose by 56%, resulting in an increase of 142% over 2021 as a whole. This exerted further upward pressure on electricity prices in both the wholesale and retail markets. As indicated in Chapter 3 of this report, which also analyses the other factors behind the current inflationary episode, faced with such price dynamics, the world's main central banks have had to make considerable adjustments to their monetary policy stance in recent quarters.

The mitigation of and economies' adaptation to climate change will affect not only the level of inflation, but also its volatility. A broad range of studies suggest that, insofar as global warming is associated with adverse weather events becoming ever more extreme and frequent, the prices of certain goods, such as food, may show greater volatility in the future.[57] However, the various economic policies rolled out to pave the way for the green transition may also make inflation more volatile. A recent study by the Banco de España points in this direction: Santabárbara and Suárez-Varela (2022) empirically document that the emissions trading schemes introduced in many advanced economies have generated greater inflation volatility in recent years, chiefly in the energy component.

57 See European Environment Agency (2021).

These structural processes will also shape conventional monetary policy space, insofar as they have an impact on the equilibrium real interest rate (r*).[58] From a conceptual perspective, such an impact may in principle be both upwards and downwards. On the one hand, the materialisation of physical risks linked to climate change and the greater uncertainty associated with the green transition would exert downward pressure on the level of r*, owing to declining labour productivity, higher mortality and greater precautionary saving. On the other, the equilibrium real interest rate may rise on account of the sharp increase in the demand for funds to finance the numerous investment projects needed for a structural change in current production and consumption patterns. These investments may in turn also trigger a notable increase in aggregate productivity and in r*. For the time being, there continues to be considerable uncertainty surrounding which of these channels will be the most relevant in quantitative terms.[59] At any rate, should the final net effect mean a reduction in r*, interest rates would reach the effective lower bound more frequently in the future, limiting the space for conventional monetary policy tools.

Monetary policy transmission may also be affected. Should the increasing materialisation of physical risks associated with climate change trigger losses that cause a noticeable deterioration in credit institutions' balance sheets (see Section 6.2), the transmission of monetary policy decisions through the banking system would be impaired.[60] Such adverse effects would be greater still if a sharp rise in credit risk premia (attributable to a sudden reappraisal of climate-related financial risks, for example) were to have, inter alia, a negative impact on the collateral provided by institutions in monetary policy operations.[61]

Accordingly, although they are at an admittedly incipient stage, the world's main central banks have begun to factor in climate change and green transition-related considerations when determining and implementing their monetary policy.[62] By way of example, the Bank of England published its first climate-related financial disclosure in 2020, setting out its approach to managing the risks from climate change in its operations.[63] For its part, the US Federal Reserve is currently developing various scenarios to incorporate the financial risks posed by climate change in its economic models.[64]

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58 The natural or equilibrium interest rates are those which prevail when the economy remains at its potential level and inflation is stable at its target level. For more details of the concept, determinants and monetary policy implications of the natural interest rate, see Galesi, Nuño and Thomas (2017).

59 See, for example, Cantelmo (2020) and Brand et al. (2018).

60 See Álvarez et al. (2022) and Alogoskoufis et al. (2021a).

61 See, for example, Isabel Schnabel's speech, "Climate change and monetary policy", of 17 December 2020.

62 See NGFS (2020b) and González and Núñez (2021).

63 See "The Bank of England's climate-related financial disclosure 2020", Bank of England, 18 June 2020.

64 See Lael Brainard's speech, "Building Climate Scenario Analysis on the Foundations of Economic Research", Federal Reserve, of 7 October 2021.

The European Central Bank (ECB) has committed to an ambitious action plan to 2024 to incorporate climate considerations into six key areas of its monetary policy framework.[65] First, in its monetary policy assessments and macroeconomic modelling, by accelerating the development of new models and conducting theoretical and empirical analyses to monitor the implications of climate change for the economy, the financial system and the transmission of monetary policy. Second, in the statistical setting, through the development of new experimental indicators, covering green financial instruments and the carbon footprint of financial institutions, as well as their exposures to climate-related physical risks. Third, in relation to the introduction of disclosure requirements for private sector assets as a new eligibility criterion or as a basis for a differentiated treatment for collateral and asset purchases.[66] Fourth, in risk assessment capabilities, by conducting climate stress tests of the Eurosystem balance sheet. Fifth, in the valuation and risk control frameworks for assets mobilised as collateral by counterparties for Eurosystem credit operations. And lastly, in the corporate sector purchase programme, by incorporating climate change criteria, in line with its mandate, in the framework guiding the allocation of corporate bond purchases and by disclosing climate-related information from 2023 Q1.

6.2 Financial stability

The banking sector is chiefly exposed to the risks posed by climate change and the green transition through lending to productive activities.[67] For example, the physical risks linked to extreme weather events could adversely impact the quality of a portion of bank loans, as such events would foreseeably undermine real estate collateral values and business productivity in the geographical areas affected.[68] In addition, the taxes and subsidies introduced by public authorities to provide for the energy transition may also influence borrowers' profitability and liquidity and, as a result, their capacity to meet their financial commitments with credit institutions.

One possible way to estimate the extent of the banking sector's exposure to transition risks is to analyse the distribution of lending to firms according to their emission intensity. According to this approach, firms belonging to sectors with higher emission levels accounted for close to 17% of credit exposures

65 See ECB press release, "ECB presents action plan to include climate change considerations in its monetary policy strategy", of 8 July 2021.

66 See ECB press release, "ECB to accept sustainability-linked bonds as collateral", of 22 September 2020.

67 The institutional and academic literature analysing this exposure is broad. See, for example, BCBS (2021a), Financial Stability Board (2021), Hansen (2022) and Roncoroni et al. (2021).

68 In principle, the insurance sector and, where appropriate, the public frameworks for tackling natural catastrophes would make it possible to mitigate the impact of these physical risks, preventing their concentration in sectors and specific geographical areas. However, the global scope and scale of these risks will likely entail mutualisation costs that are too high to be fully covered through such insurance mechanisms.

to productive activities in Spain in 2018. This proportion was slightly lower than the euro area average (see Chart 4.16.1). Furthermore, an experimental indicator developed by the Banco de España that seeks to quantify the carbon footprint intensity[69] of Spanish credit institutions' portfolio of loans to resident firms suggests that this footprint has shrunk significantly in recent years (see Chart 4.16.2). This is consistent with the declining emission intensity of the total Spanish economy during this period (see Section 3.1), but also with a slight restructuring of Spanish credit institutions' loan portfolio towards less polluting industries (see Chart 4.16.3).

There are also different approaches for assessing the banking sector's exposure to the physical risks posed by climate change, although such evaluations are as yet very preliminary. One such approach has been proposed by the ECB as part of the climate stress test[70] developed in 2021, in which it assessed, inter alia, the impact of physical risks on European banks on the basis of their geographical location and portfolio composition. However, the estimation of the banking sector's sensitivity to physical risks in this exercise should be regarded as an initial tentative approach. Specifically, there are doubts as to the relative impact assigned to the different types of physical risks associated with climate change. Examples include that assigned to the risk of wildfires and growing desertification, which would affect southern European countries more, compared with the risk of greater floods, which would have a larger impact on some central and northern European countries.

In any event, the empirical evidence available for Spain confirms the adverse impact of physical risks on business activities. Specifically, a recent Banco de España study[71] suggests that firms affected by a wildfire in Spain suffer reductions in their credit balance and employment (see Chart 4.17). However, the real effects of this adverse shock are lower for those firms domiciled in locations where local banks operate as, on account of their exposure or the greater data available, they can help limit the negative effects of the materialisation of such physical risk. In addition, local banks' greater exposure to the areas affected would not be accompanied by an increase in the default rate of new loans, as this would be similar to that observed in non-local banks.

The physical and transition risks faced by credit institutions may pose a threat to financial stability, requiring a resolute response from central banks. Besides the various supervision and regulation initiatives that can be deployed by central banks (see Section 6.3), the climate stress tests these institutions are developing are a key tool for the early detection of the possible adverse effects of climate change

69 The carbon footprint of a given sector reflects the volume of GHG emissions generated both through its own direct activity and through the production of the inputs it uses, including energy. It may be expressed as an absolute value or by unit of output.

70 See Alogoskoufis et al. (2021b).

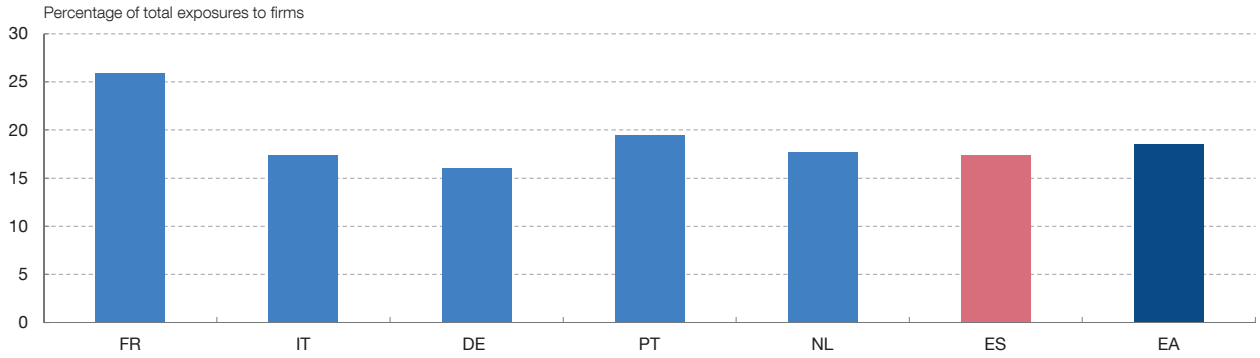
71 See Álvarez et al. (2022).

Chart 4.16

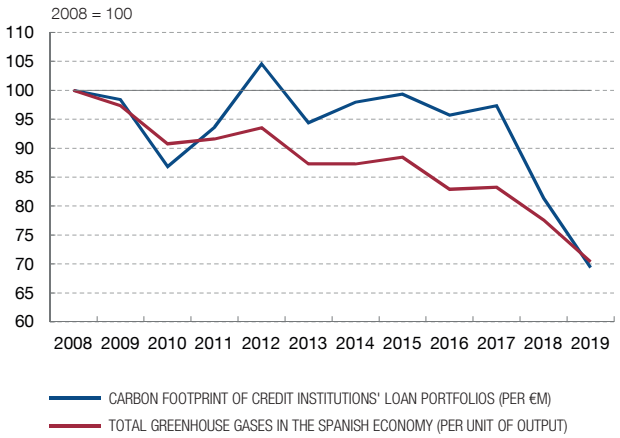
THE SPANISH BANKING SECTOR'S EXPOSURE TO CLIMATE-RELATED TRANSITION RISKS

Firms belonging to sectors with higher emission levels accounted for close to 17% of credit exposures to productive activities in Spain in 2018. This proportion was slightly lower than the euro area average. The carbon footprint intensity of Spanish credit institutions' loan portfolio has shrunk significantly in recent years, consistent with the declining GHG emission intensity in the total Spanish economy, but also with a slight restructuring of Spanish credit institutions' loan portfolio towards less polluting industries.

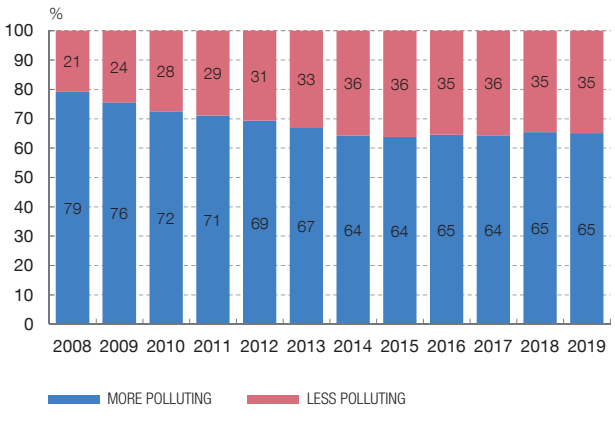
1 BANKS' EXPOSURES TO VERY HIGH EMITTERS BY COUNTRY IN 2018 (a)



2 CARBON FOOTPRINT OF SPANISH CREDIT INSTITUTIONS' LOAN PORTFOLIO (b)



3 STRUCTURE OF SPANISH CREDIT INSTITUTIONS' PORTFOLIO OF LOANS TO PRODUCTIVE ACTIVITIES ACCORDING TO EMISSION INTENSITY (c)



SOURCES: ECB, INE and Banco de España.

a Share of exposures to very high emitters published in the ECB economy-wide climate stress test (September 2021). Exposures to very high emitters are those linked to firms whose emissions are above the 90th percentile of the distribution of emitting firms to which the banks are exposed. They include direct emissions (Scope 1), indirect emissions related to energy consumption (Scope 2) and other indirect emissions broadly related to transportation (Scope 3).
b This indicator represents the weighted average of (direct and indirect) emission ratios per unit of output of the productive activities according to the relative weight of each industry in the stock of loans extended by Spanish credit institutions.
c Industries are classified as more or less polluting on the basis of their emission intensity (2008-2019 average), such that those whose emission ratios exceed the median of the 64 industries analysed are classified as more polluting.

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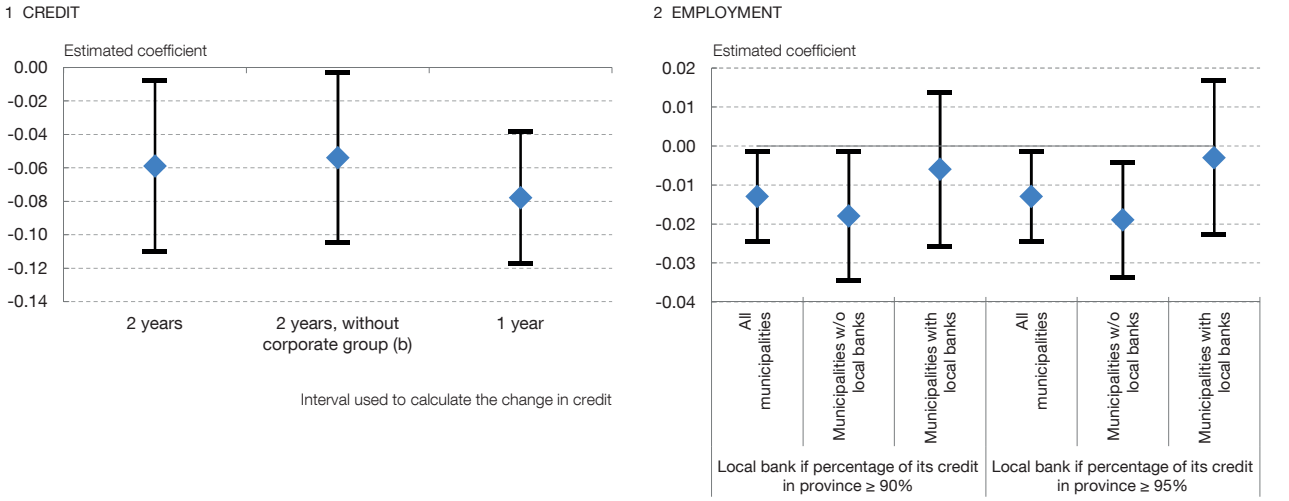
and the green transition on banking sector profitability and solvency. These tools are especially useful given their forward-looking nature, flexibility and ability to incorporate multiple scenarios, enabling them to capture much of the uncertainty associated with the ongoing structural change. In any event, numerous aspects of these instruments still need to be enhanced over the coming quarters. For example, a more detailed microsectoral breakdown should be introduced, as their structure is

Chart 4.17

EFFECT OF WILDFIRES ON CHANGE IN CREDIT AND EMPLOYMENT OF SPANISH FIRMS (a)

Firms affected by a wildfire suffer reductions in their credit balance and employment. The real effects are mitigated for those firms domiciled in municipalities where local banks operate as, on account of their exposure or information, they could limit the effects of the materialisation of physical risks.



SOURCE: Álvarez et al. (2022).

a Including wildfires with a burned area of 500 hectares or more in Spain between 2004 and 2017. Firms include those located less than 10 km and those between 20 km and 40 km from a wildfire. A firm is considered to be affected if it is less than 10 km from a wildfire. The bands represent the 90% confidence interval.
b The sample excludes firms belonging to a corporate group.

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still very much centred on assessing aggregate macro-financial scenarios. The projection period of the exercises should also be adapted to the long-term horizons associated with the green transition, which will also require incorporating dynamic responses from economic agents to technological progress, changes in consumer preferences and the restructuring of the productive system, among other factors.

The Banco de España's top-down analysis shows that climate risks will have a moderate impact on the Spanish banking sector in the short term. This exercise,[72] which draws on the Forward Looking Exercise on Spanish Banks (FLESB) in-house stress-testing framework, analyses the impact on Spanish credit institutions of different policies to raise CO_2 emission allowance prices. Specifically, it quantifies their impact on the GVA of the main sectors of activity of the Spanish economy and estimates their pass-through to probabilities of default, differentiated by sector. The results of this exercise suggest that, on average, the impact of these policies on the quality of loans to firms would be moderate, although it would be greater in the case of the sectors of activity with higher emissions. The preliminary analysis also indicates that, if the physical risks associated with climate change were to materialise

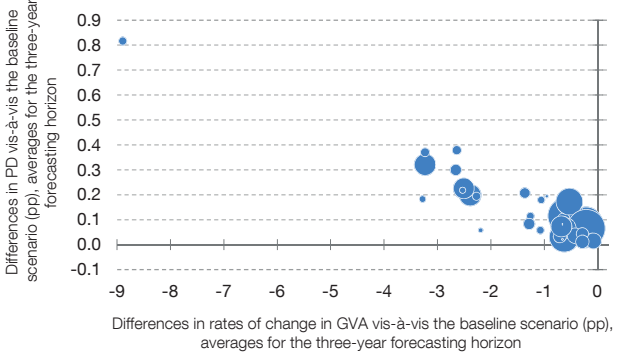
72 See Ferrer et al. (2021).

Chart 4.18

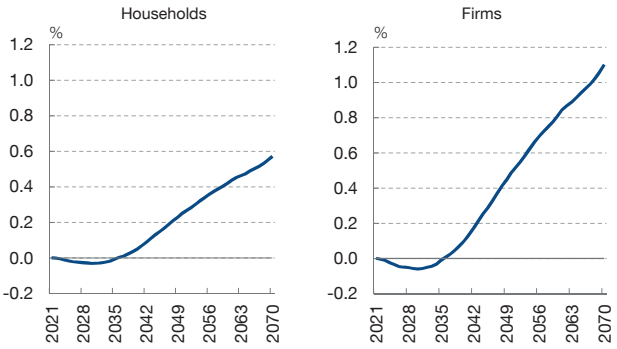
THE IMPACT OF CLIMATE RISKS ON THE QUALITY OF LOANS TO FIRMS IS UNEVEN ACROSS SECTORS, AND THE LONG-TERM DETERIORATION OWING TO THE MATERIALISATION OF PHYSICAL RISKS IS EXPECTED TO BE GREATER THAN THAT DUE TO TRANSITION RISKS

Raising CO_2 emission allowance prices would have a highly heterogeneous impact on the level of activity and probability of default (PD) of Spanish firms, depending on the level of their emissions and the type of policy implemented. The severest impacts would be concentrated in a small group of sectors, which would limit the final effect on bank profitability and solvency. The preliminary analysis also indicates that, if the physical risks associated with climate change were to materialise forcefully, there would be substantial long-term increases in households' and firms' probabilities of default. In the case of firms, the increases would be much sharper than those estimated at the outset of an orderly transition towards a more sustainable production model.

1 SHORT-TERM IMPACT ON PD AND GVA OF TRANSITION RISKS. FIRMS IN SPAIN (a) (b)



2 DIFFERENCES IN PD (c)



SOURCE: Banco de España.

a The severest scenario considers the combined effect of an increase in emission prices and the extension of ETS coverage to all business sectors and also to households.

b Each dot on the chart represents a sector. PD represents the probability that firms do not meet their financial commitments with banks. PDs are estimated over the projection horizon for each bank, but the difference in each sector's weighted average is depicted. Weighting is by number of borrowers. The size of the bubbles indicates the share of the sector's exposure in total credit exposures in Spain.

c The chart depicts, for each portfolio (households and firms) and each year, the difference in expected PD under two different scenarios: one in which physical risks materialise forcefully (hot house scenario) and another which envisages an orderly transition towards a sustainable energy model. The projections to 2070 are obtained by sequentially applying an autoregressive model that relates PDs and GDP growth. The GDP growth trajectories derive from scenarios drawn up by the NGFS.

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forcefully, there would be substantial long-term increases in households' and firms' probabilities of default. In the case of firms, the increases would be much sharper than those estimated at the outset of an orderly transition towards a more sustainable production model (see Chart 4.18).

6.3 Regulation and prudential supervision

In the area of regulation and prudential supervision, work is under way so that credit institutions are ready to identify, measure, manage and properly report on the financial risks posed by climate change and thus contribute to the green transition. This work notably includes the preparation of guidelines and supervisory expectations on how credit institutions should consider the risks posed by climate change and environmental degradation in their daily operations, business strategies, risk management, accounting and market communications. In Europe,

the relevant recommendations have been issued by both the European Banking Authority (EBA) and by the Banco de España and the ECB.[73]

As regards disclosures, the initiatives being carried out at both the global and the European level notably include the EBA's publication of the standards on disclosures on environmental, social and governance (ESG) risks in January 2022.[74] These standards provide the basis for publication by the European banking sector of comparable quantitative information on how climate change risks affect their balance sheets. This information will include the so-called green asset ratio, which identifies the share of institutions' green assets – as defined in the European taxonomy – in their total assets. Furthermore, at the global level, in November 2021 the Basel Committee on Banking Supervision (BCBS) welcomed the establishment of the International Sustainability Standards Board (ISSB)[75] to develop global standards for sustainability reporting and announced that it was exploring the use of the Pillar 3 framework[76] to establish a common disclosure baseline for climate-related financial risks.

Owing to their novelty and the existing data gaps, ESG risk disclosures will pose a challenge and call for a great effort from the banking sector. But they will also be a key tool for making headway in the green transition. Considering the adaptation costs involved, the EBA has introduced certain transitional features in the standards. In any event, disclosing this information to the market will encourage institutions to move towards a sustainable economy and improve the measurement and management of the associated risks. According to a recent Banco de España paper,[77] which applies text mining techniques to the Pillar 3 reports for 2019 and 2020 of most of the significant banks directly supervised by the ECB, the level of detail on ESG risks included in these reports remains relatively low (see Chart 4.19). Nevertheless, the paper revealed that the degree of such disclosures increased between 2019 and 2020, particularly so among the smallest institutions (i.e. those with assets of less than €30 billion).

From a prudential standpoint, it is essential that higher capital requirements be maintained for the riskiest assets. This principle should also govern the adaptation of the regulatory framework to incorporate climate risks; that is to say, assets should be treated on the basis of their risk, with other economic policy considerations left to another type of public intervention.

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73 See EBA (2021), Banco de España (2020) and ECB (2020). At the global level, see the consultation in BCBS (2021c) on the principles for the effective management and supervision of climate-related financial risks and the previous report in BCBS (2021b) on the measurement of such risks.

74 See EBA (2022).

75 See International Financial Reporting Standards Foundation (2021).

76 The Basel regulations are based on three pillars: Pillar 1 (minimum capital requirements), Pillar 2 (supervisory review process) and Pillar 3 (market discipline through prudential disclosures).

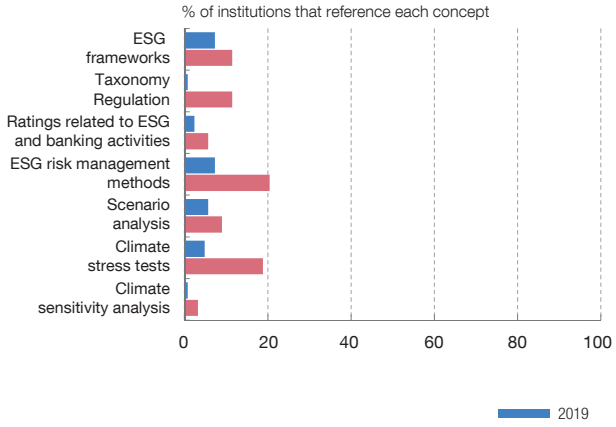
77 See Moreno and Caminero (2022).

Chart 4.19

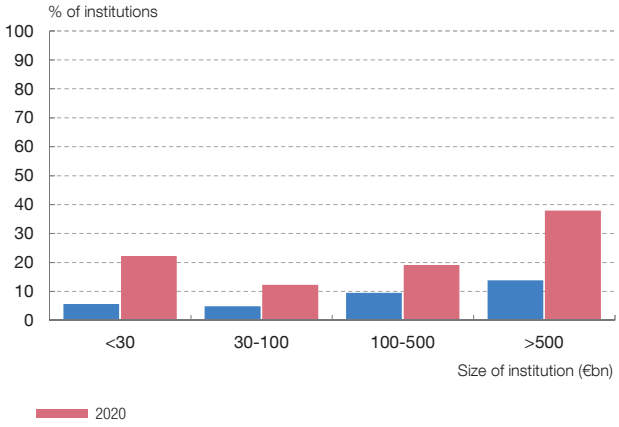
REFERENCES TO ESG RISKS IN EUROPEAN BANKS' REPORTS

The level of detail on environmental, social and governance (ESG) risks included in the Pillar 3 reports for 2019 and 2020 of most of the significant banks directly supervised by the ECB remains relatively low. Nevertheless, the degree of such disclosures increased between 2019 and 2020, particularly so among the smallest institutions (i.e. those with assets of less than €30 billion).

1 INSTITUTIONS REFERENCING CONCEPTS RELATED TO ESG FRAMEWORKS AND ESG RISK MANAGEMENT METHODS



2 INSTITUTIONS REFERENCING CONCEPTS RELATED TO ESG FRAMEWORKS AND ESG RISK MANAGEMENT METHODS BY SIZE



SOURCE: Moreno and Caminero (2022).

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In terms of the microprudential regulation on capital requirements, there are numerous European and global initiatives for properly taking into account climate and environmental risks. In the banking reform package published in late 2021,[78] the European Commission has explicitly incorporated sustainability into Pillar 2 of the prudential regulations. By 2023, the EBA will also assess whether a dedicated prudential treatment of exposures associated with environmental and/or social objectives (as a component of Pillar 1 capital requirements) is needed. In this respect, it should be noted that the way in which Pillar 1 could potentially be adapted to incorporate these considerations is not clear because, among other reasons, an adequate historical calibration is not available for an event such as climate change, as it represents a profound structural break. For its part, the BCBS, whose work is still in an incipient stage, is also assessing whether the capital requirements framework for institutions correctly captures climate-related physical and transition risks.

Turning to macroprudential regulation, since climate change has a global scope, consideration must be given to its impact on systemic risk and the possibility of activating macroprudential tools to prevent and mitigate it. For instance, taking into account the extraordinary uncertainty surrounding the economic impact of climate change, a progressive increase in macroprudential capital buffer requirements might be considered. More restrictive measures, such as limits on concentration in certain

78 See European Commission (2021d).

sectors, could also be considered at a later date, depending on how public policies, the climate change process itself and the banking sector's exposures evolve. In any event, it should be borne in mind that any measures that are implemented should not hinder the financing of the large and sustained investments that will be needed for the transition towards a low-emission economy. Against this backdrop, in July 2021 the European Commission requested technical advice from the EBA, the ECB and the European Systemic Risk Board on the review of the macroprudential toolkit.[79] Among the questions raised by the European Commission was whether the macroprudential tools are appropriate to prevent and mitigate financial stability risks due to climate change.

Against this overall background, the ECB has considered a gradual approach to supervising the climate risks for the banking sector, centring its initial assessment on compliance with the supervisory expectations relating to organisational and methodological matters, where it has already detected some shortcomings. In 2021 the ECB indicated that credit institutions had made some progress in adapting their banking practices, with greater steps being taken in respect of transition risks.[80] In 2022 Q1 however, the ECB found that none of the Single Supervisory Mechanism (SSM) banks fully met its expectations. Further, it found that the institutions had made moderate progress in the disclosure of information since the preliminary assessment in 2020 and that there were significant gaps in how they measure the risks and the related impact on their business.[81] This new assessment will be complemented by the results obtained in the bottom-up climate risk stress test to be executed at the European level in 2022 H1.[82]

The Banco de España has also begun to assess the degree to which the institutions under its direct supervision are aligned with the supervisory expectations issued in October 2020. The approach used to inspect their climate and environment risk management is similar to that defined by the ECB, but applying the principle of proportionality to smaller and less complex institutions. The progress they have made and any potential obstacles identified will be gauged in 2022, which may prompt an update to the supervisory expectations.

6.4 Own portfolios

Central banks can also contribute to the green transition by incorporating sustainability criteria in their own investment portfolios.[83] At the global level,

79 See European Commission (2021b).

80 See ECB (2021).

81 See ECB press release, "Banks must get better at disclosing climate risks, ECB assessment shows", of 14 March 2022.

82 This exercise is geared towards assessing how prepared credit institutions are for dealing with the economic and financial shocks stemming from physical and transition risks. See ECB (2022). Unlike the top-down stress tests analysed in Section 6.2, a bottom-up stress test is conducted by the banks themselves, using their internal models and databases, albeit under the methodological guidelines provided by the supervisor.

83 See González (2021b).

the NGFS is channelling much of the work being carried out to this end by the world's central banks.[84] Further, in February 2021 the 19 euro area countries and the ECB agreed on a common stance for applying climate change-related sustainable and responsible investment principles in euro-denominated non-monetary policy portfolios.[85] In parallel, they undertook to start making climate-related disclosures for these portfolios within the following two years.

The Banco de España has also adopted the Eurosystem's recent common stance, having already applied sustainability and responsibility criteria in its investment policy for its own portfolios since 2019.[86] As part of this strategy, the Banco de España has direct green bond investments in different currencies and participates in two US dollar and euro-denominated investment funds launched by the Bank for International Settlements (BIS) for this type of asset.

7 Conclusions

From a scientific perspective, there is a broad consensus that global warming poses an extraordinary risk to our planet and that GHG emissions must be significantly reduced over the coming years. In addition, from the European and Spanish standpoint, Russia's recent invasion of Ukraine and the associated present and future geopolitical tensions also appear to advise accelerating the reduction in Europe's high reliance on fossil fuels.

From an economic perspective, there is still considerable uncertainty as to the scale of the potential impacts stemming from the various physical and transition risks associated with the fight against global warming. In any event, it seems evident that, in such an uncertain environment, the economic policies rolled out to facilitate and accelerate the green transition should be clear and internationally coordinated and provide certainty and a stable operational framework for economic agents.

The key levers for driving the green transition, both in Spain and internationally, should be green taxation, government investment and the regulation of economic activity. Bearing in mind that the physical and transition risks linked to global warming may have a stronger impact on precisely some of the most vulnerable households and firms, it is essential that these public policies focus particularly on temporarily mitigating the greater short-term adverse impact of climate change on such groups. The advisability of deploying this type of compensatory measures

84 See NGFS (2019 and 2020a).

85 See ECB press release, "Eurosystem agrees on common stance for climate change-related sustainable investments in non-monetary policy portfolios", of 4 February 2021.

86 See Banco de España press release, "The Banco de España adopts the Eurosystem's common stance for sustainable investment", of 4 February 2021, and Banco de España (2021).

is warranted not only by questions of equity, but also by the need to ensure a sufficient social consensus in order to efficiently undertake the necessary green transition.

In the current setting, a continuous and rigorous assessment of public policies is now needed more than ever. While all economic policy should generally be submitted to a rigorous assessment, it is even more relevant in the realm of climate change. Specifically, extraordinary uncertainty surrounds not only the climate risks to be faced, as well as their economic impact, but also the effectiveness and implications of many of the relatively new economic policy measures that are being rolled out to address them. It is only through a continuous and rigorous assessment of these initiatives that an efficient green transition, with no undesired effects or wastage of public and private funds, can be guaranteed.

If the public policies and climate risks are to be properly evaluated, the volume and quality of the data available must be increased. Having more high-quality environmental information that is harmonised across countries, sectors and firms is vital if the public policies that will pave the way for the green transition are to be designed correctly. Yet it is also essential for the financial system, to enable investors, credit institutions and central banks to adequately assess both their exposure and that of other economic agents to the different climate-related physical and transition risks. In this respect, despite the numerous initiatives deployed in recent years to increase the quantity and quality of the climate exposure information that is compiled and disseminated, much work remains to be done. From the standpoint of central banks in general and of the ECB and the Banco de España in particular, one priority at present and in the more immediate future is to make headway, within the financial system, in incorporating climate considerations into the operating frameworks of monetary policy, financial stability, supervision and regulation.

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GLOSSARY OF CLIMATE ACRONYMS

CATS	CArbon Tax Sectorial model
CBPS	Greening our Corporate Bond Purchase Scheme
COP 21	21st United Nations Climate Change Conference
COP 26	26th United Nations Climate Change Conference
CSRD	Corporate Sustainability Reporting Directive
EBAE	*Encuesta del Banco de España sobre la Actividad Empresarial* (Banco de España Business Activity Survey)
EFRAG	European Financial Reporting Advisory Group
ESG	Environmental, Social and Governance
ETS	Emissions Trading System
EU-ETS	EU Emissions Trading System
FLESB	Forward Looking Exercise on Spanish Banks
GHG	Greenhouse gases
IPCC	Intergovernmental Panel on Climate Change
ISSB	International Sustainability Standards Board
NDC	Nationally Determined Contributions
NECP	National Energy and Climate Plan
NGFS	Network for Greening the Financial System
PNACC	National Plan for Adapting to Climate Change
RTRP	Recovery, Transformation and Resilience Plan
SFDR	Sustainable Finance Disclosure Regulation
UNEPFI	United Nations Environment Programme Finance Initiative

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ACRONYMS AND ABBREVIATIONS

AIReF	Independent Authority for Fiscal Responsibility
AMCESFI	Spanish Macroprudential Authority
APP	Asset Purchase Programme
BCBS	Basel Committee on Banking Supervision
BE	Banco de España
BIS	Bank for International Settlements
BLS	Bank Lending Survey
CBI	Central Balance Sheet Data Office integrated database
CBQ	Central Balance Sheet Data Office Quarterly Survey
CCyB	Countercyclical capital buffer
CNE	Spanish National Accounts
CNMV	National Securities Market Commission
COICOP	Classification of Individual Consumption According to Purpose
CPI	Consumer Price Index
CRII	Coronavirus Response Investment Initiative
DGF	Deposit Guarantee Fund
EBA	European Banking Authority
EBAE	Banco de España Business Activity Survey
EBRD	European Bank for Reconstruction and Development
ECB	European Central Bank
ECV	Spanish Living Conditions Survey
EDIS	European Deposit Insurance Scheme
EFF	Spanish Survey of Household Finances
EIB	European Investment Bank
EONIA	Euro Overnight Index Average
EPA	Official Spanish Labour Force Survey
ERTE	Furlough-like and short-time work schemes
ESA 2010	European System of National and Regional Accounts
ESCB	European System of Central Banks
ESFS	European System of Financial Supervisors
ESM	European Stability Mechanism
ESMA	European Securities and Markets Authority
ESRB	European Systemic Risk Board
ETS	Emissions trading system
EU	European Union
EURIBOR	Euro Interbank Offered Rate
EUROSTAT	Statistical Office of the European Communities
FLESB	Forward looking exercise on Spanish banks
FROB	Fund for the Orderly Restructuring of the Banking Sector
FSB	Financial Stability Board
GDI	Gross disposable income
GDP	Gross domestic product
GFCF	Gross fixed capital formation
GHG	Greenhouse gas
GNP	Gross national product
GVA	Gross value added
HICP	Harmonised Index of Consumer Prices
ICO	Official Credit Institute
ICT	Information and communications technology
IEA	International Energy Agency
IFRSs	International Financial Reporting Standards
IGAE	National Audit Office
IIP	International Investment Position
IMF	International Monetary Fund
INE	National Statistics Institute
IPCC	Intergovernmental Panel on Climate Change
IPCEIs	Important Projects of Common European Interest
LTROs	Longer-term refinancing operations
MIS	Minimum income scheme
MROs	Main refinancing operations
NCBs	National central banks
NDCs	Nationally determined contributions
NECP	National Energy and Climate Plan
NFCs	Non-financial corporations
NGEU	Next Generation EU
NGFS	Network for Greening the Financial System
NPISHs	Non-profit institutions serving households
NPLs	Non-performing loans
OECD	Organisation for Economic Co-operation and Development
OSA	Open strategic autonomy
PEPP	Pandemic Emergency Purchase Programme
PMI	Purchasing Managers' Index
PNACC	National Plan for Adapting to Climate Change
PPP	Purchasing power parity
QNA	Quarterly National Accounts
R&D&I	Research, development and innovation
REACT EU	Recovery Assistance for Cohesion and the Territories of Europe
RRF	Recovery and Resilience Facility
RTRP	Recovery, Transformation and Resilience Plan
SAFE	ECB Survey on the Access to Finance of Enterprises
SGP	Stability and Growth Pact
SMEs	Small and medium-sized enterprises
SRB	Single Resolution Board
SRM	Single Resolution Mechanism
SSM	Single Supervisory Mechanism
SURE	Support to Mitigate Unemployment Risks in an Emergency
TLTROs	Targeted longer-tem refinancing operations
VAT	Value Added Tax
WHO	World Health Organization
WTO	World Trade Organization

COUNTRIES AND CURRENCIES

In accordance with the protocol order, the EU Member States are listed using the alphabetical order of the country names in the national languages.

BE	Belgium	EUR (euro)
BG	Bulgaria	BGN (Bulgarian lev)
CZ	Czech Republic	CZK (Czech koruna)
DK	Denmark	DKK (Danish krone)
DE	Germany	EUR (euro)
EE	Estonia	EUR (euro)
IE	Ireland	EUR (euro)
GR	Greece	EUR (euro)
ES	Spain	EUR (euro)
FR	France	EUR (euro)
IT	Italy	EUR (euro)
HR	Croatia	HRK (Croatian kuna)
CY	Cyprus	EUR (euro)
LV	Latvia	EUR (euro)
LT	Lithuania	EUR (euro)
LU	Luxembourg	EUR (euro)
HU	Hungary	HUF (Hungarian forint)
MT	Malta	EUR (euro)
NL	Netherlands	EUR (euro)
AT	Austria	EUR (euro)
PL	Poland	PLN (Polish zloty)
PT	Portugal	EUR (euro)
RO	Romania	RON (New Romanian leu)
SI	Slovenia	EUR (euro)
SK	Slovakia	EUR (euro)
FI	Finland	EUR (euro)
SE	Sweden	SEK (Swedish krona)
UK	United Kingdom	GBP (Pound sterling)
JP	Japan	JPY (Japanese yen)
US	United States	USD (US dollar)

CONVENTIONS USED

M1	Notes and coins held by the public + sight deposits.
M2	M1 + deposits redeemable at notice of up to three months + deposits with an agreed maturity of up to two years.
M3	M2 + repos + shares in money market funds and money market instruments + debt securities issued with an agreed maturity of up to two years.
Q1, Q4	Calendar quarters.
H1, H2	Calendar half-years.
bn	Billions (10^9).
m	Millions.
bp	Basis points.
pp	Percentage points.
...	Not available.
—	Nil, non-existence of the event considered or insignificance of changes when expressed as rates of growth.
0.0	Less than half the final digit shown in the series.