



# Financial Stability Note

No. 20, October 2021





# **Financial Stability Note**

**No. 20, October 2021**

The Financial Stability Note is framed within the tasks that the CNMV carries out to monitor financial stability conditions in the areas it supervises. In particular, the Note assesses the stress level of domestic securities markets during the last quarter, flags any changes in the level of different financial risks and identifies the major sources of risk.

The Spanish National Securities Market Commission (CNMV) distributes its reports and publications via the Internet at [www.cnmv.es](http://www.cnmv.es)

© CNMV. The contents of this publication may be reproduced, provided the source is acknowledged.

ISSN (digital edition): 25030-7827

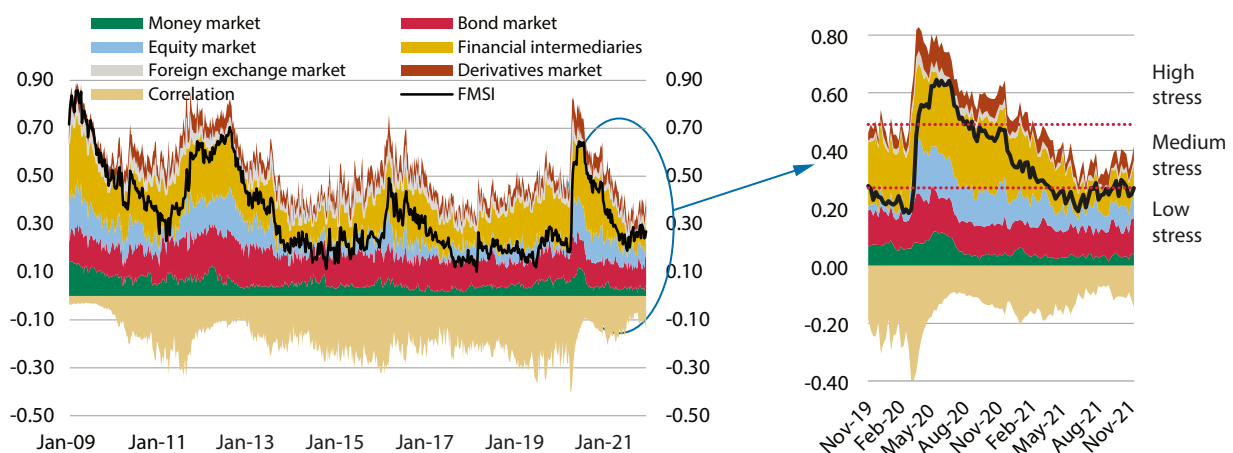
Layout: Cálamo y Cran

## Summary

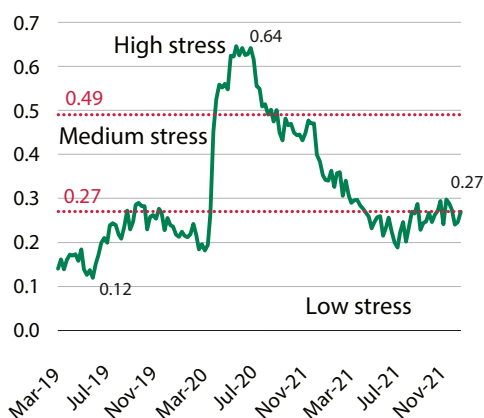
- ✓ Since the publication of the last financial stability note, **the Spanish financial markets stress indicator** has fluctuated around the threshold that separates low risk from medium risk (0.27). The last indicator value was 0.27,<sup>1</sup> after spiking at 0.30 at the beginning of October. Temporary spikes in volatility indicators are responsible for most of the increase in system stress and these movements were observed in most segments (equities – on the back of various uncertainties, fixed income – due to inflation risk, and in the forex and commodities markets). At the end of October, the highest stress level was seen in the fixed income segment (0.64), while in the other segments the value ranged between 0.25 (money markets) and 0.47 (derivatives). The system correlation remained at high levels, although it fell in the last days of the period.

### Stress indicator of the Spanish financial markets

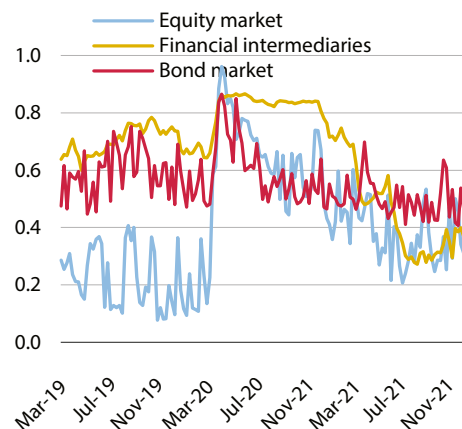
FIGURE 1



### Total stress indicator



### Stress indicators in the bonds, financial intermediaries and equity segment



Source: CNMV.

For more detail on the recent movements in this indicator and its components, see the statistical series of the CNMV (Market stress indicators), available at: <http://www.cnmv.es/Portal/Publicaciones/SeriesWeb/Inicio.aspx?codrama=1295>. For further information on the methodology of this index, see Cambón, M.I. and Estévez, L. (2016). "A Spanish Financial Market Stress Index (FMSI)". *Spanish Review of Financial Economics*, Vol. 14, No. 1 pp. 23-41 or as CNMV Working Paper No. 60 available at: [http://www.cnmv.es/DocPortal/Publicaciones/MONOGRAFIAS/Monografia\\_60\\_en.pdf](http://www.cnmv.es/DocPortal/Publicaciones/MONOGRAFIAS/Monografia_60_en.pdf).

- ✓ The **Spanish equity markets** showed a somewhat uneven trend in the third quarter of the year, affected by various different uncertainties, but in October they embarked on a new upward trend in common with other benchmarks as some of these uncertainties

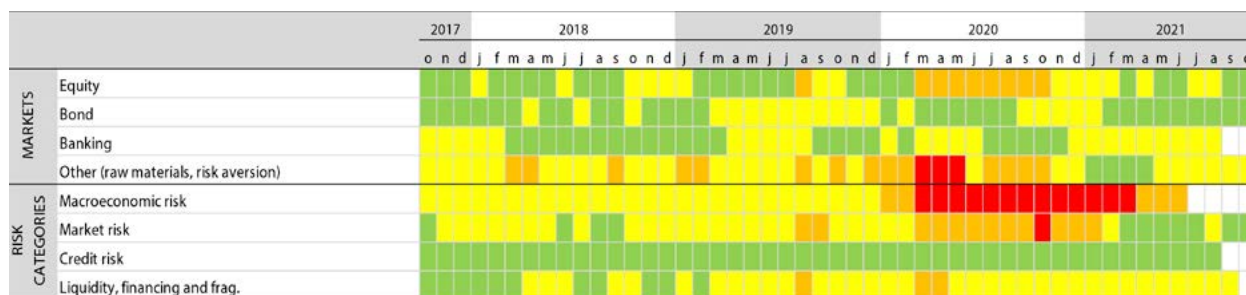
<sup>1</sup> The closing date of this note is 31 October, except for the stress indicator which is for 5 November, and certain other specific data.

became less significant. These related to the situation in China and the financial problems experienced by the Chinese real estate company Evergrande, the downwards revision of growth forecasts in Spain, the general rise in inflation and, lastly, the different regulatory decisions for the electricity market that affected the stock prices of companies in the sector. In this context, the Ibox 35 grew by 12.2% until October, one of the weakest revaluations among the European indices (together with the UK index).

- ✓ The performance of the **debt markets** was shaped by the rise in inflation and inflation expectations, which have been factored into the yields on long-term debt assets of most advanced economies, meaning that for 10-year sovereign debt only the German bond remains in negative ground. The Spanish bond yield closed October at 0.62% (0.06% at the end of 2020) and the risk premium tightened slightly to 77 basis points (bp) compared to 63 bp at the end of 2020.
- ✓ The most prominent **risks of a financial nature** identified are still market and liquidity risks, especially in regard to certain fixed income assets. The main trigger for these risks mentioned in our previous note – the potential worsening of economic performance – has been expanded to include the risk of inflation, which could have a negative impact on activity and also an immediate effect on the yields of debt assets and, consequently, their prices (downward). The European monetary authority considers the rise in inflation to be temporary and that there will be no substantial changes in its monetary policy in the short term. However, there is no market consensus about the valuation of this price spike and therefore continuous monitoring is required.
- ✓ Within the **main sources of risk**, those related to the existing uncertainty about how the pandemic will evolve, the high debt levels of some agents, the cybersecurity challenges deriving from the increase in non-face-to-face activities and, lastly, the risks relating to climate change, stand out. In the last case, the main tasks in the area of financial stability consist of determining the direct risks deriving from the physical impact of adverse events and the risks relating to the transition to a decarbonised economy, identifying the entities most exposed to them.

### Heat map: summary by markets and risk categories<sup>1</sup>

FIGURE 2



Source: CNMV. See Cambón, M.I. (2015). "Identification of vulnerabilities in the Spanish financial system: an application of heat maps". *CNMV Bulletin*, Quarter I, pp. 109-121.

<sup>1</sup> Data to 29 October.

## Sources of risk

### Macroeconomic environment

- According to the information provided by the National Institute of Statistics (INE), in the third quarter of 2021 the GDP of the Spanish economy grew by 2.0% compared to the previous quarter, which places the year-on-year rate at 2.7%. In the euro area, the quarterly and year-on-year variation in GDP in the same quarter was 2.2% and 3.7% respectively (see Figure 21). The growth in activity in Spain was due to a combination of domestic demand, which contributed 1.5 percentage points (pp) to annual GDP growth, and foreign demand, which contributed 1.2 pp, thanks to the higher growth in exports (13.7% annual) compared to imports (10.2%). The largest increase in domestic demand occurred in public administration expenditure, which rose by 2.9% year-on-year (0.1% in the quarter).<sup>2</sup>

The forecasts for 2021 and 2022 made a few months earlier by the leading institutions have been revised downwards as a result of several factors – some of which are specific to the Spanish economy and others have affected most economies at a global level. Among the former, the reduction in the growth rate of Spanish GDP in the second quarter compared to the initial estimate made by the INE stand out, while the latter include the impact of the difficulties facing some global supply chains and the rise in energy prices, which is starting to be transferred to other goods and services.

Thus, the International Monetary Fund (IMF) in its mid-October report lowered the growth forecast for Spain for this year by 5 tenths of a point, to 5.7%.<sup>3</sup> However, this figure is 7 tenths of a point higher than the forecast for the euro area as a whole, largely due the good vaccination uptake in Spain, which has allowed the restrictions that remained in force to gradually be lifted, and to the positive effects of the expansive monetary and fiscal policy, which includes NGEU (Next Generation EU) projects. The European Commission's forecasts, published at the beginning of November, in which growth expectations were revised downwards to 4.6% (more than 1.5 points less than in the previous estimate), placed the growth projected for Spain lower than the figure expected for the EU as a whole (5%).<sup>4</sup> The Bank of Spain, which had forecast 6.3% growth for 2021 in its September report, announced at the end of October that the projections to be published in December will be substantially lower due to the factors mentioned above.

- In the third quarter of the year, 359,300 jobs were created,<sup>5</sup> continuing the trend marked in the previous quarter, where the increase was 465,000, putting the number of people employed at 20.03 million. In the past 12 months, 854,100 jobs have been created, representing growth of 4.5%. This increase has been reflected both in the activity rate, which rose by almost 7 tenths of a point (to 57.7%) and in the number of unemployed workers, which fell by 127,100, putting the unemployment rate at 14.6% (15.3% at the end of June). As mentioned on other occasions, these figures do not include workers affected by “ERTE” furloughing schemes,<sup>6</sup> who numbered 190,718 at the end of October. This represents a decrease of 48,512 furloughed workers compared to 30 September<sup>7</sup>

---

<sup>2</sup> Household consumption increased by 1.1% annually (-0.5% in the quarter) and investment (gross capital formation) rose by 1.3% (2.0% in the quarter).

<sup>3</sup> However, forecasts for 2022 have been revised upwards by 6 tenths of a point, which places the estimated growth rate at 6.4%.

<sup>4</sup> The European Commission expects growth of 5.5% for Spain and 4.3% for the EU as a whole next year.

<sup>5</sup> Data from the EPA (Labour Force Survey).

<sup>6</sup> In accordance with Eurostat and International Labour Organization (ILO) methodology these workers are considered employed.

<sup>7</sup> This figure reflects the decrease taking into account the notification date – if the registration date is taken into account, the decrease would be 43,329 people.

(and 94.7% compared to the high seen during the worst moments of the coronavirus crisis).

For Social Security membership, data for October showed a slight monthly increase of 102,474 (seasonally adjusted), to 19.66 million, continuing the positive trend of the previous five months. The services sector was the main contributor to this performance, with 98,737 more members (591,000 from April), while, for the first time since the start of the pandemic, all other sectors also experienced increases in members, albeit on a much smaller scale. The Bank of Spain's forecasts for year-end 2021 indicate an unemployment rate of 15.1%, 5 tenths of a point below the estimate made in June and a figure that is very similar to the EC's forecast (15.2%).

- The leading inflation indicator for October showed a price increase of 2.0% compared to September, which would put the year-on-year rate at 5.5%, the highest in 29 years. This trend was triggered by the rise in the electricity prices and to a lesser extent by the increase in fuel and gas prices, which had dropped significantly a year earlier. The core inflation rate, which excludes the most volatile elements (energy and fresh food), has also increased slowly in recent months, but the rise has been much smaller (1.4% in October following an increase of 4 tenths of a point in the month). In the comparison with the euro area, data for harmonised CPI in September reflect a slight increase in the positive spread for Spain, to 0.6 pp (0.3 pp in August).
- The information available on public sector finances shows a notable decrease in the public deficit compared to the previous year's figures, although there is still a certain impact from the COVID-19 crisis. Thus, the consolidated deficit of public administrations<sup>8</sup> at the end of August stood at 4.6% of GDP, below the figure of 7.1% seen in the same period of 2020, with improvements in all subsectors (central government, autonomous regions and social security funds).<sup>9</sup> The level of public debt fell in the second quarter of the year to 122.8% of GDP (125.3% in the first quarter and 110.3% a year earlier).

The Bank of Spain's forecasts for year-end 2021 would place the public deficit at 7.6%, while according to the IMF's calculations it would be 8.6%. In both cases, these figures are higher, by 6 and 4 tenths of a point respectively, than the projections made a few months earlier. Public debt would stand at between 118% and 120.2% of GDP, to fall gradually (along with the deficit) in the upcoming years.

- Household financial decisions, according to data from the Financial Accounts for the second quarter of 2021, which have been strongly affected by the pandemic in the past year, appear to be following patterns that are more in line with pre-pandemic trends. The most noticeable point is the fall in the savings rate, which had gradually increased since the beginning of 2020, when it went from values of below 10% of disposable income to 16.3% in the first quarter of 2021 (accumulated data for four quarters). At the end of June, the savings rate stood at 13.0%, 3 pp below the first quarter figure and 6 pp lower than the average figure for the euro area (Figure 29).<sup>10</sup> The decrease in savings by Spanish households was reflected in the acquisition of financial assets, which, while still high, dropped to 5.9% of GDP at the end of June (in net and annual terms), 1 pp lower than the value seen in the previous quarter (Figure 27). The composition of this investment followed the same patterns as in previous years: the divestment of term deposits and fixed income securities continued, reaching 3.2% of GDP, and the investment

---

<sup>8</sup> Excluding local authorities and aid to financial institutions.

<sup>9</sup> The autonomous regions saw a slight increase in their surplus due to the higher growth in income (6.8%) in relation to expenses (5.7%), while social security funds saw a reduction in their deficit due mainly to the rise in contributions.

<sup>10</sup> This level of savings is almost 3 pp higher than the figure reached in the worst moments of the financial crisis and is more than 8 pp higher than in 2020.



of a large part of savings in means of payment remained unchanged,<sup>11</sup> with inflows of funds of almost €85 billion, 7.3% of GDP. Also noteworthy is the acquisition of investment fund units, which stood at 2.5% of GDP in net terms (almost €30 billion).

The analysis of the data available to the CNMV on investment funds flows reflects that the relative polarisation of investors that started in 2019 continued in the first half of 2021: the categories accounting for the largest inflows of funds were simultaneously some of the most risky, such as global funds or international equity funds, and some of the most conservative, such as fixed income funds. Specifically, global funds experienced by far the highest volume of net subscriptions, €20 billion between January and June,<sup>12</sup> while for international equity funds this figure was €3.30 billion. For fixed income funds, inflows of funds surpassed €2.50 billion.

### Low interest rate environment

- Although the European Central Bank (ECB) has reiterated several times its commitment to maintaining an expansive monetary policy to support the economic recovery of the euro area, predicting that the rise in inflation will be temporary, in reality, inflation has soared to levels unseen<sup>13</sup> since the euro was adopted. The market is factoring in a higher probability that the ECB will tighten its monetary policy earlier to combat the rise in prices, in the context of the new, more flexible monetary policy strategy<sup>14</sup> implemented by the institution. In addition, the European monetary authority itself has signalled that a slight reduction in the pace of the pandemic emergency asset purchase programme (PEPP) is possible, which will probably end in March 2022.

Additionally, in the United States, where the Chairman of the Federal Reserve also considers the rise in inflation to be temporary<sup>15</sup> (latest figure: 5.4%), it is at the highest level seen in 13 years. Therefore, for the first time since the pandemic, the Federal Open Market Committee agreed at the beginning of November,<sup>16</sup> to start withdrawing the stimulus measures from that month onwards, reducing the amount of the monthly purchases of debt assets by US\$15 billion.<sup>17</sup> Likewise, although it has kept interest rates in a range of between 0% and 0.25% and indicated that no hikes are likely for the time being, the markets are giving some credibility to this possibility in 2022.<sup>18</sup>

In this context, interest rates resumed an upward trend from September, on the back of the rise in prices, a movement which gathered pace in October. This trend, which had already been observed in the first few months of the year, brought medium- and long-term interest rates to their highest levels in the year to date. In Spain, the 10-year sovereign bond yield ended October at 0.62% (0.06% at the end of 2020).

- The assessment of risks deriving from this interest rate environment is still similar to that described in previous notes, although interest rate risk has become more significant

---

<sup>11</sup> Cash and demand deposits.

<sup>12</sup> It is important to mention that just over €5.60 billion of this figure corresponded to existing investment funds that had previously belonged to other categories.

<sup>13</sup> Inflation in Germany reached 4.5% in October, its highest level since 1993, while in Spain and the euro area as a whole it stood at 5.5% and 4.1%, respectively, the highest rates since 1992 and 2008. The rise in prices is mainly due to the sharp rise in energy prices and supply chain problems.

<sup>14</sup> This strategy establishes a symmetrical medium-term inflation target of 2%, from which upward or downward deviations are equally undesirable.

<sup>15</sup> The Chairman stated that inflation should fall in the second or third quarter of 2022.

<sup>16</sup> The withdrawal of the stimulus measures is known in the markets as "tapering".

<sup>17</sup> The decrease will consist of a US\$10 billion monthly reduction in purchases of Treasury bonds and another US\$5 billion reduction in purchases of mortgage-backed assets, from the current figure of US\$120 billion. In this way, the Federal Reserve would conclude its debt purchases at the end of the first half of 2022.

<sup>18</sup> At the end of September, the Norwegian central bank also announced its first rate hike (of 25 bp) since the outbreak of the pandemic.

and the risk of search for yield strategies has been accentuated in order to preserve the value of money against the threat of inflation. Thus, as a consequence of the lack of return and the loss of value of liquidity positions and risk-free assets due to inflation, in addition to the cost of holding these positions, the propensity to invest in assets with higher expected yields,<sup>19</sup> and hence with higher associated risk, has intensified. These types of assets generally also have high levels of volatility (equity, emerging market or cryptocurrency assets) and credit risk (some have worse credit ratings – subordinated debt and high yield assets), and more unfavourable liquidity conditions (such as subordinated debt and high yield assets, private equity funds or real estate assets). Additionally, the possibility of a significant increase in interest rates would have unfavourable consequences for holders of fixed income assets, who would lose part of the value of their portfolios, and for the most indebted agents, who would face higher financing costs. However, other agents and sectors, such as banking, could see improved margins and higher returns in the context of economic recovery.

### Sources of political uncertainty

- Political and other uncertainties in the United States have diminished throughout the year, although there are still some risks that should be considered. There are still uncertainties over trade relations between the United States and China, especially due to tensions over military activity near the island of Taiwan and the ongoing policy of sanctions and vetoing Chinese companies by the United States. It should be noted that the first phase of the trade agreement between the two countries was agreed on more than one year ago and that the negotiation of the subsequent phases is still pending.<sup>20</sup> On the other hand, trade tensions between the United States and Europe have significantly reduced following the mutual tariff freeze, which reinforces the alliance between the two regions.<sup>21</sup> The purpose of this agreement, adopted at the end of October, which suspends the tariffs on European imports of steel and aluminium applied during the previous US legislature and the pertinent countermeasures, is to renew cooperation between the two powers. The goal now is to forge another sustainable global compact for steel and aluminium. Therefore, although some sources of uncertainty still exist in this area, the likelihood of financial market turbulence has significantly decreased.
- At the European level, although in December 2020 an agreement was reached between the EU and the United Kingdom that reduced the possibility of a hard Brexit, which had been one of the largest sources of risk affecting the continent in recent years, some tensions still remain with respect to the Trade and Cooperation Agreement. The most recent tensions have been over fishing rights and have come to the surface between France and Great Britain. In the financial area, following the restructuring of trading venues, as a result of which several UK entities opened venues and transferred part of their trading volumes to EU countries at the beginning of the year, market activity has been normal.<sup>22</sup>

---

<sup>19</sup> The data on net subscriptions to investment funds for the first half of the year, as well as the preliminary information available for the third quarter, show investors' preference for asset categories with higher yield expectations.

<sup>20</sup> In recent months, the trade representatives of both countries have held talks on this issue in which they exchanged common concerns and agreed on the need to maintain bilateral contact between China and the United States.

<sup>21</sup> Following the rapprochement of positions between the United States and the EU during the year, the bilateral tariffs imposed due to the dispute over subsidies to Airbus and Boeing until December were suspended in June, if an agreement was not reached earlier. An agreement was reached at the end of October.

<sup>22</sup> However, there are still companies that resolve to their shares from the London Stock Exchange: the most recent example is Ryanair, which announced in early November that it was contemplating delisting its shares within six months due to low trading volumes as a result of Brexit. The departure of the United Kingdom from the EU and the restrictions set by airline ownership and control regulations mean that more than 50% of the capital of the company must be in EU hands, which has caused a significant drop in trading on the London Stock Exchange.

However, the transfer of trading to these venues may lead to an increase in operational risk. One of the most significant decisions taken recently involves Euronext, which at the beginning of November announced its departure from the United Kingdom and the transfer of its clearing functions to Italy.

- In Spain, while the risks relating to the management of the health crisis and the appearance of new variants of the virus persist, these have been significantly reduced in recent months thanks to the vaccination process, which has been positive and more successful than in many neighbouring countries. However, the World Health Organization (WHO) has recently warned that there may be new waves of contagion in the coming weeks due to the appearance of new variants of the virus and to the change in peoples' habits in winter. In addition, parliamentary fragmentation remains high and this could give rise to tensions and make it difficult to reach agreements (for example, the approval of budgets).

### Climate change and ESG

- Risks relating to climate change are gaining more and more relevance in the economic and political decisions of agents, as demonstrated at the recent United Nations Climate Change Conference (COP26) held in Glasgow. These risks are associated with high direct costs<sup>23</sup> and the cost of transitioning<sup>24</sup> to a low-carbon economy, as the amounts will depend largely on the preventive measures designed to alleviate them. The transition process will require high volumes of economic resources to finance the changes<sup>25</sup> and financial markets play a key role in channelling these funds.
- The EU has long been working on a regulation on sustainable finance, which includes a taxonomy or classification of sustainable activities, although there are still some difficulties in correctly assessing certain climate and environmental risks.<sup>26</sup> Therefore, a significant group of activities have not yet been included in the taxonomy. In addition, a series of proposals have been adopted, among other initiatives, aimed at achieving carbon neutrality by 2050 and reducing greenhouse gas emissions<sup>27</sup> by at least 55% in ten years. A European regulation on sustainability-related disclosures in the financial services sector has also been approved and work is being carried out on a sustainability-related corporate directive for all listed companies.<sup>28</sup>
- Likewise, financial markets are in a process of rapid transformation as a result of the significant increase in the supply and demand for assets that incorporate sustainability criteria (ESG).<sup>29</sup> This increase has occurred despite certain difficulties involved in correctly assessing<sup>30</sup> risks associated with climate change, in the absence of full and standard information about this risk. ESG bonds are issued on a recurring basis by many

---

<sup>23</sup> The direct costs of climate change derive from events relating to this change, primarily meteorological and hydrological disasters (floods, fires, heat waves, droughts, etc.), which have increased significantly in recent years.

<sup>24</sup> In the form of costs of mitigation and adaptation to a low-carbon economy (replacement of cars, energy systems, changes in production processes and supply sources, etc.).

<sup>25</sup> In public resources alone, the Investment Plan for a Sustainable Europe envisages the mobilisation of €1 trillion in sustainable investments over the next decade from the EU budget with the goal of achieving a carbon neutral economy by 2050.

<sup>26</sup> These include activities such as agriculture, and energy sectors such as nuclear energy and natural gas.

<sup>27</sup> The package of measures includes the review and expanded coverage of the carbon emissions market.

<sup>28</sup> In Spain, since 2018 it has been obligatory for large companies to contain non-financial information in their consolidated management report that includes environmental and social issues.

<sup>29</sup> In accordance with environmental, social and governance criteria (ESG).

<sup>30</sup> The price setting mechanism for carbon emission rights does not allow the negative externalities associated with the climate to be correctly valued when these prices are set through an auction.

companies and governments, while an increasing number of issuers are entering this market. These include the Spanish Treasury, which in September made the first issuance of this type of asset in the Kingdom of Spain,<sup>31</sup> and the EU, which did the same with its first issue of this type amounting to €12 billion (the largest green bond issue in history).<sup>32</sup> In addition, many asset managers and credit rating agencies are adding more assets to their portfolios and analyses, respectively, that meet sustainability criteria.

- In this context, there are certain asset segments in which investor demand is exceeding supply. This could cause distortions in price formation processes and the valuation assigned to these products may not be correct.<sup>33</sup> This in turn could trigger sharp corrections in the prices of some assets in the future, or give rise to greenwashing<sup>34</sup> (or ecobleaching) of assets that are considered sustainable in principle<sup>35</sup> but in reality are not. Note should be taken of the proposal made in July by the European Commission for a regulation to establish a European Standard for Green Bonds, which aims to prevent greenwashing and boosts the EU's leadership role in green finance.<sup>36</sup> Companies and governments will be able to voluntarily adopt the new standard, which will be assessed by an external reviewer to ensure that all projects are aligned with requirements.
- In order to avoid greenwashing, the Sustainable Finance Disclosure Regulation applicable to the financial services sector,<sup>37</sup> which came into force in March this year, establishes reporting obligations that are aligned with the level of transparency and commitment to the ESG criteria of the financial product, which are more stringent and detailed for products that pursue sustainable investment objectives, known as Article 9 products, than for those applicable to Article 8 products, which offer ESG features.
- In the case of financial institutions, the greatest risks are for those banks that have a significant percentage of loans to companies with higher carbon emissions and, therefore, with higher transition risks, on their balance sheets. Thus, although financial institutions are making a significant effort to rebalance their balance sheets and make them more sustainable by increasing their financing transactions in this type of activity, it is possible that some of them may have to endure losses as a result of the credit risk associated with the transition to climate change and overexposure to the assets of these issuers. Some institutions could experience downgrades in their credit ratings for failing to correctly assess the climate risk associated with their borrowers, which could raise their financing costs. Furthermore, the ECB has recently included climate risk into its monetary policy strategy and it will also be part of its risk review. In the future, it will be taken into account for debt purchases and other transactions.
- Investments associated with adaptation to climate change offer opportunities in terms of employment and productivity improvements linked to new technologies ("green fintech"), as well as new possibilities for financial markets to develop and grow assets linked to sustainability. In addition, they will allow companies to align themselves with

---

<sup>31</sup> The Treasury placed €5 billion in 20-year bonds, with demand for €60 billion, 12 times the supply.

<sup>32</sup> The EU will become the largest issuer of green bonds in the world, since it expects to issue debt of this type to finance the Next Generation EU programme for a total of €250 billion to year-end 2026 (one third of the total amount of the programme).

<sup>33</sup> Bubbles could be created in some classes of these assets due to the current scarcity of supply.

<sup>34</sup> "Green washing" is a company's attempt to pass its products or activities off as sustainable when in reality they are not, in order to attract the interest of potential investors or clients.

<sup>35</sup> Some green bond issues are including clauses that prevent potential investor claims in the event that the issuer breaches its sustainability commitments.

<sup>36</sup> It is estimated that 30% of the new debt issues made by the EU up until 2026 (amounting to €800 billion) to finance European recovery will be of a sustainable nature.

<sup>37</sup> 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.

some of society's values, and therefore those of their clients, in addition to improving their perception of risk, which could ultimately lead to lower financing costs.

### Other sources of uncertainty

- As described in previous editions of this note, cybersecurity is one of the most important risks for companies and organisations, in particular for financial institutions.<sup>38</sup> A growing number of cyberattacks have been observed as non-face-to-face activities such as teleworking or the provision of services through digital channels have become more commonplace. The pandemic has accelerated the digital transformation of the financial sector so that many day-to-day transactions can be carried out digitally and remotely. This raises the possibility that these types of threats will spread between entities and affect the stability of the financial system. The consequences of this operational risk can affect financial markets and spread to other sectors, leading to a general loss of confidence in the system and consequently damaging financial stability. Therefore, investing in cybersecurity is vital for all types of companies and supervisors. It is also important to encourage communication and coordination between financial authorities and with other authorities in the sector and private entities because, in the event of a cyber incident, a joint effective response could prevent potential systemic harm. Currently, different regulations are being developed at the European level that address this matter, among which the Regulation of the European Parliament and of the Council on the digital operational resilience of the financial sector, which is currently being approved, stands out (also known as DORA, Digital Operational Resilience Act).<sup>39</sup>

---

<sup>38</sup> According to bulletin number 37 of the Bank for International Settlements (BIS), published in January 2021, the financial sector has suffered cyberattacks more frequently than other sectors and, after the health sector, it was subject to the highest proportion of these types of attacks during the pandemic.

<sup>39</sup> The objective is to establish a common framework of obligations, principles and requirements in the area of cybersecurity, so that all financial institutions are subject to a set of standard regulations to mitigate and manage the security risks affecting networks and computer systems.

## Risk categories

### Market risk: green

- After the significant increases seen in the first half of the year, buoyed by the positive data on the recovery of economic activity, the international securities markets began the third quarter of the year with gains that were diluted by various sources of uncertainty. Most significantly, the rebound in inflation in most economies, problems in supply chains and uncertainties surrounding the financial problems of the Chinese real estate giant Evergrande and the possible spillover in the international financial system. Subsequently, from October onwards, the fact that the problems faced by this real estate company had no notable repercussions on the financial system and the publication of numerous positive corporate earnings figures (confirming economic recovery) put the international securities markets to back on an upward path. However, there is still a great deal of uncertainty surrounding inflation, the scale of the recovery and the potential rise in virus infections in Europe.
- In this context, most of the international stock indices were largely flat in the third quarter,<sup>40</sup> with uneven gains posted in October. The Japanese indices marked different trend, with small gains in the third quarter and declines in October. The largest increases were seen in the US markets, while in Europe the improvement was less notable and varied between regions, with the greatest rises corresponding to the large European companies on the Eurostoxx 50, and the smallest gains were observed in UK FTSE 100 companies.

All US indices posted significant gains in October, allowing them to comfortably offset the slight losses in the third quarter and reach new all-time highs.<sup>41</sup> The increases seen in October ranged between 5.8% (Dow Jones) and 7.3% (Nasdaq technology),<sup>42</sup> with rises of 17% and 20.3%,<sup>43</sup> respectively, in the year. The Dow Jones index, which has a greater weighting of companies from the traditional economy, industrial and financial institutions, is benefiting from the positive effect of the recovery in the economy and industrial activity. The more general S&P 500 index, which has a growing weight<sup>44</sup> of technology companies, posted an accumulated gain of 6.9% in October and 22.6% in the year, as the good performance of technology companies has been boosted by the performance of cyclical stocks, favoured by the recovery scenario.

The performance of the main European stock markets was similar, with increases in October that put an end to the fluctuations marked in the previous months. The French and Italian indices saw the largest gains,<sup>45</sup> where activity data for the third quarter<sup>46</sup> were better than expected, and the smallest gains were posted by Spain and Germany,

---

<sup>40</sup> Most large international indices showed a flat performance in the third quarter, which ranged from the 2.3% rise of the Italian FTSE Mib 30 index and the 1.7% decline seen by the German Dax 30. The French Cac 40 rose by 0.2%, while the European Eurostoxx 50 index fell 0.4%. In the United States, the S&P 500 advanced 0.2%, while both the Dow Jones and the Nasdaq technology index fell slightly, by 1.9% and 0.4%, respectively.

<sup>41</sup> All major US indices reached all-time highs in the last week of October.

<sup>42</sup> The shares of the main US technology companies, known as FAANG (Facebook, Apple, Amazon, Netflix and Google) posted an accumulated performance of -2.4%, 3.3%, -4.5%, 15.5% and 9.5% respectively in the third quarter, with figures of -6.9%, 9.4%, -2%, 30.7% and 21.3% in October. In the year to date, accumulated gains stand at 18.5%, 12.9%, 3.5%, 27.7% and 68.9%, respectively.

<sup>43</sup> The Nasdaq index rose by 43.6% in 2020.

<sup>44</sup> The weight of technology companies represents 27.9% of the capitalisation of this index, its highest proportion in history. Of the top 10 companies by weighting in this index, eight are technology stocks and account for almost 25% of the total.

<sup>45</sup> The largest gains posted by the main European markets in October were 5% for the European Eurostoxx 50, 4.8% for the French Cac 40 and 4.6% for the Italian FTSE Mib 30, while the weakest performance corresponded to the Spanish Ibex 35 index, the German Dax 30 and the UK FTSE 100, with increases of 3%, 2.8% and 2.1%, respectively.

<sup>46</sup> Third quarter GDP grew by 3% in France and 2.6% in Italy, outpacing estimates in both cases. In contrast, growth in Spain and Germany was 2% and 1.8%, respectively, falling short of expectations.

where activity was somewhat weaker. The rises seen in October have put accumulated earnings for the year as a whole at between 12% for the UK FTSE 100 (where companies are still affected by Brexit uncertainties) and 23% for the French Cac 40.<sup>47</sup>

- In Spain, the Ibx 35 barely moved between July and September, and rose by 3% in October, which pushed its accumulated gain for the year to 12.2%. These figures are between 2.2 and 11 pp below those of the main euro area indices and are due to a certain delay in the recovery of the economy and to other uncertainties of a domestic nature. By sector, the largest gains in the period were in the financial and real estate sectors, in addition to the construction and oil sectors, and the performance of tourism and textiles companies also stood out. The financial sector has been boosted by the economic recovery, the fact that it can once again pay out cash dividends and the expected tightening of monetary policy, while real estate and construction stocks reflect the dynamism of the real estate market and rising prices. Companies in the tourism sector have been boosted by the recovery of this activity, following the lifting of restrictions on movement and the waning virus infection rate. Inditex, the main textile company, has successfully completed its digital transformation and turnover has recovered to pre-pandemic levels.

Electricity companies have posted the largest falls (more than 8% in the year), particularly in the third quarter following the government's approval of a royal decree-law aimed at reducing their income, which they later recovered after the measure was amended. Pharmaceutical stocks also saw significant losses, in addition to manufacturers of industrial goods, in the case of the latter due to the supply chain problems.

- The small rise in quoted prices from the middle of the year until October, together with a somewhat stronger increase in corporate earnings expected in the coming months, caused the price-earnings ratio (PER) of the Ibx 35 to decrease from 16.6<sup>48</sup> in mid-June to 14.3 in October, the lowest level since the first half of 2020, while its historical average is 13.6 (see Figure 4). The value of this ratio declined in most of the months of the year, as the health situation improved and corporate earnings expectations progressively recovered.
- The international debt markets, where interest rates had fallen in the longest-dated segments at the beginning of the summer, experienced successive increases in September, which were consolidated in October following the significant rise in inflation rates<sup>49</sup> in the United States and Europe. The markets are factoring in a scenario of higher inflation and the possibility that the rise will not be as short-lived as it was expected to be a few months ago.
- In this scenario, the interest rates on Spanish public debt and those of the main European economies<sup>50</sup> rose between September and October. The rises were between 23 and 43 bp on the longest-dated sections of the curve. From the middle of the year to October, the increases in 10-year government debt yields ranged from 5 to 31 bp.<sup>51</sup> They remained negative only in Germany and presented values of close to zero in the Netherlands. In Austria, Finland and Belgium they were below 0.25%, in France and Ireland they reached values of around 0.3%, in Spain and Portugal they were above 0.5%, and in Italy and Greece they were once again over 1%.

---

<sup>47</sup> The French and Italian indices, and the European Eurostoxx 50, are showing YTD revaluations (23%, 20.9% and 19.6%, respectively) that are similar to those posted by US indices.

<sup>48</sup> In the same period, the PER ratio of the US S&P 500 stock index fell to 20.4 times, while that of the European Eurostoxx 50 decreased to 15.1 times.

<sup>49</sup> See the section entitled "Low interest rate environment".

<sup>50</sup> In the United States, 10-year rates increased by around 11 bp between the end of June and October, to stand at above 1.5%.

<sup>51</sup> The greatest increases occurred in the economies with the highest deficit and public debt levels.

- Yields on corporate debt also rose all along the curve,<sup>52</sup> although the main increases were in the longest-dated segments. While some long-term European corporate bonds are likely to be acquired under the ECB's corporate debt purchase programmes and many of them have shown negative yields in recent months, it is now virtually impossible to find corporate debt with a negative yield in the secondary markets. Despite the significant differences in yields on this type of debt, which vary according to its rating and level of subordination, they have also been kept at low levels by the search for yield phenomenon, which pushes down their yield given the lack of return offered by risk-free assets.
- The rebound in inflation, the fact that this is likely to continue for some time and the possibility that central bank monetary policy could be tightened earlier than had been expected a few months ago have increased the market risk of debt assets, particularly for high yield corporate debt with a lower credit rating and subordinated debt, as these instruments do not have the direct support of the ECB's stimulus programmes and tend to have lower liquidity. Likewise, the effects of the pandemic could have significantly weakened the financial structure of some companies, so the performance of the premiums required will largely depend on how the economic recovery progresses and their own business activity. In this context, companies that find it more difficult to rekindle their activity or whose recovery is slower, and that have higher leverage and other financial vulnerabilities, could have problems obtaining financing at a reasonable cost. A similar situation could occur in more vulnerable economies with higher levels of debt and significant fiscal imbalances. In these economies, a rise in interest rates could lead to a significant increase in the service of debt, in a context in which it is difficult to increase tax revenues.

Therefore, note should be taken of the potential effects of an eventual rise in risk premiums on the prices and valuations of certain assets, which is relevant for some fund portfolios – especially fixed income funds – which are sometimes exposed to assets that are illiquid,<sup>53</sup> complex and have credit ratings that are below investment grade.

### Credit risk: green

- Despite the ECB's support<sup>54</sup> and having remained relatively stable for most of the quarter, the sovereign risk premium rose slightly in the second half following the release of weaker-than-expected third-quarter GDP data, which have moderated and delayed the outlook for recovery to pre-pandemic levels. Therefore, its value – measured as the difference between the yield on 10-year public debt in Spain and Germany – reached 77 bp at the end of October, standing 14 bp above the level reached at the end of the previous quarter and the start of the year (Figure 11).
- The risk premiums of Spanish private sector issuers remained slightly higher than at the beginning of the quarter, but below the values seen at the beginning of the year. The most significant decreases were marked by financial institutions. While the risk premium of the latter increased slightly in the quarter due to expectations that regulatory

<sup>52</sup> Corporate debt yields present greater dispersion depending on the type of asset (senior or subordinated debt), the credit rating and whether or not the debt is eligible for purchase by the ECB.

<sup>53</sup> The abundant purchases of corporate debt and some types of debt issued by financial institutions in both the primary and secondary markets by the ECB could be affecting the liquidity of issues with smaller volumes or where ownership is concentrated in a reduced number of investors.

<sup>54</sup> The ECB acquires Spanish public debt through its PSPP and PEPP asset purchase programmes, accumulating a balance of more than €460 billion, around 42% of the outstanding balance of long-term government debt.



changes<sup>55</sup> could increase capital requirements in the future, they have benefited from the progressive economic recovery and expectations of a tightening of monetary policy, which would contribute to improving their margins, given the favourable financing conditions<sup>56</sup> offered by the ECB. The risk premiums of non-financial companies, while benefiting from the improved outlook for business performance and the positive effect of the ECB's purchases – which should help keep their financial costs down –,<sup>57</sup> presented slight increases due partly to the regulatory changes for electricity companies introduced by the government. Thus, the average CDS of financial institutions at the end of October stood at 64 bp, above the figure of 60 bp at which they started July, and the average CDS for non-financial companies stood at 54 bp, barely 1 bp higher than at that date.

- The information available on the credit ratings of the debt of Spanish issuers in the third quarter of 2021 does not reveal any significant changes in this area. Most Spanish debt<sup>58</sup> is still high quality, investment grade debt (96.4% of the total outstanding balance in September, compared to 96.1% in June). Further, the proportion of investment grade debt in the notch immediately below the high yield category<sup>59</sup> remains small and has decreased compared with previous quarters. This type of debt represented 4.2% of total debt in September, compared to 4.5% in June and 5.2% in March. High yield debt represents 3.6% of total outstanding debt, practically the same proportion as in 2020 (around 3.5%) and slightly lower than that observed in June 2021, when it increased to 3.9%.
- However, as mentioned in previous notes, some circumstances must be taken into account when looking at the credit risk levels of Spanish issuers: i) the ECB's purchase programmes largely explain the small size of the risk premiums of all issuers in the euro area, including Spanish issuers; ii) the risk premiums of high yield issuers are also indirectly reduced as a result of investors seeking returns; and iii) the ratings and risk premiums analysed correspond mostly to large or medium-sized companies that have either been less affected by the crisis or have more financial muscle to deal with its effects. These circumstances could alter in the coming months if there is a change in monetary policy.

Further, support measures implemented by the authorities, such as public guarantees, moratoriums or direct aid, have so far prevented a significant increase in the financial problems of many companies, especially SMEs, but it is possible that this will change as the measures are withdrawn. Therefore, we see increasing credit risk in the coming months<sup>60</sup> that could force many companies to carry out financial restructuring

---

<sup>55</sup> The EU has proposed a review of its banking rules to incorporate the provisions of Basel III, which will mean further increases in capital requirements.

<sup>56</sup> These include the different financing programmes specifically for banks (TLTRO-III and PELTRO), as well as specific purchase programmes for assets issued by financial institutions. The ECB, through its latest covered bond purchase programme (CBPP3) and the asset backed securities purchasing programme (ABSPP), had accumulated purchases of €297.60 billion and €27.67 billion respectively to mid-July, of which more than 36% and 64% were carried out in the primary market. At the end of September the ECB had also accumulated covered bonds for the amount of €6.08 billion, acquired under the PEPP.

<sup>57</sup> Thanks to the positive impact of its purchase programmes, the ECB, through its corporate sector purchase programme (CSPP), which has been extended to all issuers that meet the conditions of the programme (minimum rating of BBB-), accumulated purchases amounting to €301.89 billion to the end of October, of which almost 23% were acquired in the primary market. In addition, at the end of September it had accumulated corporate bonds and promissory notes amounting to €33.68 billion and €5.38 billion respectively, acquired under the PEPP programme.

<sup>58</sup> Includes debt authorities.

<sup>59</sup> BBB- level for Fitch and S&P or Baa3 for Moody's.

<sup>60</sup> Non-performing resident private credit rose slightly in August to 4.43%.

processes,<sup>61</sup> especially smaller companies or those belonging to the sectors most affected by the pandemic.

- Financing extended to non-financial sectors<sup>62</sup> of the economy continued to grow as credit to households remained strong, which was accompanied by a slowdown in loans to companies. The value of the first increased by 0.8% year-on-year in September, with a 0.7% rise in loans for home purchases (compared to 0.5% in June), which offset the slowdown in consumer credit to 3.1% (from 3.6% in June). For non-financial companies, growth in financing slowed to 2.5% year-on-year (from 3.2% in June), as the accelerated decrease in loans to companies (which went from 1.3% in June to 1.6% in September) was accompanied by a slowdown in the increase in debt financing (to 8.9%) and foreign loans (to 6.6% in September).

### Liquidity, financing and fragmentation risk: yellow

- Fixed income issues registered with the CNMV in the second half of this year (until October) stood at €31.11 billion,<sup>63</sup> 12.6% higher than in the same period of the previous year (€27.69 billion), with highlights including the volume of covered bonds issued and the larger issuance of corporate commercial paper.<sup>64</sup> In contrast, debt issues made in the year to date stood at €79.48 billion, 5.7% lower than in the same period in 2020. The decline was due to the comparison with the high figures reported in 2020, when many issuers took advantage of the favourable conditions offered to raise liquidity to address the crisis, and also to the significant volume of issues registered abroad, which amounted to €87.77 billion to September.<sup>65</sup> This represents year-on-year growth of 23.4% and owes to the increase in issues of long-term debt and commercial paper.<sup>66</sup>

Fixed income issues carried out by Spanish issuers with ESG criteria remained unchanged and included the Spanish Treasury itself, which carried out its first issue of this type in September amounting to close to €5 billion. In the year to date, issues have been made for the amount of €25.41 billion,<sup>67</sup> 88% more than in the same period of 2020. These issues, which include those made by public administrations, were mostly carried out abroad, representing 57% of the total in 2021,<sup>68</sup> and were mostly concentrated in green bonds (69% in 2021), although the volumes of social and sustainable bonds issued are also increasing.<sup>69</sup> Likewise, the number of issues and issuers of these types of bonds continues to rise.<sup>70</sup> These are mainly private sector companies, although the inclusion of

---

<sup>61</sup> A growing number of companies have applied for financial aid from the Solvency Fund for Strategic Companies, the purpose of which is to provide temporary state support to strengthen the solvency of non-financial companies affected by the pandemic.

<sup>62</sup> Source: Economic indicators of the Bank of Spain.

<sup>63</sup> Preliminary data for October show that in this period there were issues amounting to €6.90 billion, mostly concentrated in covered bonds and corporate commercial paper.

<sup>64</sup> Issuance of commercial paper grew more than 12% in year-on-year terms and more than 40% compared to the previous quarter.

<sup>65</sup> In 2021, issues registered abroad outpaced issues registered with the CNMV, reversing the trend observed in 2020.

<sup>66</sup> Long-term debt and commercial paper issues are distributed at 50%.

<sup>67</sup> According to data from Dealogic. Green bonds are bonds that are used exclusively for the full or partial financing or refinancing of a combination of new or existing projects, and which are aligned with the four components of the Green Bond Principles (GBP). Social bonds are intended for new or existing social projects and aligned with the four components of the Social Bonds Principles (SBP); while sustainable bonds are used exclusively for financing or refinancing a combination of green and social projects.

<sup>68</sup> In the period between 2016 and 2021, on average, 65% of these issues were made abroad. Additionally, 85% of the ESG issues made by private sector entities took place abroad.

<sup>69</sup> Issues of social and sustainable bonds represent 10% and 21% of the total amount issued to October 2021.

<sup>70</sup> The ESG issues made by the private sector represented more than 12% of the total long-term issues made by Spanish issuers to October, compared to 7% in 2020.

the Spanish Treasury as an issuer has reduced the weight of issues made by this segment to 71% of the total.<sup>71</sup>

In the primary equity markets, an IPO was carried out through the initial public offering of Acciona Energía,<sup>72</sup> the first IPO in the Spanish market since the first quarter of 2018.

- The financing capacity of the Spanish economy increased to €1.30 billion in August,<sup>73</sup> compared to the figure of €800 million registered in the same period of 2020. This positive performance was due to the improvement in the balance of goods and services, which was boosted by the significant growth in the balance of tourism, which continued the positive trend marked in previous months to stand at €3.50 billion. However, non-tourism goods and services forged a different path, recording a negative balance of €1.50 billion in August (compared to the balance of close to zero in the same month the previous year) due to the larger increase in imports compared to exports. The accumulated 12 month figure shows financing capacity of €17.40 billion (in line with the figure seen in the same period of 2020 but far lower than the €30 billion posted in 2019). Capital inflows<sup>74</sup> stood at €5.80 billion in August, mainly due to the advance of EU funds from the Next Generation EU programme, while the accumulated 12 month net financial account balance was €27.20 billion, close to half the value achieved in the same month of 2020.
- Household deposits grew by 5.2% year-on-year in September, while those of non-financial companies grew by 2.8%, to stand at €904.60 billion and €304.50 billion, respectively, which places the latter at a record high and the former<sup>75</sup> very close to that level. Households, where deposits have grown every month since February 2020 except for August this year, and companies have both gone ahead with some consumption and investment decisions but have delayed others, and continue to build up liquidity (combined increase of over €141 billion from the end of February 2020 to September 2021) in order to address any needs and uncertainties that may arise in the near future. Household purchasing power is starting to feel the effects of the high inflation rate,<sup>76</sup> in addition to the lack of profitable low-risk investment alternatives.
- Consolidated household and corporate debt reached 144.2% of GDP in the second quarter,<sup>77</sup> totalling €1.67 trillion, 3.7 pp above the debt level registered in the same period of 2020.<sup>78</sup> Household debt accounted for 61.4% of GDP, while corporate debt stood at 82.8%. Household financial wealth increased by 5.1% year-on-year to €2.48 trillion, 214.1% of GDP, while in net terms it stood at €1.71 trillion, 147.7% of GDP and 11.1 pp higher than in the same period of the previous year, due mainly to the increase in financial assets.
- Average daily trading in the continuous market stood at just under €1.19 billion in the third quarter, 4.5% lower than in the same quarter of 2020, but increased in October to €1.95 billion. Trading of Spanish securities on Bolsas y Mercados Españoles (BME)

---

<sup>71</sup> Issues made by public administrations accounted for 29% of the total amount issued, while the remainder, 43% and 28%, corresponded to financial companies and financial institutions, respectively.

<sup>72</sup> Acciona Energía went public on 1 July.

<sup>73</sup> According to Bank of Spain monthly advance balance of payments data.

<sup>74</sup> The data reflect the financial account excluding the Bank of Spain.

<sup>75</sup> Household deposits reached an all-time high of €942.90 billion in July.

<sup>76</sup> See household savings data described in the "Macroeconomic environment" section.

<sup>77</sup> Source: Financial Accounts of the Spanish Economy published by the Bank of Spain.

<sup>78</sup> The increase in the ratio of debt to GDP in relation to the same quarter of 2020 is due to the increase in debt and, to a lesser extent, to the decrease in GDP, which shows negative changes in the four quarters accumulated to the second of quarter of the year.

accounted for 51.9%<sup>79</sup> of the total carried out in this venue and other competing trading venues (excluding OTC trading and trading performed through systematic internalisers). This figure comes close to the previous all-time low of 51.6% reached in the first quarter and in a context of declining trading levels and slight increases in volatility. Likewise, the trading of Spanish shares through systematic internalisers was below 7% of the total trading of Spanish securities,<sup>80</sup> less than half of the figure seen in the same quarter of 2020. The low levels of trading on the continuous market, in a context of a slight rise in volatility,<sup>81</sup> can be attributed to the greater competition from other trading venues.

- The liquidity indicator of the Ibex 35 (measured through the bid-ask spread) remained stable at levels similar to those of the previous quarter and slightly above pre-crisis levels. Improvements in the liquidity indicator are favoured by moderate levels of volatility, but are hampered to some extent by low trading volumes. The sovereign bond spread once again tightened slightly as the ECB purchases help to ensure market liquidity. Although the range is still very low in absolute terms (less than 1 bp) and interest rates remain very low, it has improved in relative terms on the back of the increase in interest rates since September (Figure 15).
- Interest rate spreads between loans to Spanish companies and loans to companies in the euro area decreased once again both for loans amounting to less than €1 million and for those with higher amounts. In the first case, they were reduced to a negative spread of 6 bp (compared to the positive figure of 4 bp in June), while for the latter there was a decrease to 7 bp (11 bp in June). Additionally, the Bank Loan Survey for the third quarter of the year shows some growth in the supply of credit and in the volumes of credit granted, as well as a degree of stability or a slight tightening of the criteria for granting loans depending on the segment and the region in question. Thus, in Spain the terms and conditions for consumer loans and loans for house purchases have eased slightly, while in the euro area they have barely changed in the first case but have become tighter in the second. Loan applications have seen a moderate increase in both segments in almost all areas, boosted by the economic recovery.

### Risk of contagion: orange

- The correlation between the daily yields of the different types of Spanish assets has experienced a slight upward trend in recent months, with some fluctuations, although it remains well below the highs seen in March 2020 (when the median of these correlations hit 0.75). The value of this indicator increased slightly to 0.26 in October compared to mid-July, when it was at 0.19, but is lower than the average value for the whole of 2020 (0.42). The low and high values of these correlations also increased slightly from July: the lows went from around -0.40 to -0.35 and the highs went from 0.66 in mid-July to 0.74 to the end of October. The correlation between the different sectors has also fluctuated since July. This was the case of the correlation between equity and fixed income assets, although in the total calculation it increased, as did the correlation between financial and non-financial debt. In general, the correlation between sovereign debt and fixed income and equity followed a downward path, with increases in the last weeks of October. It should be noted that higher levels of correlation lead to greater possibilities of contagion between different types of assets, and make it difficult to diversify portfolios.

---

<sup>79</sup> Preliminary data for October show that BME's share recovered, to stand at 58.3%.

<sup>80</sup> Defining "total trading" as the sum of trading subject to non-discretionary market rules and that carried out through systematic internalisers.

<sup>81</sup> Small rises in volatility favour the activity of some types of trading such as algorithmic or high-frequency trading.

- The correlation between the yield on Spanish sovereign bonds and the yield on bonds of core EU countries barely changed compared to the levels observed in July. It has remained stable at around 0.97 since mid-February, although in the last days of October it was at 0.99, due to a slight increase in the correlation between the Spanish sovereign bond and Dutch bond yields. The correlation between the yield on the Spanish sovereign bond and that of other non-core euro area countries also rose compared to the figures seen at the end of July (see Figure 32). This indicator, which in mid-July was close to 0.83, started August at 0.96, driven by the higher correlation between Spanish and Irish bonds, and since then has remained relatively stable to end October around 0.97.

## Market risk: green

Figure 3. Stock market prices

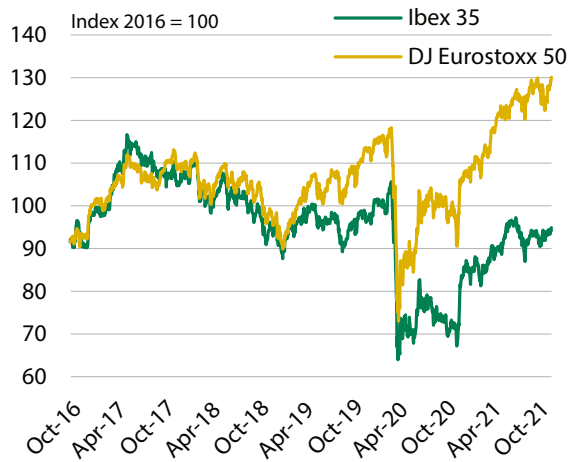
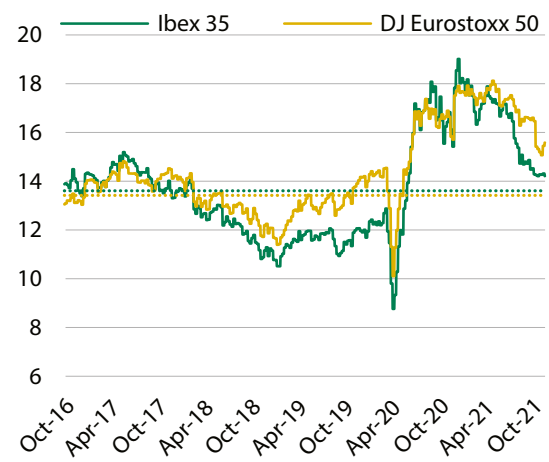


Figure 4. Price-earnings ratio (PER)



The dashed lines correspond to the average P/E ratio calculated since 2000.

Figure 5. Short-term interest rates (3 months)

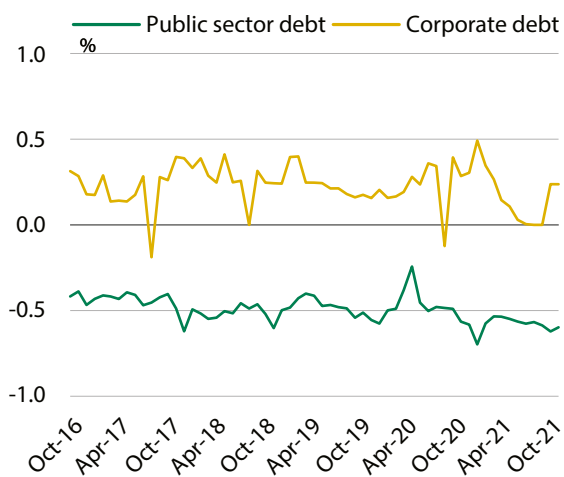


Figure 6. Long-term interest rates (10 years)

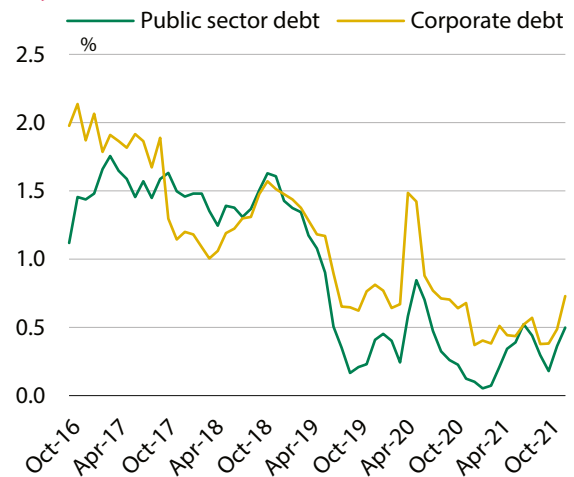


Figure 7. Oil price

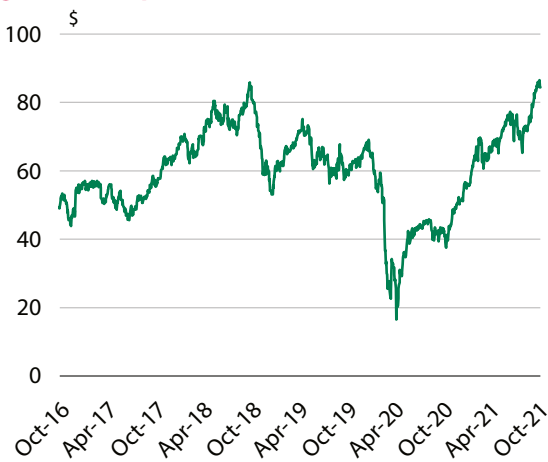
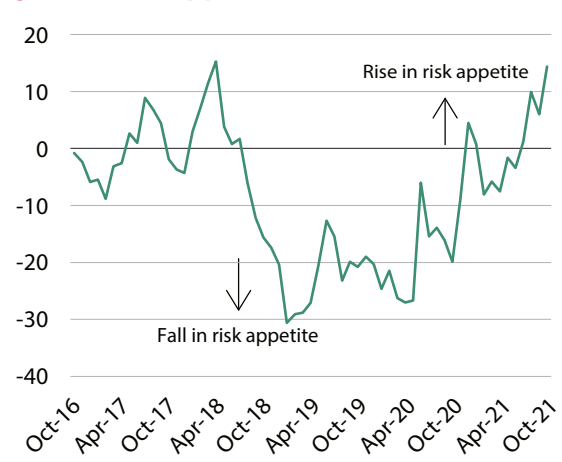
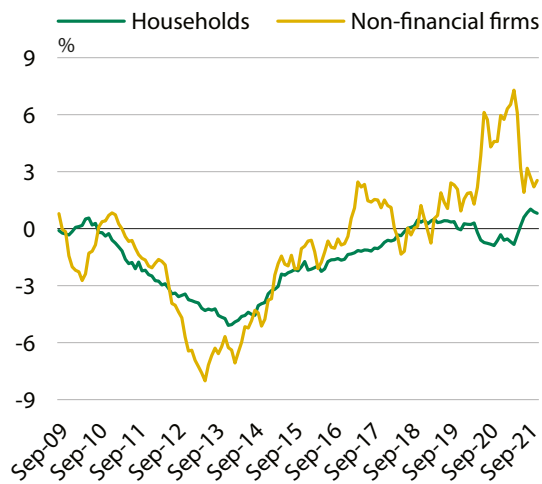


Figure 8. Risk appetite (State Street)

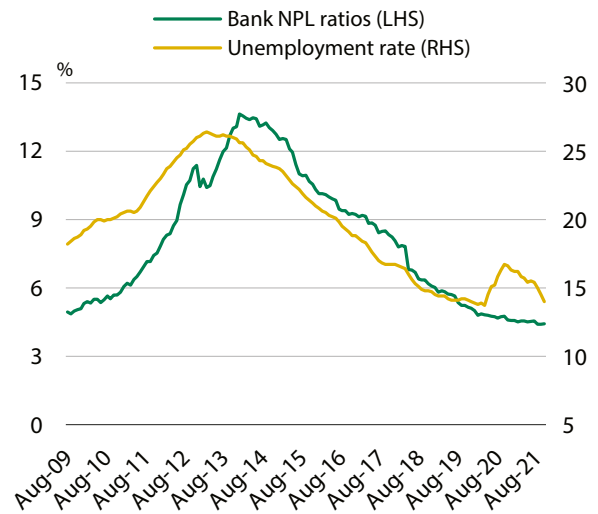


## Credit risk: green

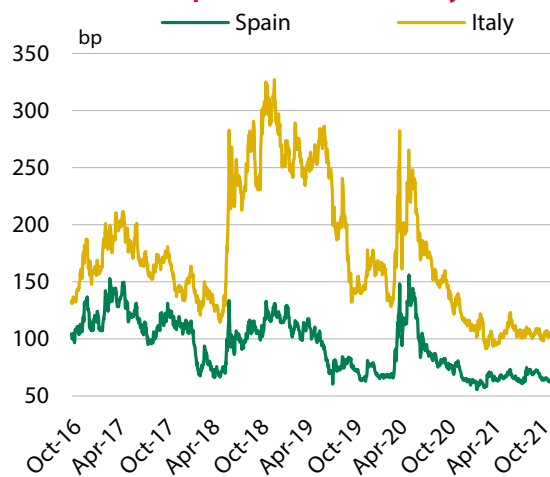
**Figure 9. Financing of the non-financial sector**



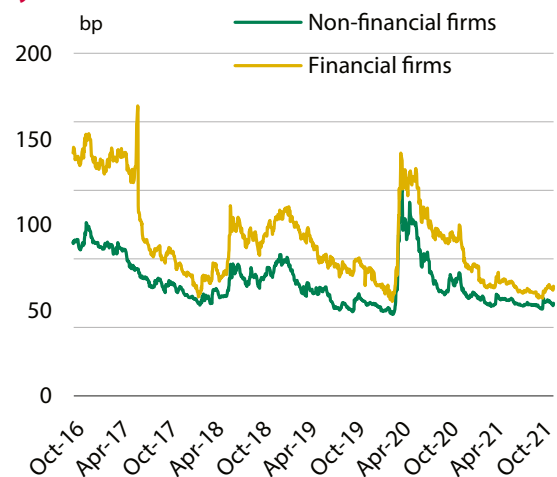
**Figure 10. NPL (delinquency) ratio and unemployment rate**



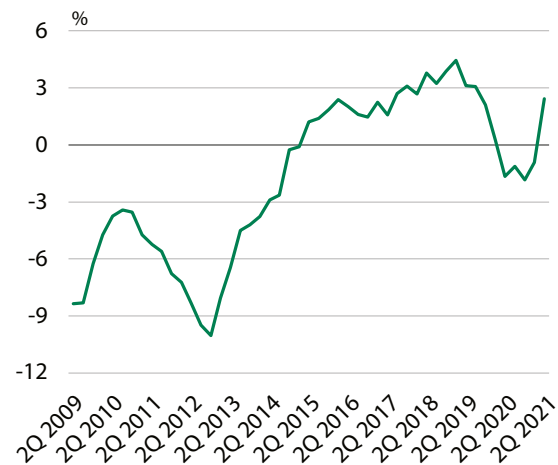
**Figure 11. 10-year government debt risk premium (rate spread with Germany)**



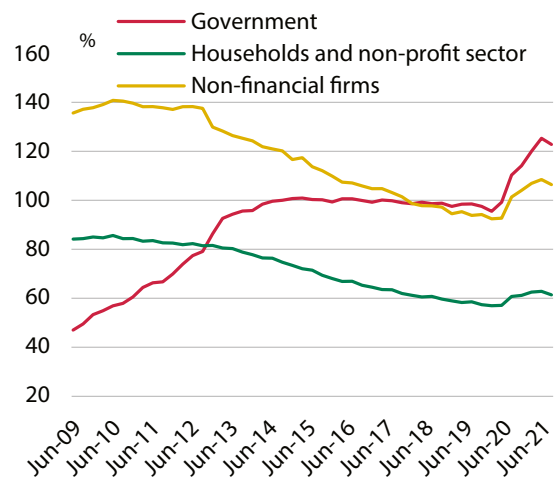
**Figure 12. Private debt risk premium (5-year CDS)**



**Figure 13. Housing prices (year-on-year change)**

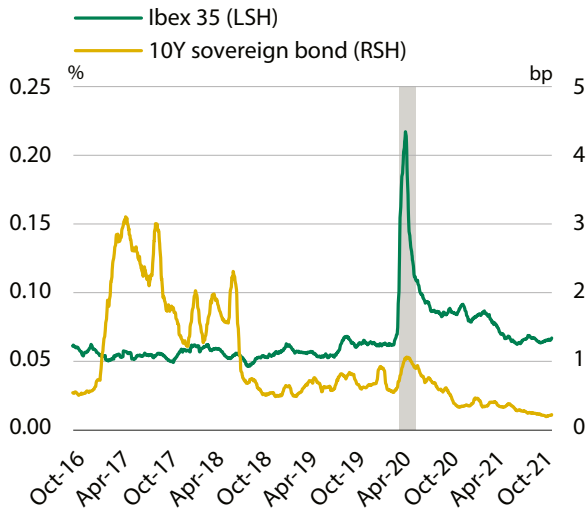


**Figure 14. Indebtedness (% GDP)**



## Liquidity, financing and fragmentation risk: yellow

Figure 15. Liquidity (bid-ask spread)



The shaded area corresponds to periods when short selling was banned.

Figure 16. Volatility (1-month moving average)

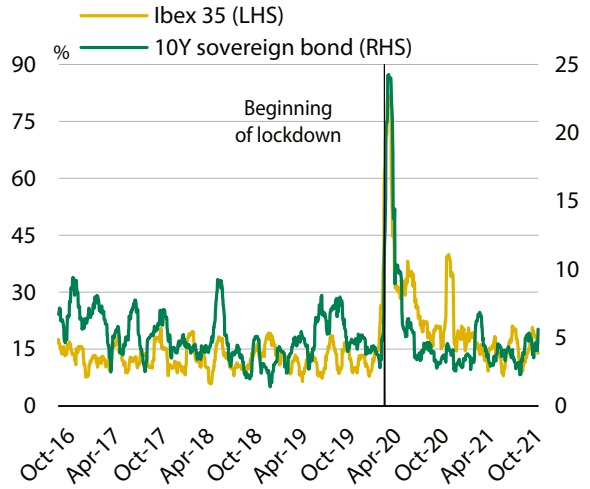


Figure 17. SIBE trading (1-month moving average)

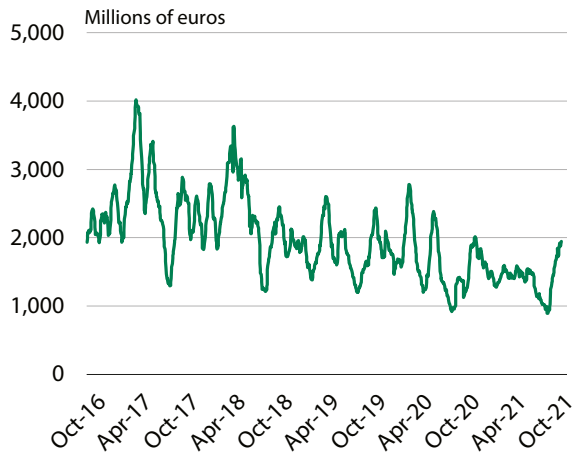


Figure 18. Interbank spread (LIBOR-OIS)

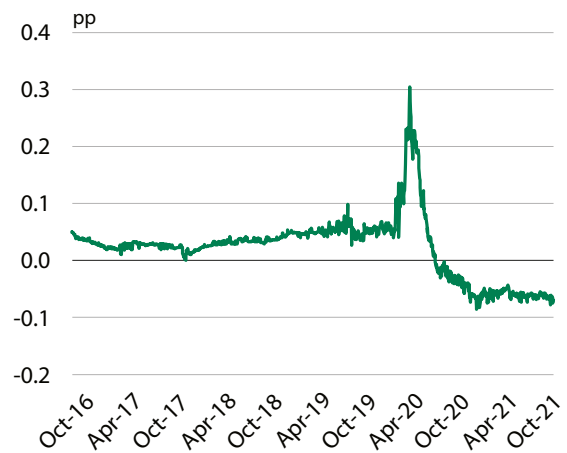


Figure 19. Spread (Spain-EMU) on corporate lending rates

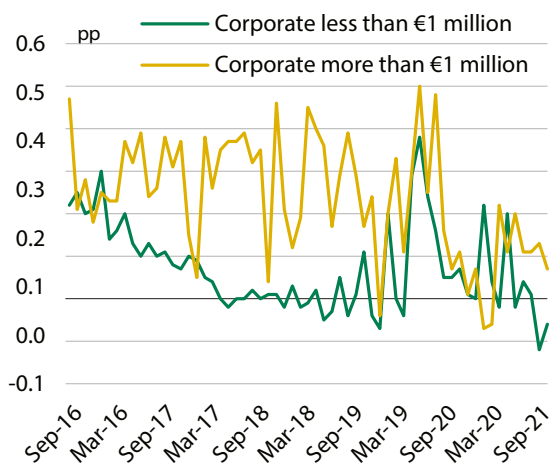
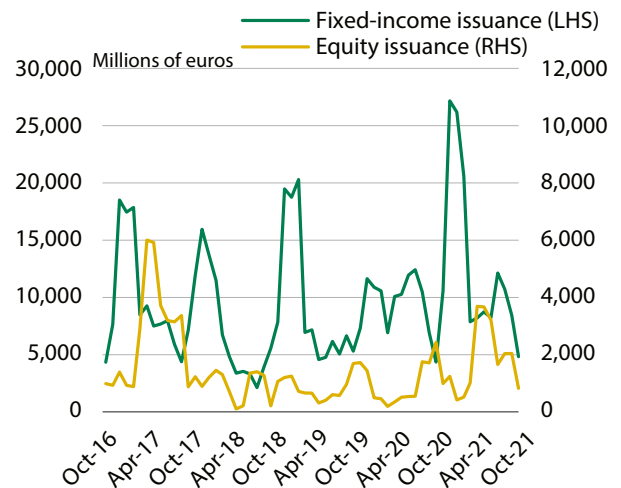


Figure 20. Issues (3-month moving average)





## Macroeconomic risk: orange

Figure 21. GDP (year-on-year change)

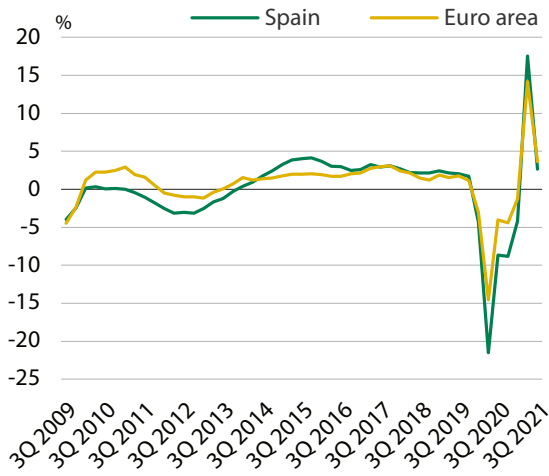


Figure 22. HCPI and core CPI (year-on-year change)

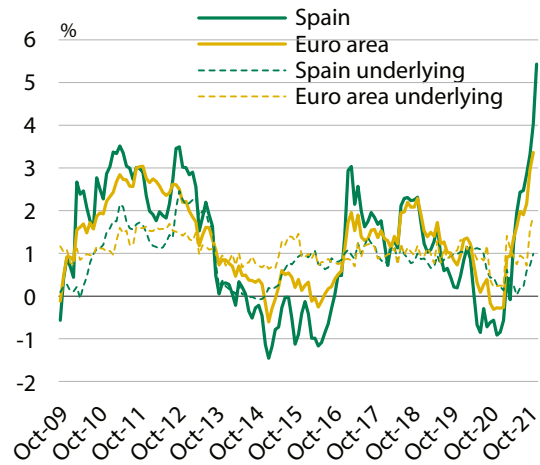


Figure 23. Employment (year-on-year change)

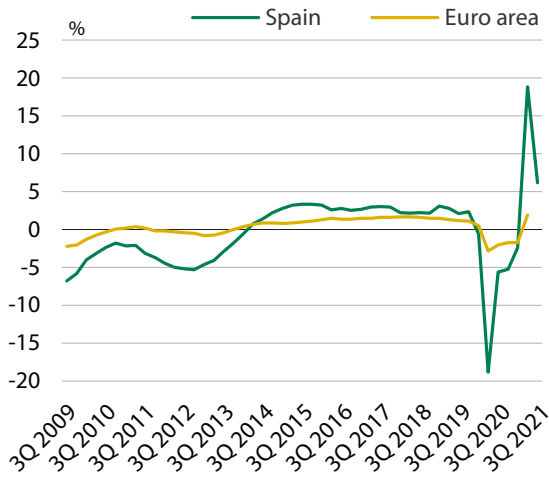
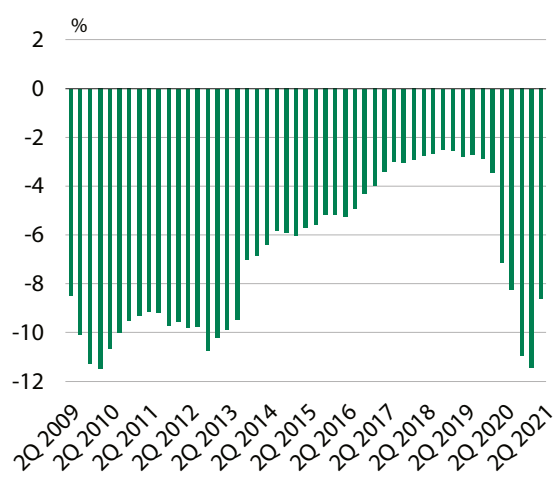


Figure 24. Public deficit (% GDP)



Cumulative data for four quarters.

Figure 25. Exchange rates

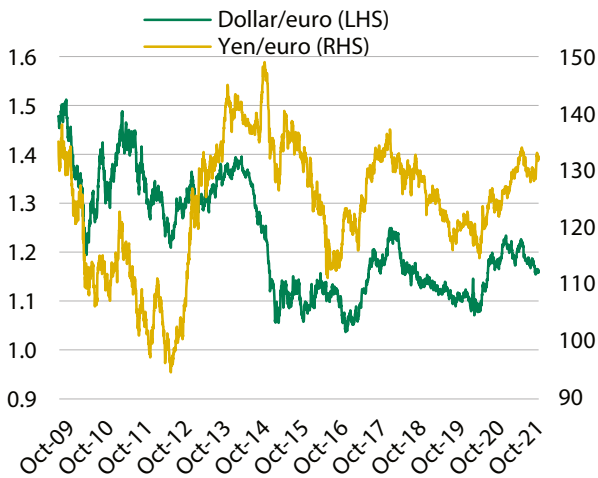
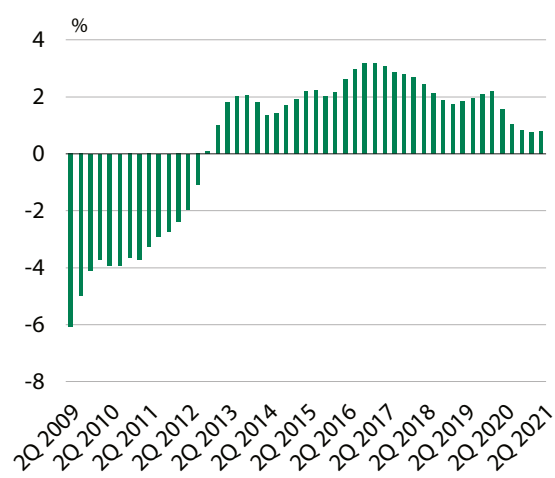
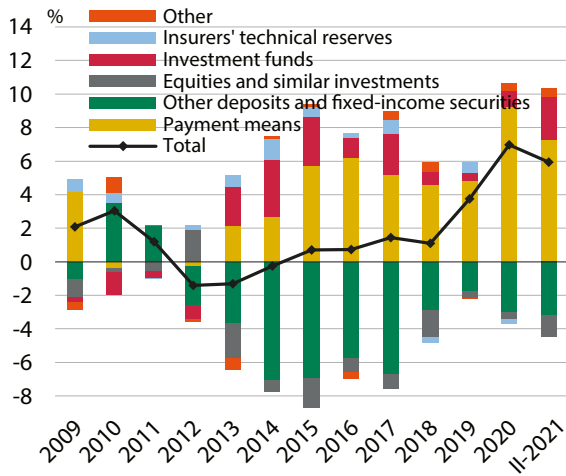


Figure 26. Current account balance (% GDP)



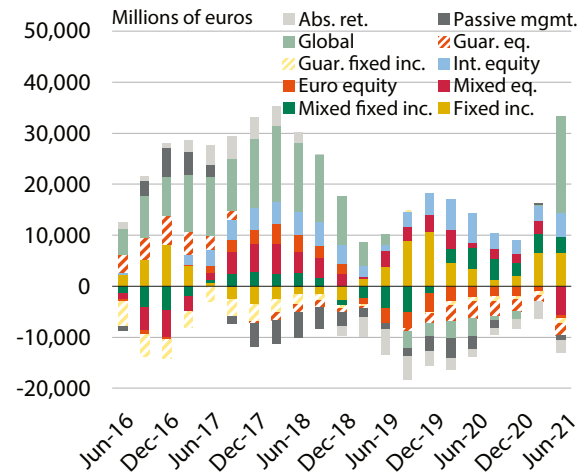
## Investors

**Figure 27. Households: net acquisition of financial assets (% GDP)**



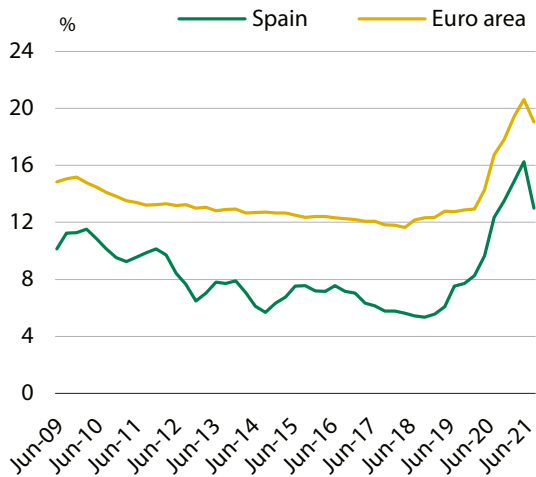
Cumulative data for four quarters.

**Figure 28. Net subscriptions to investment funds**

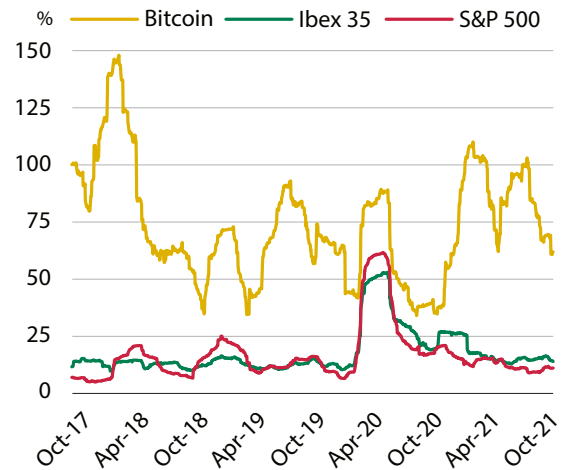


Cumulative data for four quarters (millions of euros).

**Figure 29. Households: savings (% disposable income)**

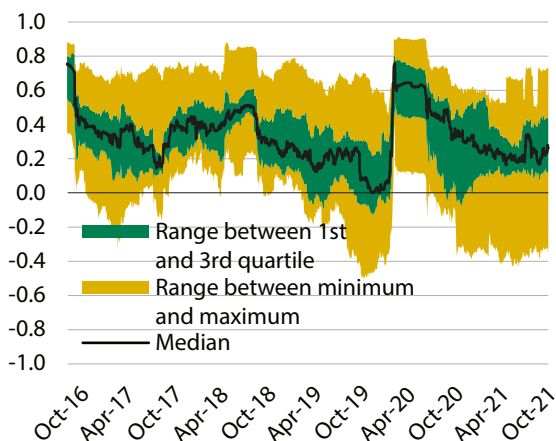


**Figure 30. Bitcoin volatility**

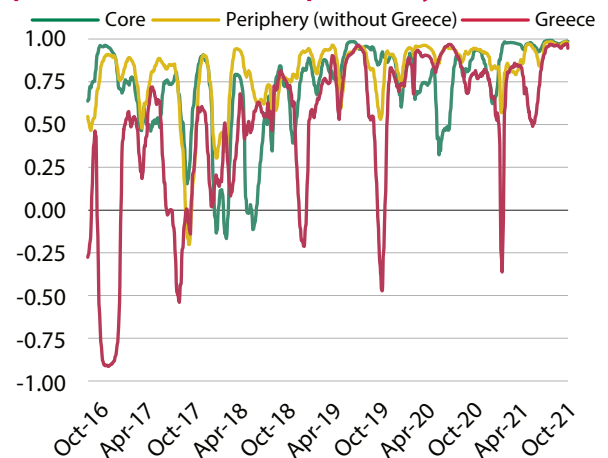


## Risk of contagion: orange

**Figure 31. Correlations among asset classes**



**Figure 32. Correlation between the yield on Spanish and other European 10-year bonds**



# Heat map: Risk categories

INDICATOR	Reference intervals <sup>1</sup>	2015					2016					2017					2018					2019					2020					2021																		
		o	n	d	j	f	m	a	m	j	j	a	s	o	n	d	j	f	m	a	m	j	j	a	s	o	n	d	j	f	m	a	m	j	j	a	s	o	n	d	j	f	m	a	m	j	j	a	s	o
<b>MACROECONOMIC RISK</b>																																																		
GDP (% a.c.)	fixed_1t	[Color-coded cells]																																																
Unemp. rate (% active population)	fixed_1t	[Color-coded cells]																																																
CPI (% a.c.)	fixed_2t	[Color-coded cells]																																																
Public deficit (% GDP)	fixed_1t	[Color-coded cells]																																																
Public debt (% GDP)	fixed_1t	[Color-coded cells]																																																
Competitiveness indicator	fixed_2t	[Color-coded cells]																																																
Economic sentiment index	fixed_1t	[Color-coded cells]																																																
<b>MARKET RISK</b>																																																		
Ibex 35	p_3Y_2t	[Color-coded cells]																																																
Medium Caps Index	p_3Y_2t	[Color-coded cells]																																																
Small Caps Index	p_3Y_2t	[Color-coded cells]																																																
FTSE Latibex All-Share Index	p_3Y_2t	[Color-coded cells]																																																
P/E ratio Ibex 35	p_h_2t	[Color-coded cells]																																																
ST interest rate 3m public debt (%)	p_3Y_2t	[Color-coded cells]																																																
Interest rates 3m commercial paper (%)	p_3Y_2t	[Color-coded cells]																																																
LT interest rate 10Y public debt	p_3Y_2t	[Color-coded cells]																																																
LT 10Y private fixed-income interest rate (%)	p_3Y_2t	[Color-coded cells]																																																
Steepness of 10Y-1Y curve (bp)	fixed_1t	[Color-coded cells]																																																
Oil price (US\$/barrel)	p_3Y_2t	[Color-coded cells]																																																
Gold price (US\$, 31/12/1969=100)	p_3Y_2t	[Color-coded cells]																																																
Risk aversion indicator	fixed_2t	[Color-coded cells]																																																
<b>CREDIT RISK</b>																																																		
Lending-households (% a.c.)	fixed_2t	[Color-coded cells]																																																
Lending-non-financial companies (% a.c.)	fixed_2t	[Color-coded cells]																																																
Property prices (% a.c.)	fixed_2t	[Color-coded cells]																																																
Risk premium sovereign debt bond (bp)	fixed_1t	[Color-coded cells]																																																
CDS sovereign debt bond (bp)	fixed_1t	[Color-coded cells]																																																
CDS non-financial sector (bp)	fixed_1t	[Color-coded cells]																																																
CDS financial sector (bp)	fixed_1t	[Color-coded cells]																																																
Changes standards credit supply (%)	fixed_2t	[Color-coded cells]																																																
Credit/deposits ratio	fixed_2t	[Color-coded cells]																																																
NPL ratio (%)	fixed_1t	[Color-coded cells]																																																
<b>LIQUIDITY, FINANCING AND FRAGMENTATION RISK</b>																																																		
Bid-ask spread Ibex 35 (%)	p_3Y_1t	[Color-coded cells]																																																
Volatility Ibex 35 (%)	p_3Y_1t	[Color-coded cells]																																																
Liquidity-LT public debt (%)	p_3Y_1t	[Color-coded cells]																																																
Trading SIBE (daily average, € m)	p_3Y_2t	[Color-coded cells]																																																
Interbank spread (LIBOR-OIS) 3m (bp)	p_3Y_1t	[Color-coded cells]																																																
Lending from the Eurosystem (€ m)	fixed_1t	[Color-coded cells]																																																
Spr. Int. Rt. Bus. Cred. Sp-EMU, < 1m (%)	fixed_1t	[Color-coded cells]																																																
Spr. Int. Rt. Bus. Cred. Sp-EMU, > 1m (%)	fixed_1t	[Color-coded cells]																																																
Volatility public debt price (%)	p_3Y_1t	[Color-coded cells]																																																
Gross fixed-income issues (€ m)	p_h_2t	[Color-coded cells]																																																
Equity issues (€ m)	p_h_2t	[Color-coded cells]																																																
Correlation int. rate 10Y public debt bond with Euro bonds: Germ, Fr, Hol, Bel	corr_3m_2t	[Color-coded cells]																																																
with Euro bonds: It, Por, Gre, Ire	corr_3m_2t	[Color-coded cells]																																																

Source: CNMV, Bloomberg and Refinitiv Datastream.

1 Reference intervals could be: i) "fixed": predetermined numerical thresholds, one (1t) or two-tailed (2t); ii) "corr\_3m": 3 months windows correlation coefficients; iii) "p\_3A": percentiles obtained from 3 past years distribution, one (1t) or two-tailed (2t), or iv) "p\_h": percentiles obtained from historical distribution.

## Explanatory Notes

**Spanish financial markets stress index (Figure 1):** The stress index provides a measurement in real time of the systemic risk facing the Spanish financial system, ranging from between zero and one. To this end, stress is evaluated in six segments of the financial system (equities, fixed income, financial intermediaries, the money market, derivatives, and the exchange markets) which are then aggregated to obtain a single figure. The stress for each segment is evaluated by means of cumulative distribution functions and the subsequent aggregation takes into account the correlation between segments, in such a way that the index places greater emphasis on stress situations in which correlations are very high. In general terms, the stress variables chosen for each segment (three for each one) correspond to volatilities, risk premiums, liquidity indicators, and sudden loss of value. These variables are good indicators of the presence of stress in the markets. Econometric estimates indicate that index values below 0.27 correspond to periods of low stress in the financial system, while scores between 0.27 and 0.49 correspond to periods of medium stress, and values above 0.49 indicate periods of high stress. The methodology of this index follows the work of Holló, Kremer and Lo Duca in 2012 to propose a similar index for the euro area. For further details on recent movements in this index and its components, see the CNMV's statistical series "Market stress indicators", available at <http://www.cnmv.es/portal/Menu/Publicaciones-Estadisticas-Investigacion.aspx>. For further information on the methodology of this index, see Cambón, M.I. and Estévez, L. (2016). "A Spanish Financial Market Stress Index (FMSI)". *Spanish Review of Financial Economics*, Vol. 14, No. 1 pp. 23-41 or as CNMV Working Paper No. 60 available at: [http://www.cnmv.es/DocPortal/Publicaciones/MONOGRAFIAS/Monografia\\_60\\_en.pdf](http://www.cnmv.es/DocPortal/Publicaciones/MONOGRAFIAS/Monografia_60_en.pdf).

**Heat map: summary by market and risk category (Figure 2 and final annex).** The heat maps provided in this release show the monthly trend of the most important indicators in the Spanish financial system in recent years. They contain information on domestic securities markets, the banking sector, and also some macro-economic variables. The main purpose behind the production of these maps is to provide an idea of the position of the reference indicators in relation to their recent history (in most cases three years) or with some predetermined limits, by associating this position with a certain colour. When an indicator changes from green to a warmer colour (orange or red), it does not necessarily mean the existence of risk; rather it indicates a movement towards an extreme value (very high or very low) in the period or range of values used as a reference. If an indicator remains at extreme values for a prolonged period, it may suggest the need for a more detailed analysis; that is to say, it may be interpreted as an alarm signal. The most comprehensive heat map includes 43 indicators,<sup>82</sup> five of which are prepared by the CNMV. The large number of indicators taken into consideration allows us to make an analysis of vulnerabilities for each segment of the financial markets (equity income, fixed income, banking sector, etc.) or for different risk categories (macro, market, liquidity, credit, etc.), as illustrated in Figure 2. The colours of these aggregates (markets or risk categories) are assigned by calculating a weighted average of the values of the individual indicators they comprise. In each aggregate, one of the individual indicators determines the generation of the overall colour: for example, in macro-economic risk, the indicator used to calculate the aggregate is GDP. This means that until this is published, the macro-economic risk block is not given any colour in the map. For more detail on the methodology and analysis of these maps, see Cambón, M.I. (2015). "Identification of vulnerabilities in the Spanish financial system: an application of heat maps". *CNMV Bulletin*, Quarter I, pp. 109-121.

---

<sup>82</sup> Since June 2017, the heat map has included an additional indicator: the bid-ask spread of the 10-year sovereign debt bond.

**Bitcoin historical volatility (Figure 30):** Annualised standard deviation of daily price variations in 90-day windows.

**Risk of contagion:** The indicators that make up this block are of somewhat higher complexity. We set out the most important of these indicators below:

- **Correlation between assets (Figure 31).** The correlation pairs are calculated using daily data in three-month windows. There are six asset classes: sovereign debt, private fixed income from financial institutions, fixed income from non-financial firms and Ibx 35 securities, financial companies, utilities and other sectors. A high correlation between the different classes of Spanish assets would indicate the possible existence of herding behaviour by investors. This situation could lead to high volatility in periods of stress. Meanwhile, diversification would offer fewer advantages since in this context it would be more difficult to avoid exposure to sources of systemic risk.
- **Correlation between the yield on the Spanish and other European 10-year bonds (Figure 32).** The correlation is calculated using daily data in three-month windows. The countries of the core group are Germany, France, the Netherlands and Belgium and the peripheral countries are Portugal, Italy, Greece and Ireland.