Financial Stability Note

No. 13 January 2020

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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, identifies changes in the level of different financial risks and identifies the major sources of risk.

The CNMV distributes its reports and publications via the Internet at www.cnmv.es

ISSN (digital edition): 25030-7827

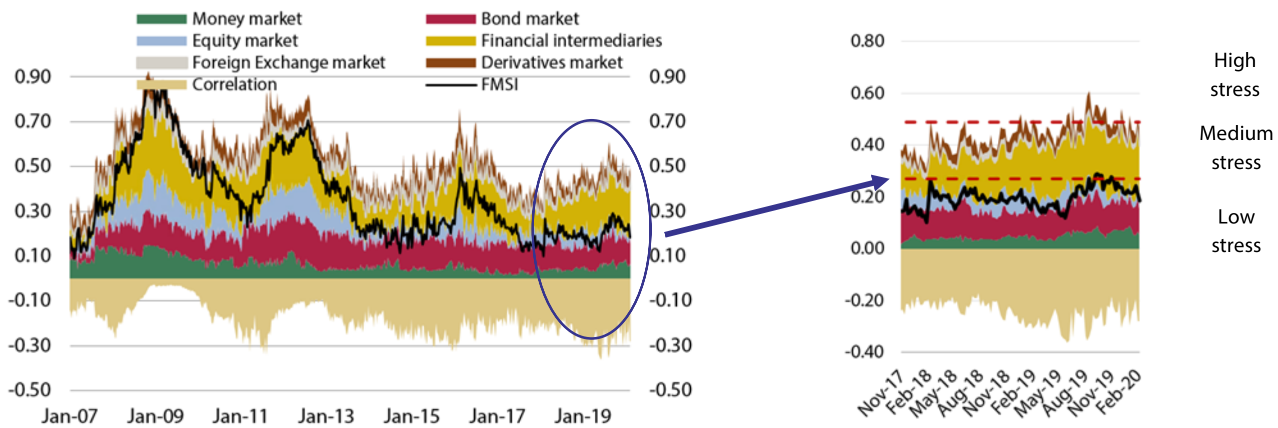
Layout: National Securities Market Commission

Summary

- ✓ Since the last financial stability note published at the end of October, in which we reported the Spanish financial markets stress indicator was hovering around the threshold between the low level and medium level of stress (0.27), this indicator has now declined and stands at 0.18[1] at the date of this report. Within this trend, the slight surge in stress at the end of January stands out, which probably reflected an increase in uncertainty related to the coronavirus discovered in the Chinese city of Wuhan. This also impacted other financial markets but did not cause a change in the trend marked by the indicator. As in previous quarters, the highest levels of stress were recorded in the financial intermediaries and debt segments, and there were short-lived upticks in other less important segments. The correlation of stress levels between the different components of the indicator remains low in historical terms.

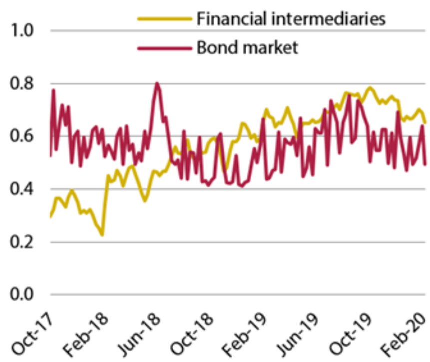
Stress indicator of the Spanish financial markets

FIGURE 1



Total stress index

Index of stress in the financial Intermediaries and bonds segments



Source: CNMV. For more detail on the recent evolution of 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 Document No. 60 available at http://www.cnmv.es/DocPortal/Publicaciones/MONOGRAFIAS/Monografia_60_en.pdf.

[1] The closing date of this note is 31 January, except for the stress indicator which includes information to 7 February and some other specific figures.

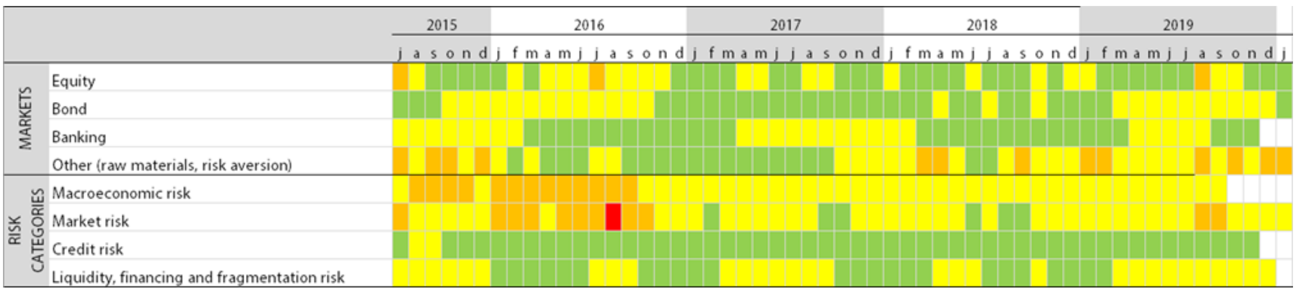
- ✓ The Spanish macroeconomic context is still characterised by a slowdown in activity that is also affecting the pace of job creation (GDP grew by 2% in 2019, 0.40 percentage points [pp] less than in 2018). The slowdown will continue this year and will be more intense than in the euro area as a whole, where expectations have improved in countries such as Germany and Italy. Therefore, the growth differential will be reduced to 0.30 pp. The formation of a government in Spain at the beginning of the year has mitigated some sources of uncertainty, but others persist, such as high unemployment levels, the challenges posed by an ageing population, the inability of the banking sector to improve margins or the existence of highly financially vulnerable sectors and agents.

- ✓ Spanish financial markets saw quoted prices for shares and yields on debt assets rise at the end of last year. Quoted prices were generally lower than those of other European indices and their performance was uneven both between and within sectors. Cyclical and energy-related stocks showed the strongest gains and real estate companies and some, but not all, banking institutions reported the largest losses. Yields on debt assets, which had fallen for most of the year as the new monetary policy direction emerged, increased in the final months on the back of improved expectations for European activity and the easing of some uncertainties. The first weeks of the current year were marked by uncertainty surrounding the coronavirus outbreak, which resulted in stock market losses of close to 2% in January (these were completely reversed in the first days of February) and in the yields of the long-term debt assets.

- ✓ In terms of major financial risks, market and liquidity risk continue to stand out, particularly in regard to debt assets. However, other risks that could affect financial stability, such as cybersecurity risk, should also be taken into account. Market and liquidity risk are especially significant for riskier assets, as their risk premiums would rise further in the event of increased uncertainty or a notable deterioration in economic activity. In addition, agents with the highest levels of indebtedness and the greatest exposures to low liquidity complex assets with longer durations would be the most seriously affected.

Heat map: summary by markets and risk categories[1]

FIGURE 2



Source: CNMV. See article Cambón, M.I. (2015). "Identification of vulnerabilities in the Spanish financial system: an application of heat maps". *CNMV Quarterly Bulletin,* Quarter I, pp. 109-121.
Data until 31 January.

Sources of risk

Macroeconomic environment

- According to the latest forecasts for the Spanish economy, GDP grew by 2.0% in 2019 after a slight surge in the final quarter (0.5% vs. 0.4% in the previous quarter). However, this figure confirms the slowdown of the economy as it is four tenths of a point below the growth rate for the previous year (and one tenth of a point below the government's forecast). Household consumption, which had been a major growth driver in recent years, stagnated between October and December, in contrast to exports, which grew 1.5% in the quarter. Even so, this performance remains substantially higher than that of the euro area as whole, with a growth of 1.2% in 2019 – in the fourth quarter the variation was 0.1% compared to the previous quarter (Figure 21). Employment is also feeling the effect of the slowdown. While just over 400,000 jobs were created in 2019 and the unemployment rate was below 14% (at 13.8%),[2] the increase in the number of employed persons was the lowest since the start of the recovery in 2014, and the reduction in unemployment was the lowest since 2012. Preliminary data for the labour market in 2020 reflect a drop of 244,000 in the number of employees[3] and an increase in the number of registered unemployed of just over 90,000.

- The advanced inflation indicator for January appears to confirm its upward trend, moving from a low of around zero in October to 1.1% year-on-year (0.8% in December). This main cause of this increase is the rise in electricity and food and beverage prices. Based on data to December 2019, core inflation, which excludes the most volatile components (energy and fresh food), held stable at 1.0% from September (Figure 22). Regarding the differential with the euro area as a whole (in terms of harmonised CPI), the data reflect that Spanish inflation is lower than average, with a difference of around 0.50 pp since mid-2019.

- The latest data for public sector finances indicate that until November the registered deficit was slightly higher than in the same period of 2018: 1.66% of GDP versus 1.46% in the previous year.[4] Despite this increase, the central government deficit was reduced from 1.0% of GDP to 0.96%, while the autonomous regional governments went from a 0.1% surplus to a deficit of 0.25%. The social security system, meanwhile, saw its deficit decrease by 17% year-on-year to 0.45% of GDP. Public debt stood at 97.9% of GDP at the end of September, representing an increase of 0.3 pp relative to the year-end 2018 figure. Forecasts of reference institutions and bodies indicate that the public deficit would have been between 2.4%[5] and 2.5% of GDP[6] at the end of 2019.

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[2] Data from the EPA (Labour Force Survey).
[3] Affiliation to Social Security.
[4] These figures are for the combined deficit of the central government, the autonomous regional governments and the social security system. Therefore, this figure does not include the balance of local authorities or the amount of the aid to financial institutions, which is increasingly lower (5 million euros in the first eleven months of the year).
[5] Funcas.
[6] Bank of Spain.

- According to IMF forecasts published in January, global growth would have been at 2.9% in 2019, after a downward correction of 0.10 pp from the previous estimate made in the month of October. For this year and the next one, this institution expects world GDP to increase 3.3% and 3.4%, respectively, reducing its forecasts by 0.10 and 0.20 pp respectively. This downward correction for activity is mainly a consequence of the worse-than-expected evolution of some emerging economies, particularly India. In this context, forecasts for the Spanish economy have also been corrected slightly downwards, with expected growth of 1.6% in 2020 and 2021, 0.20 and 0.10 pp[7] less than the forecasts made three months ago, respectively.[8] This implies that Spanish GDP will grow at a higher rate this year than the euro area as a whole (1.3%), although the differential between the two economies will reduce (from 0.80 pp to 0.30 pp) due to the pick up in activity in economies such as Germany or Italy, which showed greater weakness in 2019.

- In spite of the good relative performance of the Spanish economy compared with surrounding countries, some major challenges that could undermine growth in activity in both the short and medium term still remain present. In the short term, it should be stressed that a significant slowdown in activity is already underway, caused mainly by the fall in domestic demand, and which is expected to be accompanied by weaker exports. The persistence of internal uncertainties is projected to have a significant effect in the coming quarters, coupled with external uncertainties deriving from the potential economic impact of the coronavirus outbreak, which is currently difficult to quantify. In the medium and long term there are still some factors of concern, such as the high unemployment rate, the ageing population and the continued high levels of indebtedness in some sectors,[9] which could be exacerbated if there is any further deterioration in activity or renewed instability in the financial markets.

[7] In October, Spanish GDP had already been revised downwards by 0.10 pp.

[8] These forecasts are in line with those made by other agencies. For example, the growth forecast published by Funcas for 2020 is the same, while the Bank of Spain has estimated that GDP will grow by 1.7% (both figures calculated in January). Meanwhile, the European Commission, in its latest forecast in November last year, estimated growth in activity of 1.4%.

[9] The indebtedness of households and non-financial companies amounted to 57.4% and 95.0% of GDP in September 2019.

Context of low interest rates

- The euro area monetary policy changed direction in 2019, in a context marked by the slowdown in economic activity and low levels of inflation. What began with expectations of possible interest rate rises ended with the announcement in the middle of the year of fresh expansive measures, which were implemented throughout the third quarter (reduction of the rate on the deposit facility to -0.50%, the beginning of the third round of financing for banks – TLTRO-III -, and the extension of the term of these operations from 2 to 3 years) and, in October, the resumption of net purchases of debt amounting to 20,000 million euros per month. All these measures put interest rates at historical lows and negative values were registered in most segments of the curve. In the last quarter of last year and the first few weeks of 2020, most of these circumstances are unchanged, although expectations for the economic performance of euro area as a whole have improved. Therefore, the ECB has indicated that it will not implement any further monetary policy measures for the time being, and a strategic review of its current policy will be considered.[10] In the USA, the Federal Reserve implemented three successive rate reductions between July and October[11] and it is not in favour of any further measures for the time being, considering that the current policy is appropriate to support the expansion of economic activity.[12]

- In this environment, some risks that have already been described in previous notes are maintained or even exacerbated: i) increased incentives for agents to borrow in a context of economic slowdown; ii) persistence of search-for-yield strategies, which accentuates the demand for and overvaluation of assets with higher yield expectations but which tend to be more volatile (emerging markets), have worse credit ratings (high yield debt) and are less liquid (private equity funds), and iii) the inability of the banking sector to improve its margins and, consequently, its profitability, which is an incentive to assume greater risks in search of a superior returns.

- The difficulties experienced by the banking sector to carry out its activities were reflected in fourth quarter earnings released by the main financial institutions, which saw a decline in profits, lower financial margins, lower extraordinary income and higher provisions. Sector margins are still weighed down by the aforementioned interest rate scenario (lower for longer) and rising regulatory costs. Although all institutions are making significant efforts to reduce costs, this process could continue due to the decrease in profitability in the sector, where the most profitable segments are also under pressure from potential competition from BigTech. These companies have a strong starting position as they have broad customer bases, advanced technology and a low cost of capital. Banks are also facing

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[10] The President of the ECB, Christine Lagarde, expressed concern about the environment of low interest rates, noting that the Central Bank will keep a careful watch on any side effects it may cause.

[11] The Federal Reserve made three successive rate cuts between July and October, putting them in a range of 1.5-1.75%.

[12] In December 2019 and January 2020, Fed officials were in favour of keeping interest rates stable, stating that "the current stance of monetary policy is appropriate to support the expansion of economic activity, strong labour market conditions and inflation returning the 2% objective". It should also be noted that the US general election will take place in November 2020 and the Federal Reserve does not usually make decisions on rates at such times in order to maintain its independence and neutrality.

legal uncertainties, and uncertainties arising from the economic slowdown, which could have an impact on delinquency for the riskiest assets, such as consumer loans, and on the most indebted clients. It should also be noted that very low interest rates reduce the financial burden of indebted agents, which implies a drop in delinquency levels.

- In regard to the financial decisions of households, information from Financial Accounts for the third quarter of 2019 show a prolongation of the trends observed since the beginning of the year after the loss of value experienced by stock markets at the end of 2018, which was characterised by increased investment in more conservative assets compared to past years. In this context, we have seen an increase in the household savings rate (which stood at 7.0% of disposable income in the third quarter, compared to 5.6% in 2018 and 2017) and in the volume of investment in financial assets, especially in those with lower risk. Therefore, households' net acquisition of financial assets in the third quarter of this year (with cumulative data for four quarters) stood at 4.3% of GDP, the highest figure since 2007 (Figure 27). The breakdown of investment by type of asset reveals that some of the trends seen in previous years were maintained, such as the divestment of term deposits and fixed income securities (-1.6% of GDP) and the significant acquisition of means of payment[13] (4.7% of GDP). However, there were developments that could confirm the more conservative nature of the portfolio. For instance, investment funds recorded net withdrawals, breaking the strong growth trend that began in 2013, while technical insurance reserves received the highest net inflow of funds since 2006 (1.9% of GDP).

- In the case of investment funds, withdrawals were concentrated in high risk vehicles – such as euro equity funds or global funds[14] – or medium risk vehicles – such as mixed fixed income funds. In contrast, fixed income funds, despite their near-zero returns, saw net subscriptions of around 10 billion euros in the first nine months of 2019, explained by the increased risk aversion of investors in a context of slowing activity and volatility spikes in the financial markets.

[13] Cash and sight deposits.
[14] In these two categories, net withdrawals between January and September stood at around 3 billion euros, while in both 2017 and 2018 there were positive net subscriptions, especially in global funds (more than 20 billion euros over the two years).

Sources of political uncertainty

- For about two years, the trade war between the USA and China has been one of the greatest uncertainties weighing on the world economy. While certain tariffs established last year are still in force, the two countries cancelled the tariff increase they had planned for December, and in January an important step was taken to bring these trade disputes to an end. In the middle of the month, the first phase of the trade agreement between the two powers was signed at the White House and negotiations are expected to begin immediately ahead of the signing of a second phase (which are likely to continue until after the US presidential elections). Under the first phase of the agreement some of the tariffs already established will be cut, and there will be a freeze on new tariffs. The USA will exclude China from its official list of governments considered to be currency manipulators, to which it was added in August 2019. China has agreed to increase its purchases of US products (mainly from the agricultural, manufacturing and energy sectors), undertake certain reforms to open its financial system to foreign companies and to be more rigorous in the area of intellectual property protection. Although the signing of the first phase of this agreement sends a message of cooperation between the two economies, which reduces trade restrictions and gives confidence to the international markets, it remains to be seen how negotiations will develop in the second phase of the trade agreement to reduce uncertainty even further.

- In the European framework, trade tensions between the European Union (EU) and the USA remain one of the main sources of political risk in the economic scenario. In October last year, the World Trade Organization (WTO) issued a decision empowering the USA to impose tariffs on subsidies granted in the past to Airbus, which entered into force in the middle of the same month and affected a variety of EU exports (Spain is one of the countries affected by these tariffs). Additionally, at the World Economic Forum in Davos held at the end of January, the USA warned both the EU and the United Kingdom that it would impose further tariffs – in this case on the automobile sector – if a trade agreement is not reached and if the technology tax (known as the Google tax) is implemented. In this context, the possibility of further tariffs or an increase in these tariffs between the USA and the EU (probably in both directions) is seen as a significant source of risk for the financial situation and growth of both economies.

- On 31 January, the United Kingdom (UK) left the EU almost three and a half years after the referendum and the triggering of Article 50 of the Treaty on European Union. Although the main source of risk surrounding Brexit was always the possibility that the UK would exit the union without a deal, and that has not happened, the future relationship between the EU and the UK continues to fuel uncertainty. The temporary agreement covers protection of the rights of British residents in EU countries and vice versa, the commitments made by the UK as a Member State and issues related to borders, but the future relationship between the two territories will be the subject of a new treaty. This treaty must cover multiple aspects and one of the key points is the future trade agreement, the tariffs to be applied and manner in which potential conflicts in this area will be resolved. In accordance with the provisions of the EU Withdrawal Agreement, a transition period is established until 31 December 2020, during which the UK will have access to the single market and will be subject to EU legislation. Therefore, the aim is to draw up a treaty that defines the key points of the future relationship between the UK and the EU before the end of the year[15]. Negotiations will begin at the end of February and there is a possibility that the transition period will create turbulence in the financial markets that will affect the real economy[16]. If a trade agreement is not reached at the end of the transition period, the UK could see a disorderly exit and end up trading with the EU under WTO rules.

- At a national level, some sources of uncertainty have disappeared, but others remain. The formation of a coalition government at the beginning of this year stands out in the respect, as it reduces doubt about economic decisions in the coming months. However, the risk associated with the high level of parliamentary fragmentation persist, which may delay or prevent the implementation of some measures, as well as political instability in Catalonia, where there will likely be an early election.

Other sources of uncertainty

- Another recent source of uncertainty, which is already having some impact on the financial markets, is the coronavirus outbreak, which emerged in late December 2019 in the Chinese city of Wuhan. The repercussions for the Asian economy and, consequently, for global growth are uncertain, but may be significant, in view of the restrictions on activity in certain sectors and regions: companies from all sectors have temporarily closed their offices in China, factory activity in the most affected areas has been halted, several tourist attractions have not opened after confirmation of the outbreak and many airlines have suspended flights to China until the spread of the disease has peaked and the widespread fear has subsided. This source of uncertainty has already had a certain impact on the financial markets, especially those in Asia. The Chinese Shanghai Composite index opened on Monday, 3 February, after closing for the Chinese New Year, with a loss of nearly 8% (the biggest drop in more than 4 years). In other international exchanges, index losses at the end of January were around 2%, in a flight to quality that boosted purchases of debt assets of economies seen as more solid. In early February[17], quoted prices for shares recovered in full in most of the advanced economies and in part in the emerging Asian markets, except for China, where losses increased. In this context, episodes of financial market turbulence cannot be ruled out, the probability of which depends on how the outbreak of the virus unfolds as well as its containment process.

[15] Negotiations on the future treaty must be concluded by around November, as the agreement will need to be ratified in Parliament. There is the possibility of extending the transition period, although this can only be done if requested before 1 July 2020, which seems unlikely in view of the statements issued by the British government.

[16] In Spain, the CNMV has opened a new section on its website called "After Brexit", which includes information that may be useful to market participants and investors.

[17] Until the 13th.

- The risks of cyberattacks that affect the financial system are increasing, since the interconnection of all sectors can turn a cybersecurity incident into a threat to financial stability and prompt a breakdown in confidence in that system. Therefore, something that starts off as the materialisation of an operational risk could become a systemic crisis in certain circumstances. Currently, there are numerous initiatives from different areas − public and private − seeking to assess this risk, increase institutional resilience and where necessary identify the most effective mitigating factors and the most appropriate coordination mechanisms among institutions.

Risk categories

Market risk: yellow

- The international equity markets performed well in the latter part of last year, thanks to the monetary stimuli measures implemented by the ECB[18] and the successive rate cuts made by the Federal Reserve, in addition to the mitigation of several uncertainties, including the signature in mid-December of the first phase of the trade pact between the USA and China. This put an end to the trade disputes between the two economies, which had been an ongoing cause of market instability. The resolution of the Brexit scenario also stands out (which has been a source of uncertainty since 2016), in addition to the moderation of the economic slowdown in the euro area, accompanied by an improved outlook. In this context, the equity markets reported significant gains at the year end, which extended in to the first few weeks of 2020 and led the main US and European indices to reach historical or recent-year highs. This trend was broken by the outbreak and spread of the coronavirus. This triggered fear and uncertainty in the international financial markets, which eventually ended January with losses[19], due to the potential effect of this event on the economy, consumption and global growth.[20] Quoted prices of shares recovered in early February, offsetting these losses in most of the cases.[21]
- The main stock market indices showed outstanding gains throughout 2019, which were especially significant in the US markets and the largest euro area economies. In the USA, index gains ranged between 22.3% for the Dow Jones and 35.2% for the Nasdaq, and all of them hit historical highs in January this year. In the case of the Nasdaq technology index, also at a historical high, professional investors and analysts continue to warn of the overvaluation of some technology companies,[22] in an environment of slowing global economic growth and consumption, which could be affected by the Chinese coronavirus. In Europe, with the exception of the Spanish and British indices, gains were similar, ranging between 24.8% for the Eurostoxx 50 and 28.3% for the Italian Mib 30,[23] which allowed them to offset the losses of 2018 and accumulate outstanding gains. Thus, despite the economic slowdown in the euro area and the impact of trade restrictions on exporting companies, European securities performed well, especially in the latter part of the year, on the back of long-term interest rates at historical lows – which favours valuations and the appeal of dividend yields – in addition to the decrease in risk premiums. Technology firms fared best, in addition to companies in growth

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[18] The ECB initiated a third round of bank financing (TLTRO-III), extending its term from 2 to 3 years, at the same time as it began net purchases of debt in secondary markets amounting to 20 billion euros a month on 1 November.

[19] The US Dow Jones, S&P 500 and Nasdaq indices, as well as the German Dax 30 reached historical highs in January, while the French Cac 40 hit its highest level since 2007. However, the accumulated balance for that month was negative: Dow Jones (-1%), S & P500 (-0.2%), Eurostoxx 50 (-2.8%), Dax 30 (-2%), Cac 40 (-2.9%) and Mib 30 (-1.1%).

[20] The price of oil fell 12% in January and the commodity is trading at its lowest level in the past year on fears of a slowdown in industrial activity and transport. A similar precedent was the bird flu (SARS) outbreak in 2003, which led to 1.1% being wiped off GDP in China and 2.5% in Hong Kong.

[21] All equity indices in advanced economies show gains until 13 February (except the UK FT 100 index and the Japanese Topix), ranging between 0.7% for the Nikkei 225 and 8.2% for the American Nasdaq. In Europe, increases range from 1.9% to 5.9% (Ibex 35: 3.8%).

[22] In 2019, the shares of the main US technology companies – known as the FAANG (Facebook, Apple, Amazon, Netflix and Google) – accumulated gains of 59%, 90%, 25%, 23% and 30%, respectively, with a performance of -0.3%, 7%, 10%, 8% and 8%, respectively, in January 2020.

[23] The German Dax 30 and the French Cac 40 index advanced by 25.5% and 26.4%, respectively, in the year, while the British FTSE gained 12.1%.

sectors, as well as industrial companies that export their products, which benefited from the easing of trade tensions.

- In Spain, the Ibex 35 ended 2019 with an advance of 11.8%, with significantly lower gains (around half) compared to the main European market indices.[24] It marked a worse performance in all quarters and gains were insufficient to compensate for the 15% loss seen in 2018. In January, it registered a 1.9% decline, in line with other European markets due to fears over the impact of the coronavirus on the world economy, which was fully offset in early February when significant gains were made (see footnote on page 21). The worse relative performance of the Spanish index with respect to its European counterparts in 2019 could be largely explained by the different composition of the Spanish index compared to these peers – where technology companies and growth sectors are more represented – but it could also be associated with political uncertainties.
- Sector performance was uneven in terms of both sectors and securities. Although all sectors started the year with gains, only some were able to increase and consolidate those gains (especially the more cyclical sectors, and oil and energy) while for the financial and real estate sectors they turned into losses. The greatest advances were seen in the consumer goods sectors (where Inditex, pharmaceutical companies and biotechnology companies stood out), construction, technology and electricity (all of which reported gains of more than 20%), while the biggest losers were the real estate sector on investor fears over a potential change in the market cycle. Small and mid cap companies, which in previous years had attracted the interest of investors, showed a modest performance. The former on fears of a slowdown in the Spanish economy and the latter due to the slowdown of the euro area because of its greater export activity. Larger companies did not perform equally, even within the same sector.[25] The biggest gains were made by firms in the electricity and energy sector, which have benefited from the environment of reduced interest rates and stable income flows;[26] companies in the technology and telecommunications sector advanced as a whole, although traditional operators were held back by the maturity of their businesses. Lastly, as indicated above, banks showed overall declines during the year, since their margins and results are still being penalised by the lax monetary policy, in a context of economic slowdown and other uncertainties,[27] in addition to the risks associated with sustainability and climate change, which are becoming increasingly important for this sector,[28] although not all banks ended the year with losses.
- The increase in quoted prices, which was accompanied by a progressive slowdown in the growth of expected corporate earnings for the coming months, triggered an increase

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[24] In 2019, the main European stock indices showed an annual increase that was substantially higher than that of the Ibex 35: Eurostoxx 50 (24.8%), Dax 30 (25.5%), Cac 40 (26.4%) and Mib 30 (28.3%).

[25] Among the large Spanish companies, the advances made by Inditex (40.7%), Iberdrola (36.8%), Amadeus IT (19.7%) and BBVA (7.5%) stand out, in addition to the losses recorded by Telefónica (15.2%) and Banco Santander (6.1%).

[26] The National Commission of Markets and Competition (CNMC) has recently introduced changes in regard to regulatory income.

[27] The legal risks relating to the ruling of the Court of Justice of the European Union on Spain's mortgage interest rate index, known as the IRPH and potential litigation remain in place.

[28] Banking regulators have highlighted the need to include the risks associated with climate change and sustainability in the analyses carried out by financial institutions.

in the price-to-earnings ratio (PER) of the Ibex 35 from 11.3[29] in mid-October to 12.3 in mid-January (its historical average is 13.4); its highest level since the third quarter of 2018 (Figure 4).

- Public debt assets, where prices had risen since the summer after factoring in all ECB monetary easing measures – including the reactivation of public debt purchases in secondary markets[30] that put yields on most sovereign debt at all-time lows – marked a slightly better performance in the fourth quarter, although they remained close to historical lows.[31]

- The increase in yields in the fourth quarter is due to the ECB's confirmation that it will not, for the time being, take further additional monetary policy measures beyond those currently in force and will even consider a review of its current strategy.[32] The moderation of the slowdown and improvement of the growth outlook for the euro area have also contributed to this increase, in addition to expectations that the Federal Reserve will keep rates at current levels. These increases, which oscillated between 27 basis points (bp) in Portugal and 58 bp in Greece, were reversed from mid-January due to the uptick in uncertainty caused by the coronavirus outbreak (prompting decreases of between 8 and 40 bp vs. 2019 closing levels). The yield on the 10-year Spanish sovereign bond went from 0.48% at the end of December to 0.23% at the end of January. These variations are particularly relevant for agents with greater exposure to this asset class and longer terms, since they can lead to significant changes in the prices of these assets and, consequently, their volatility.

- Yields on corporate debt also rose slightly in the fourth quarter of 2019, as they had already factored in the effect of the ECB's new corporate debt purchase programme[33] from 1 November. In the future, the economic slowdown could affect companies' growth rates and financial health, which could place upward pressure on their credit risk premiums. This is more relevant for subordinated debt and high yield debt, where yields are currently at very low levels.

- The accommodative monetary policy rolled out by both the ECB and the Federal Reserve is holding market risk for debt assets at moderate levels (the risk is greater for higher-risk corporate debt and subordinated debt). However, economies with a higher fiscal imbalance and rates of indebtedness, and the most highly leveraged companies, show greater vulnerability, since any deterioration of the economic environment would easily be transferred to their risk premiums. Therefore, the increase in risk premiums could trigger falls in asset prices, which could be especially relevant for speculative or non-

[29] In the same period, the PER of the European stock index Eurostoxx 50 and the US S&P 500 advanced to 14.3 and 18.4, respectively. These levels are the highest since the end of 2017 and are above their historical averages (13.2 and 15.9, respectively).
[30] At January 2020, the ECB's debt purchase programme (APP) had assets amounting to 2.60 trillion euros, of which 2.11 trillion euros corresponded to public debt. In January, net purchases of public debt reached 12.4 billion euros. The volume of Spanish public debt on the ECB balance sheet amounted to 260,820 million euros in mid-December (28.4% of the balance of the long-term debt securities of the State).
[31] The scenario of interest rates at very low levels for years has raised issues related to the methodology used in the heat map that is updated quarterly and is currently under review. In this map, the allocation of colours for interest rates is based on the values of the last three years' series and, therefore, reflects a context of very low interest rates over a very long period, which may not be completely representative.
[32] The new President of the ECB, Christine Lagarde, announced in December that the strategic review of the ECB's monetary policy objectives and instruments would begin in January 2020 (the previous strategy dates from 2003).
[33] To the end of January, the corporate debt purchase programme accumulated assets amounting to 189.12 billion euros, of which more than 18% were acquired in the primary market.

investment grade debt, as well as for assets with longer durations,[34] since their valuations are extremely sensitive to any rise in interest rates. Although in the short term there are no significant increases in interest rates or risk premiums on the horizon, we should consider the effects that could derive from an eventual increase in interest rates – especially for higher risk assets, where risk premiums would increase the most – for the most indebted agents and those most exposed to low liquidity complex assets with longer durations – such as some fixed income investment funds.

Credit risk: green

- Sovereign risk premiums and risk premiums of Spanish private sector issuers declined gradually throughout the past year, favoured by the better relative performance of the Spanish economy compared to the rest of the large European economies. The greatest decreases were recorded from summer onwards, coinciding with the ECB's announcement and implementation of more expansive monetary policy measures, which put rates and risk premiums at historical lows. The sovereign risk premium remained relatively stable for most of the fourth quarter, ending 2019 at 66 bp, close to its annual low of 60 bp reached in July and more than 50 bp below the 2018 close (118 bp) (Figure 11). In January it remained stable and at date of this note stood at 67 bp.
- Risk premiums applied in the financial sector, which had accumulated significant declines in the first half of last year, registered more moderate decreases in the latter part of the year and ended December at an average of 72 bp (58 bp at the end of January). Despite the continued erosion of the interest margin as a result of the reduced interest rate environment, banks have been favoured by the launch of the third round of ECB financing,[35] which allows them to access financing at a reduced cost, while the low interest rate levels makes it easier to contain delinquencies. For non-financial corporations, the largest decreases also occurred in the first half of 2019, with minor changes observed in the rest of the year. The premium at the end of December stood at 52 bp (51 bp in January), its lowest level since the end of 2007. These companies continue to benefit from the renewal of the ECB's asset purchasing programme,[36] which helps keep financial costs low.
- Lending to non-financial sectors[37] of the economy continues to decrease due to the slowdown in credit extended to companies, which is insufficient to offset for the modest advance in household lending. Lending to households grew by 0.2% year-on-year in December, due to the pick-up in consumer credit (from 3.5% in September to 4.1% in

[34] An increase in interest rates of 100 bp would result in a drop of more than 9% in the price of a 10-year bond.
[35] Financial institutions also benefit from the ECB's purchasing programme, which includes covered bonds – including mortgage bonds (CBPP3). In January, net purchases of covered bonds stood at 3.68 billion euros.
[36] This programme includes a corporate sector purchase programme (CSPP), which has been extended to all issuers meeting the conditions of the programme (minimum rating BBB-). In January, net corporate debt purchases stood at 4.61 billion euros.
[37] Source: Economic indicators of the Bank of Spain.

December, but below the figure of 5.3% seen at the start of the year),[38] which has offset the continued decline in the outstanding credit balance for the purchase of housing[39] (-1.2%). Bank financing extended to non-financial companies continued to fall (from 1.2% in September to 0.5% in December), due to the decline in traditional credit (-0.6% in December) and to the slowdown in financing through debt issuances (from 16.4% to 13.9%), which is still growing at very high rates.[40] Large non-financial companies, and an increasingly large number of medium-sized companies, continued to take advantage of the good market conditions and strong demand from investors to issue longer-term debt[41] or refinance their debt under better conditions. In addition, the balance of foreign loans showed a 0.8% decrease.

Liquidity, financing and fragmentation risk: yellow

- The fixed income issues registered with the CNMV in the fourth quarter of 2019 stood at 34.9 billion euros, 40% less than in the same period of 2018, due to the lower volume of SAREB issuances and issuers' reduced financing needs, which they would have previously covered by taking advantage of the good market conditions and low rates. Issuances for the year as a whole were 90.1 billion euros, 11% less than in 2018, and the lowest amount recorded in the last 10 years. All debt categories saw decreases except for securitisation issuances and in certain types of instruments such as internationalisation bonds. There was also an increase in issuances of short-term commercial paper made by non-financial corporations. At the same time, fixed income debt issuances of Spanish companies abroad slowed, but the amount issued in 2019 stood at 100.3 billion euros, exceeding the number of issuances registered in Spain. In regard to issuances abroad, the greater weight of long-term issuances compared to commercial paper should be noted. Preliminary data for January 2020 indicate that debt issuances registered with the CNMV remain modest and more orientated towards commercial paper.[42] In the equity markets, there were no IPOs in the past year or in 2020 to date, as several companies cancelled their market debuts on the back of the existing uncertainties.
- Average daily trading in the continuous market recovered – as usually happens – in the fourth quarter last year, totalling 1.98 billion euros. This puts it above the average for the entire year (1.82 billion euros), but down by 4.1% year-on-year. Preliminary data for January of this year indicate that daily trading once again fell sharply to 1.63 billion euros, 12.3% less than in the previous year and the lowest volume for that month in the last decade.

[38] Since January, the annual variation of this balance has fluctuated between the minimum of 3.1% seen in October and the maximum of 5.3% at the start of the year. After the slowdown in the third quarter, the number of consumer loans extended by institutions increased, since this is the segment that is in most demand and offers the highest returns, despite the NPL risks involved.

[39] The number of mortgages arranged decreased by 0.5% year-on-year in November, marking four consecutive months of declines.

[40] All Ibex 35 companies, except Aena, Inditex, Mediaset, Siemens Gamesa and Viscofan, are currently financed to a greater or lesser extent with medium or long-term debt issuances.

[41] More and more issuers are issuing green bonds.

[42] Debt issuances registered with the CNMV in January stood at 3.29 billion euros, 35% less than in January 2019, of which more than half were short-term commercial paper.

- Also, the degree of market fragmentation, which was very close to historical highs in the third quarter of 2019,[43] moderated in the last quarter of the year. 40.3% of the trading of Spanish securities subject to market rules (lit plus dark) was traded in venues other than the home market. Preliminary data for January point to a further increase in the relative importance of competing trading venues for these securities, reaching what would be a historical high of 45.4%. The delocalisation trend seems to have reached a ceiling in Europe as a whole, with some reversal being observed in places where the market share of competing venues has fallen below 40%.[44] Trading in Spanish shares carried out through systematic internalisers − and therefore not subject to market rules − accounted for more than 15% of total trading[45] in 2019, compared with values of below 5% reached in early 2018,[46] a figure which remained unchanged in the first weeks of 2020. The Spanish regulated market operator, BME, was the subject of a voluntary takeover bid launched by the Swiss market operator, SIX Group,[47] which is pending resolution.
- The liquidity indicator of the Ibex 35 (evaluated through the bid-ask spread) remained at satisfactory levels, although the slight rise in the differential observed in the second half of the year persists. Although market volatility remains at low levels, fragmentation and the decrease in trading volumes are pushing up the values of the indicator. The sovereign bond spread improved slightly[48] for most of the period, although it continued to show values that were higher than those seen in the first half of the year. In absolute terms, the range also decreased, albeit to a smaller extent, and its size is still relevant in the environment of low rates (Figure 15).
- The interest rate differentials between loans to companies in the euro area and Spain returned to negative values, both for those less than 1 million euros (-8 bp, historical low) and for loans of higher amounts (up to -4 bp in December, 29 bp in September), reaching their lowest levels since the beginning of 2012.

Risk of contagion: yellow

- The correlation between the daily returns of the different types of Spanish assets decreased significantly during the last quarter of 2019, reaching very low values in recent weeks (Figure 31). The median value of these correlations at the end of January was 0.02, much lower than the average for the whole of 2019 (0.18) and the average value for the last decade (0.5). Both the maximum and the minimum value of the correlations decreased, although the latter was more pronounced so the difference between the two

[43] Trading in other trading venues and competing markets of BME represented 44.8% of total trading subject to market rules in the third quarter of 2019, very close to the historical high of 44.9% seen in the first quarter.
[44] This trend could be a consequence of the fall in high frequency operations, which are conditioned by low volatility and which, for the most part, take place in trading venues outside their markets of origin. If this were the most relevant explanation, it is reasonable to assume that there could be further changes in the future, if market volatility levels become somewhat higher.
[45] Total trading is understood in this context as the sum of the trading subject to market rules and that carried out through systematic internalisers.
[46] Although one of the initial objectives of the MiFID II Regulation was to shift part of the trading not subject to market rules to trading venues or organised markets in which it was subject to them, market data reflect a lack of effectiveness in the measures implemented to achieve this objective.
[47] On 28 November, SIX Group presented a voluntary takeover bid to acquire BME shares at a price of 34 euros per share.
[48] The spread continues to stand out in relative terms, but is subject to agents' transaction costs, which are relevant in an environment of such low rates at 10 years. In absolute terms, there was also an increase in the average spread, but it was less than 1 bp.

increased considerably. The first fell to around 0.58 in January and the second, which registered a low of -0.5 in November, was -0.37 at the date of publication of this report-. The decrease in correlation levels can be explained by the aforementioned increase in the yields on debt assets in the last quarter (and the consequent fall in prices) in a context of rising quoted prices for shares in most sectors. It should be noted that lower levels of correlation reduce the chances of contagion among different types of assets and favour the diversification of portfolios.

- With respect to the movements in European public debt assets, the correlation between the yield on the Spanish sovereign bond and that of the core European countries increased from the end of October until almost the end of December (from 0.85 to 0.91), from when it started to fall to reach 0.73 at the end of January (the lowest level in January was 0.60). This decrease was partly due to the faster decrease in the yields on the public debt of the core European countries in January compared to the yields on Spanish public debt as investors sought out more secure assets (flight to quality) on the back of rising uncertainty caused by the coronavirus outbreak. The correlation between the yield on the Spanish sovereign bond and those of peripheral countries also followed a similar trend (Figure 32). However, the initial increase in November was more pronounced (from 0.35 to 0.86 at the end of December) and the subsequent fall until the end of January was smaller, ending the first month of the year at 0.81. In this case, the increase in the correlation with peripheral countries was due to the closer alignment with movements in the Italian and Greek bonds, which in previous months had shown very low and even negative levels of correlation.

Market risk: yellow

Figure 3. Stock market prices

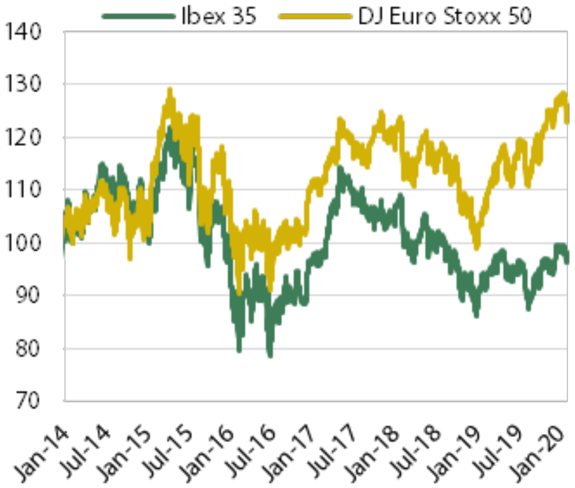


Figure 4. Price-to-earnings ratio (PER)

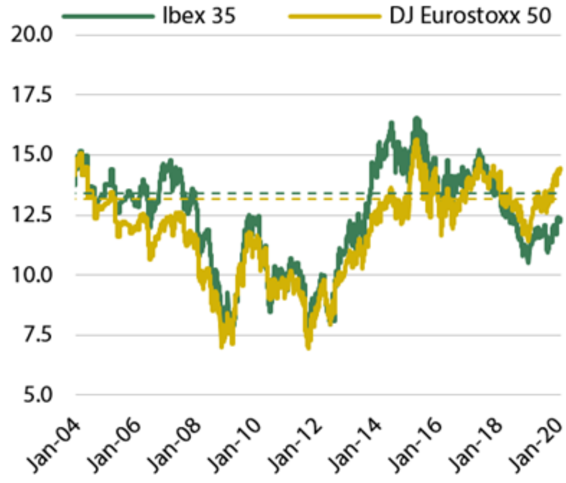


Figure 5. Short-term interest rates (3 months)

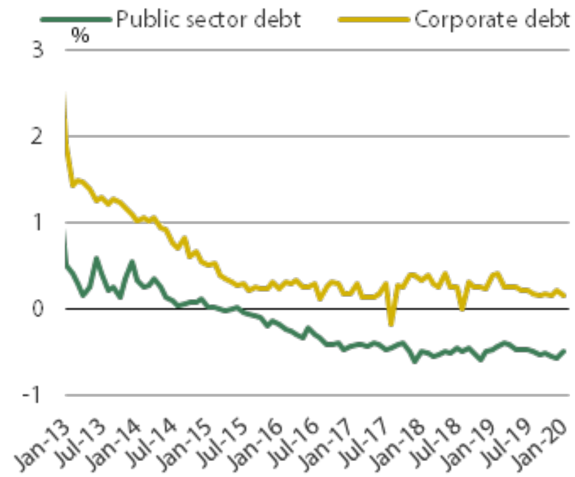


Figure 6. Long-term interest rates (10 years)

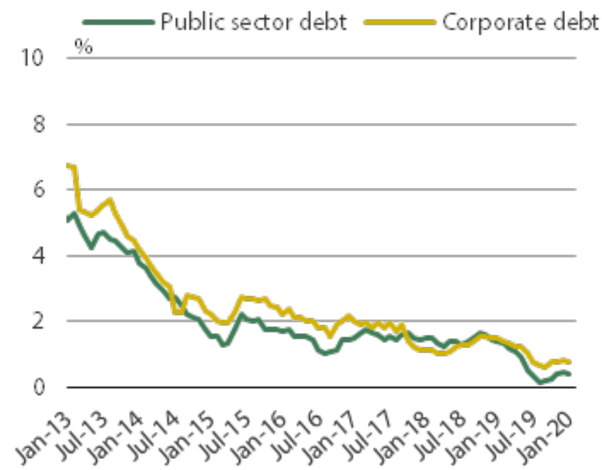
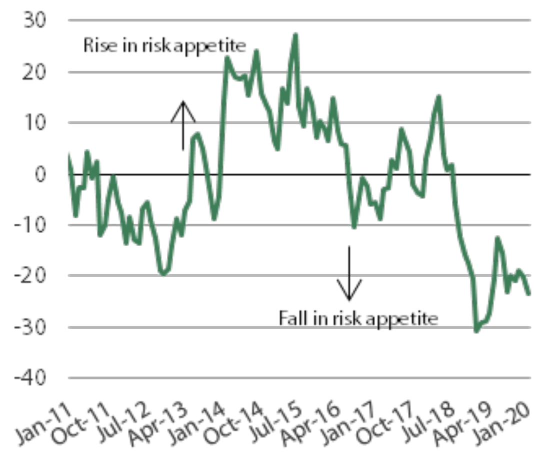


Figure 7. Oil price

Figure 8. Risk appetite (State Street)



Credit risk: green

Figure 9. Financing of the non-financial sector

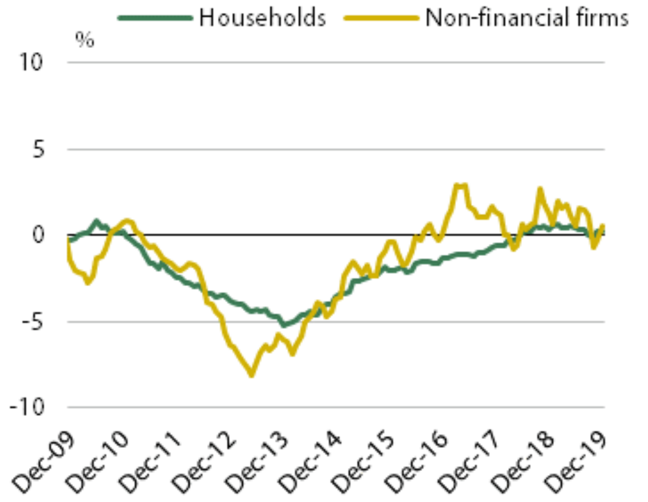


Figure 10. NPL (delinquency) ratio and unemployment rate

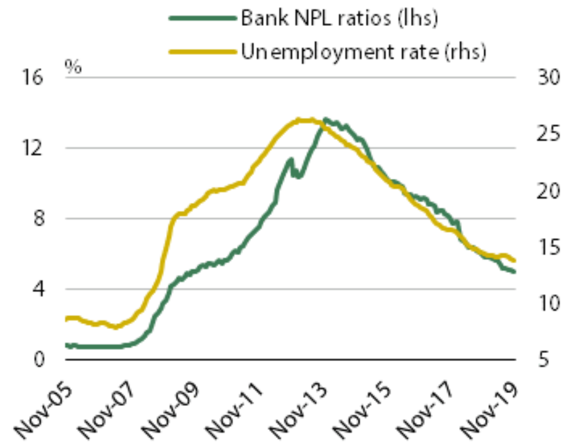


Figure 11. 10-year government debt risk premium (rate differential with Germany)

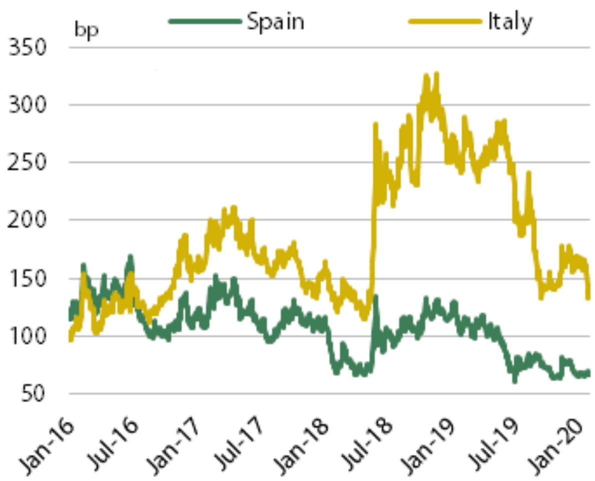


Figure 12. Private debt risk premium (5-year CDS)

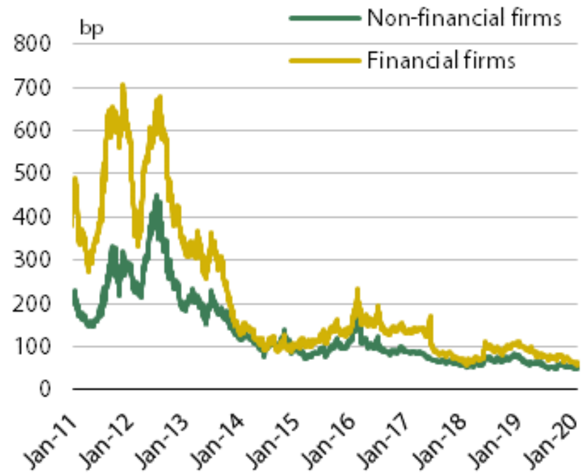


Figure 13. Housing prices (year-on-year change)

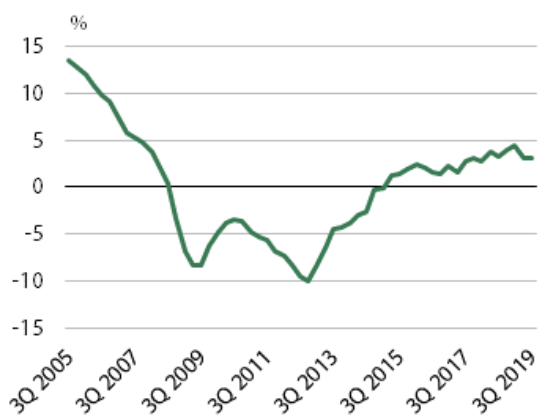
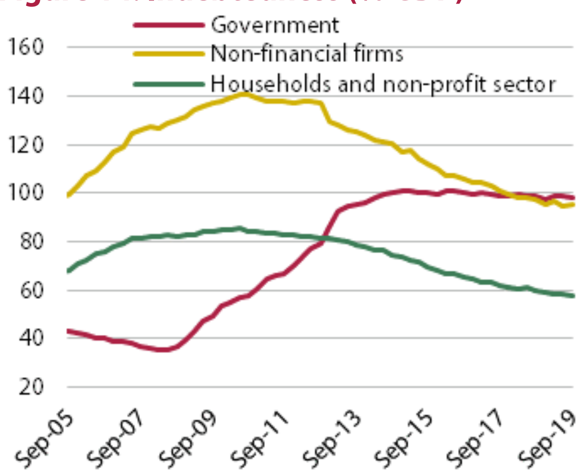
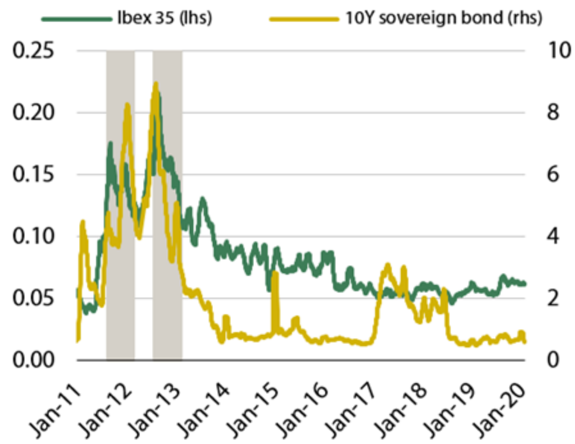


Figure 14. Indebtedness (% GDP)



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)

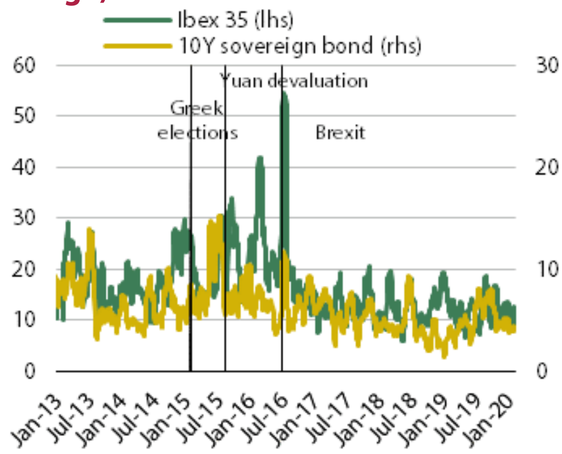


Figure 17. SIBE trading (1-month moving average)

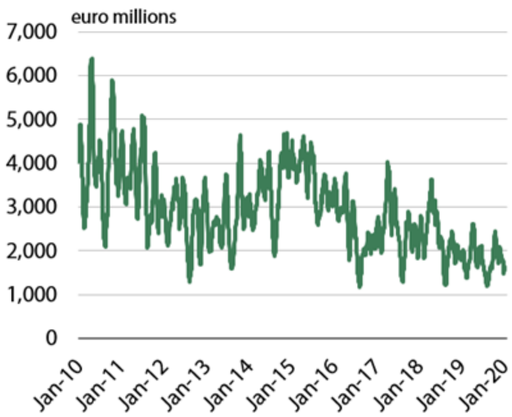


Figure 18. Interbank spread (LIBOR-OIS)

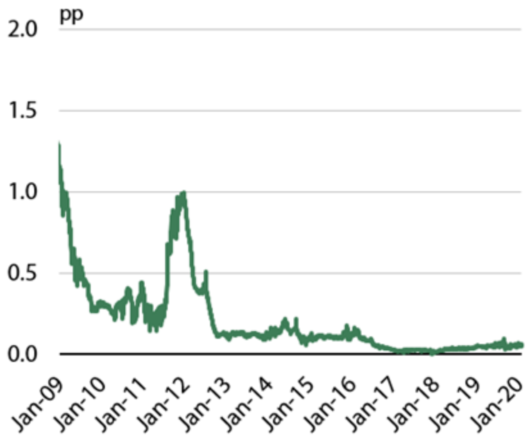


Figure 19. Differential (Spain-EMU) on corporate lending rates

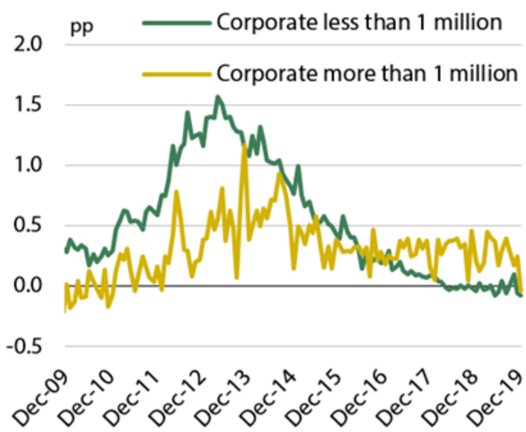
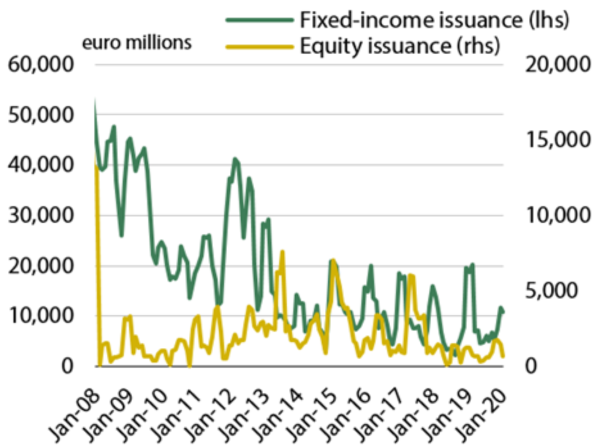


Figure 20. Issues (3-month moving average)



Macroeconomic risk: yellow

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

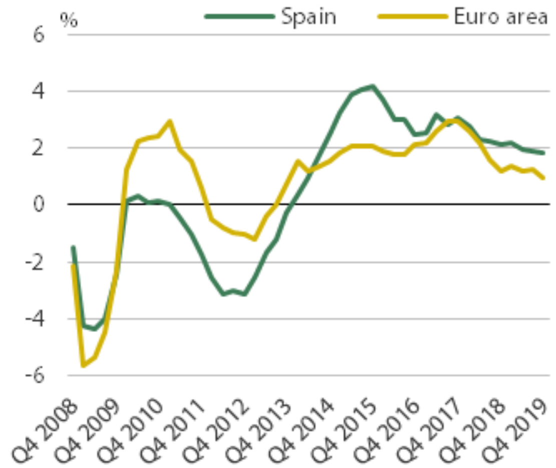


Figure 22: HCPI and core CPI (year-on-year change)

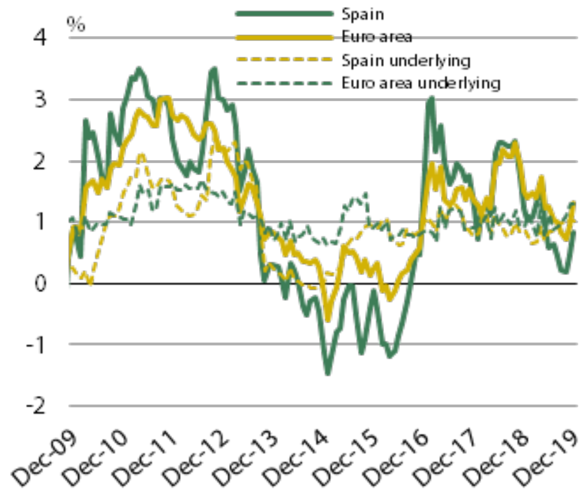


Figure 23. Employment (year-on-year change)

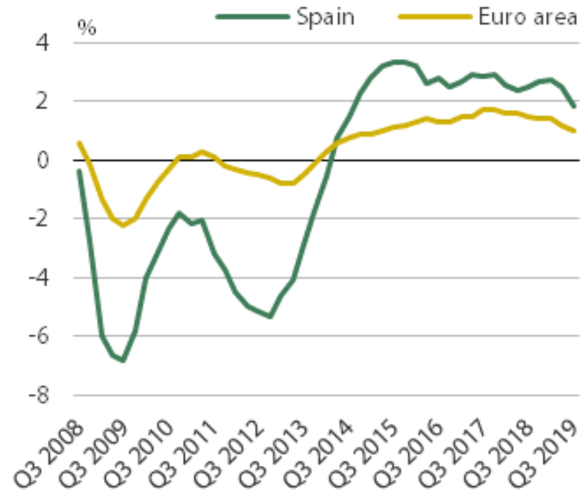
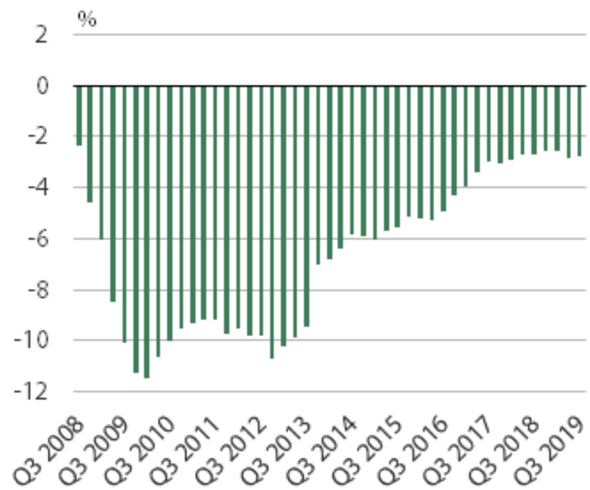


Figure 24. Government balance (% GDP)



Cumulative data for four quarters.

Figure 25: Exchange rates

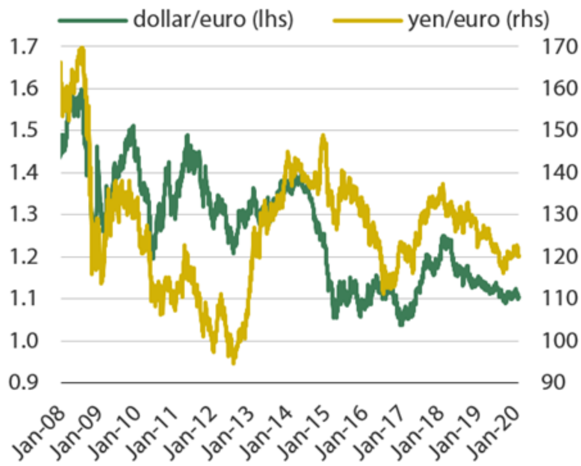
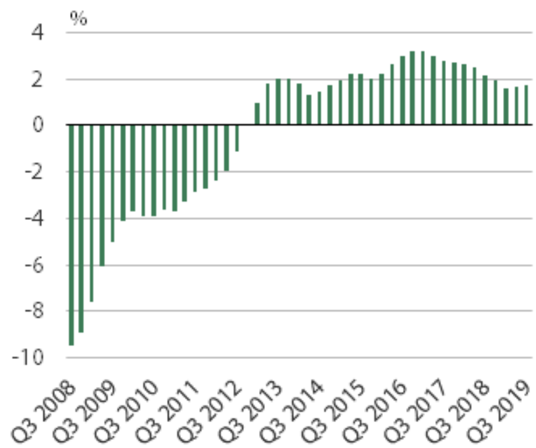
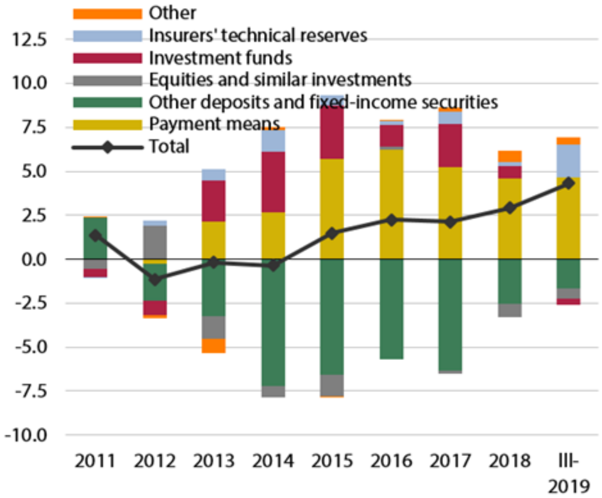


Figure 26. Current account balance (% GDP)



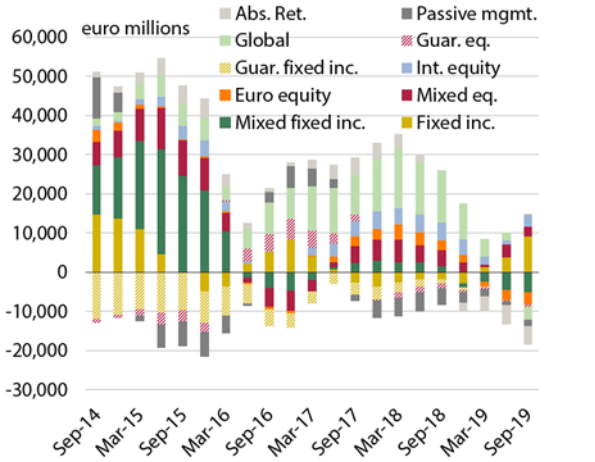
Investors

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)

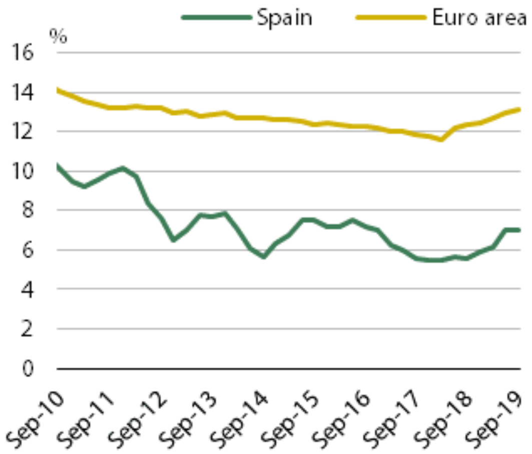
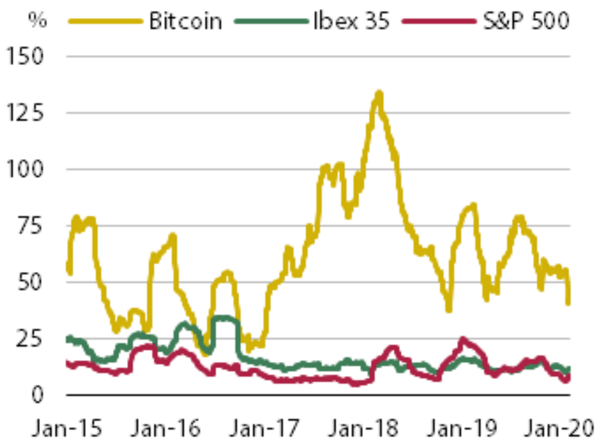


Figure 30. Bitcoin volatility



Risk of contagion: yellow

Figure 31. Correlations among asset classes

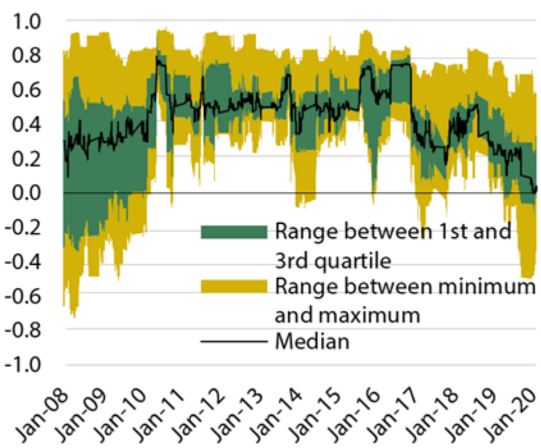
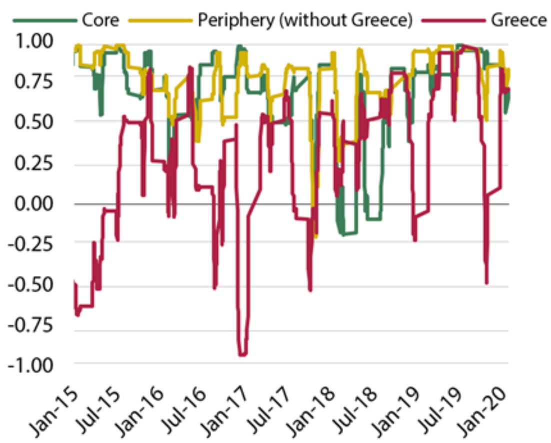


Figure 32. Correlation between the yield on Spanish and other European 10-year bonds



Heat map: risk categories

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

(1) Reference intervals could be: (i) "fixed": predetermined numerical tresholds, one (1t) or two-tailed (2t); (ii) "corr_3m": 3 months windows correlation coefficients; (iii) "p_3Y": percentiles obtained from 3 past years distribution, one (1t) or two-tailed (2t) or (iv) "p_h": percentiles obtained from historical distribution. Source: CNMV, Bloomberg and Thomson Datastream. (2) Data until 15 July.

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 Document No. 60 available at 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[49], 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

[49] Since June 2017, the heat map has included an additional indicator: the bid-ask spread of the 10-year sovereign debt bond.

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 Quarterly Bulletin*, Quarter I, pp. 109-121.

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 Ibex 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.