CNMV
Comisión Nacional del Mercado de Valores

Financial Stability Note

No. 10 April 2019

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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.

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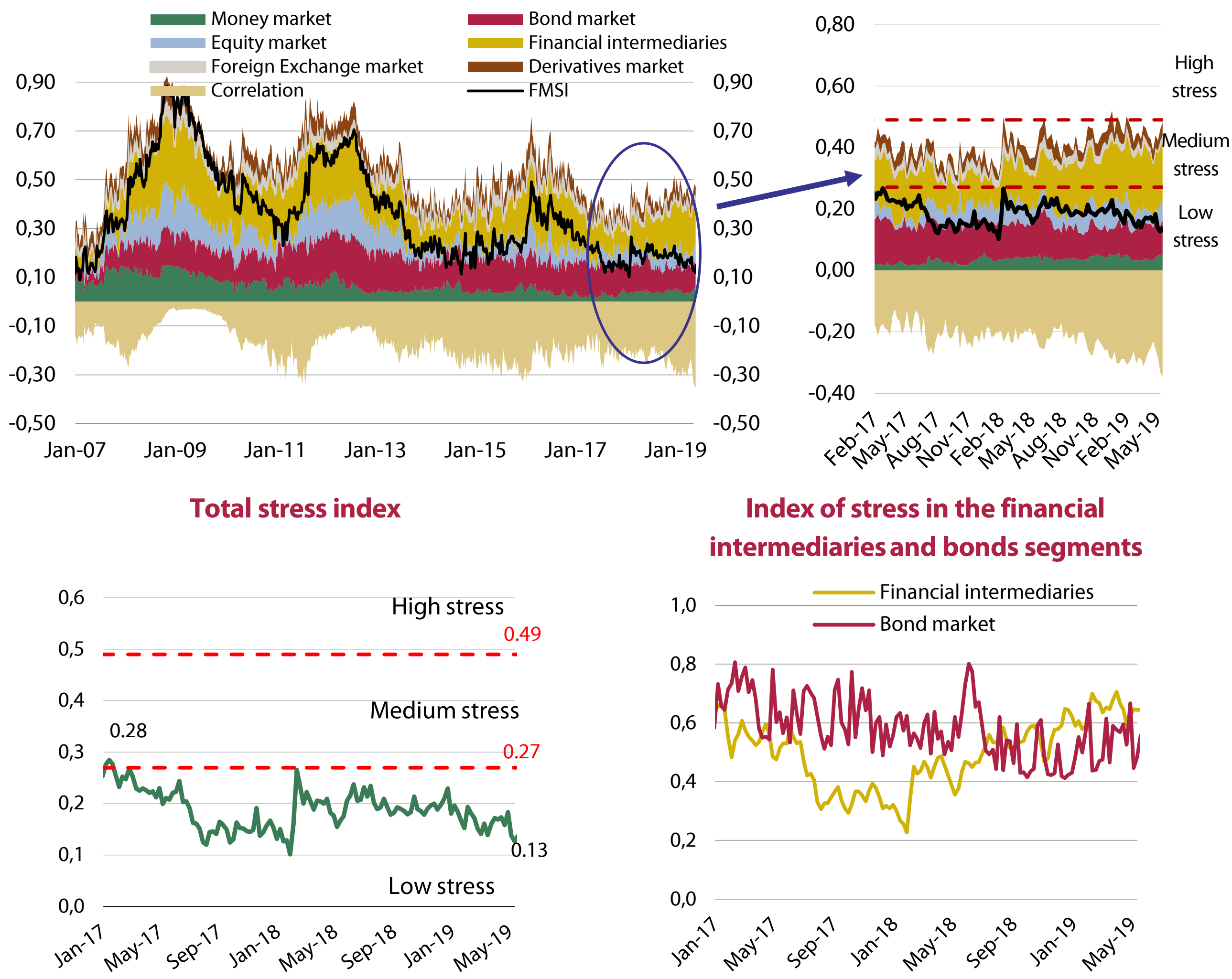
Summary

✓ The Spanish financial market stress index remained at below 0.2 over the first few months of the year[1], thus highlighting the low level of systemic risk currently detected. Such a low level of the index, which is partly the result of the low correlation of the stress level between the different segments studied, is not incompatible with high levels of uncertainty being detected in some of these segments. In particular, it is worth noting the high level of the index for the financial intermediaries segment, which is the result of the fall in bank share prices (the ratio of the share price over the book value for financial companies as a whole listed on the Spanish stock market stands at 0.75). The index is also high in the debt segment due to worsening liquidity and occasional upturns in the volatility of debt prices.

Spanish financial markets stress index

FIGURE 1



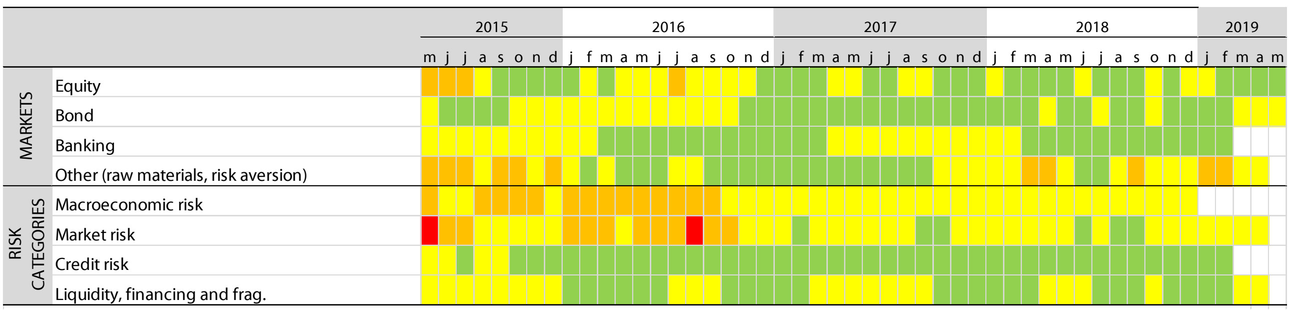
Source: CNMV.

For further details on recent movements in this index and its components, see the CNMV's statistical series (market stress indices), 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 14 (January (1)), 23-41 or CNMV Working Paper 60 (http://www.cnmv.es/portal/Publicaciones/monografias.aspx).

[1] The closing date of the note is 10 May.

- ✓ The international macroeconomic context continues to be marked by an ongoing slowdown in economic growth as a result of several factors, particularly restrictions to world trade. In the case of Spain, the slowdown in economic growth is less intense, as revealed by the most recent indicators and forecasts. Thus, the GDP of the Spanish economy is expected to grow by 2.1% this year and by 1.9% next year[2], 0.8 and 0.4 percentage points higher than the euro area, respectively. In this context, employment is growing at a significant pace, inflation remains below 1.5% (and core inflation below 1%) and the public sector accounts are gradually improving. The deficit stood at below 3% in 2018 (2.48%), allowing Spain to exit the excessive deficit procedure, which it had been under since 2009.
- ✓ Spanish financial markets have continued to record relatively stable performance since publication of the last Stability Note and following the turbulence of the final stretch of last year. However, the presence of several uncertainties is preventing sharper rises in share prices. The IBEX 35 has accumulated gains of 6.8% in the year to date, which is a notable increase, but lower than that recorded in most markets of comparable economies, with growth of greater than 10%. In debt markets, the ECB's decision to delay rate hikes is keeping debt yields at low levels (yields on Spanish public debt are negative up to a four-year term) and allowing credit risk premiums to fall (the sovereign risk premium stood at close to 100 bp at the start of May). Market and liquidity risks remain the most significant, particularly in some debt assets.
- ✓ The most important sources of uncertainty about the international macroeconomic and financial environment are related to the prolongation of restrictions on world trade, which have already had negative consequences on the activity of many important economies and, at a European level, related to the final resolution of the Brexit process, which is still generating many doubts. In the context of a clear economic slowdown, the decision of the central banks of the US and the euro area to delay interest rate hikes maintains the incentives of some agents to borrow, to invest in high-risk assets (search for yield), and prolongs the difficulties of the banking sector in raising its profitability. However, it also reduces expectations of an increase in finance costs of the most indebted agents and, therefore, the possibility of upturns in the NPL ratio.

Heat map: summary by market and risk category FIGURE 2



Source: CNMV. See article in CNMV Quarterly Bulletin Quarter 1 2015. "Identification of vulnerabilities in the Spanish financial system: an application of heat maps". Data until 10 May.

[2] Forecasts published by the IMF in April (*World Economic Outlook*).

Sources of risk

Macroeconomic environment

- During the first quarter of 2019, economic activity in Spain continued along the expansive path it began in 2014 and grew by 0.7% in quarter-on-quarter terms and by 2.4% year-on-year. Both figures are 0.1 percentage points higher than those at year-end 2018 (Figure 21). These figures show that the Spanish economy is not immune to the deceleration in growth worldwide, but also that its slowdown is much less intense than that of other comparable economies. In fact, the euro area growth rates in the first quarter were far below the Spanish data, with increases of 1.2% year-on-year and 0.4% quarter-on-quarter. In this context, employment continued to rise at a good pace (Figure 23), specifically at a rate of 2.8%, which led to the unemployment rate[3] falling to 14% at the end of March (15.9% one year earlier). In addition, the preliminary data for April show an increase in the number of contributors to the Social Security system of almost 190,000 people.

- Inflation has been gradually rising since the start of the year and stood at 1.3% year-on-year in March, 0.2 percentage points up on February, mainly as a result of the 3% increase in transport prices, which reflect the rise in fuel prices (Figure 22). The core inflation rate, however, which excludes the most volatile elements (energy and fresh food), remained at 0.7% (0.8% in the euro area). The preliminary data for April seem to indicate that the year-on-year inflation rate remains at 1.5%. The inflation differential with the euro area, which turned negative in November last year, stood at -0.1 pp in March (-0.3 pp in December).
- The latest data for public sector finances show that the gradual reduction in the deficit continued in 2018. At the end of the year, the public deficit stood at 2.5% of GDP (3.1% in 2017), thus fulfilling the government's planned target and allowing Spain to exit the excessive deficit procedure that it had been under since 2019. The level of public debt at the end of the year stood at 97.1% of GDP, a reduction of one percentage point compared with the figure for year-end 2017. The preliminary figures for the first few months of the year reveal a slight worsening of the deficit figures, but it is too early to know whether this trend will continue over the rest of the year. The combined deficit of the Central Government, regional governments and the Social Security system to February stood at 0.95% of GDP, 0.9 percentage points higher than in the same period of 2018[4]. According to the government's forecasts in its 2019-2022 Stability Plan, the deficit target for this year stands at 2% and for 2020 at 1.1%. The latest forecasts from the European Commission, however, estimate that the deficit will close 2019 at 2.3%, 0.3 percentage points higher than the government's forecast, while the gap in 2020 would be 0.9 percentage points (deficit of 2%).

[3] Unemployment rate according to the EPA (labour force survey).

[4] This figure does not include the balance of local authorities or the amount of the aid given to banks, which in the first two months of the year amounted to 29 million euros. An analysis by sub-sector shows that the deterioration in the public accounts in the early months of the year was mainly due to the increase in the deficit of the Central Government, which stood at 1% of GDP to February, 19.1% up on January-February 2018. The deficit of the regional governments shrank by 72.4% compared with February 2018. Although the Social Security Fund recorded a surplus of 0.06% of GDP, this surplus fell by practically half.

- According to the IMF forecasts in April this year, global growth will continue to moderate in 2019, with global GDP expected to grow by 3.3%, following a downward correction of 0.2 percentage points (3.6% in 2018). This slowdown in economic activity is a consequence both of the factors affecting every economy (uncertainties about the final Brexit deal and restrictions on world trade, see the section on "Sources of political uncertainty") and idiosyncratic factors affecting specific economies. The latter include doubts about the sustainability of public finances in Italy, the period of protests in France ("yellow vests") and the introduction of new emission standards for diesel cars in Germany.

- Against this background, the forecasts for the Spanish economy are relatively positive, with expected growth of 2.1% in 2019, following a small downward revision of 0.1 percentage points, and 1.9% in 2020[5]. These figures are above the expected rate for the euro area, which the IMF has set at 1.3% for this year and 1.5% for next year. Even though a better performance is expected for the Spanish economy, some significant challenges remain that might influence economic growth in Spain over the medium term. The most important challenges include those resulting from the continuing high unemployment rate (Spain is, for example, the country with the second highest level of long-term unemployment in the European Union, behind Greece), the need to face the challenges resulting from an ageing population and the financial vulnerability resulting from the high, albeit falling, level of debt of some sectors of the economy[6] (including the general government). This vulnerability would be significant for low-income groups in the context of rising interest rates, which are not imminent for the moment, and a slowdown in economic growth. Finally, the sources of political uncertainty relating to Catalonia and the level of parliamentary fragmentation persist.

Low interest rate environment

- The confirmation by the ECB at the end of January that economic growth will be weaker than expected, in a context of contained inflation, left the door open to new expansive measures by the monetary authority, as was the case at the start of March when it announced the delay until the end of 2019, or beyond, of the first rate hike, as well as the start-up in September of a third round of liquidity for the banking sector (TLTRO-III[7]). In this context, any rate hike is now postponed and it therefore seems reasonable to think that the monetary policy will continue to be accommodative for a relatively long time. Following the same line, the Federal Reserve, which in September will finish the process of reducing its balance sheet, has paused the adjustment of its monetary policy and has indicated that it "will be patient" when deciding new interest-rate hikes, in a context of greater economic uncertainties. Economic agents do not expect any rate rises until 2020, which, in any event, will be conditioned by the development of the economy and global risks. Debt yield curves both in the euro area

[5] These forecasts are in line with those made by other agencies. For example, the European Commission's forecast matches that of the IMF, while the Bank of Spain has estimated that GDP will grow by 2.2%.
[6] The debt of households and non-financial companies amounted to 58.9% and 93.2% of GDP, respectively, at year-end 2018.
[7] Liquidity auctions will be held quarterly with a maturity of two years, starting in September and lasting until March 2021.

and in the US also point in the same direction[8]. In this context, some existing risks might become more intense: (i) increased incentives to borrow, particularly to purchase consumer goods (which increases the level of financial vulnerability in economies with lower savings rates), (ii) incentives to purchase higher-risk assets in the search for yield and (iii) difficulties for the banking sector in increasing its margins.

- With regard to household decisions, the data from the Financial Accounts show that they carried out a positive net investment in financial assets of 1.9% of GDP in 2018 (1.7% in 2017). In addition, the trend that began in 2013 continued: there was a reduction in investment in term deposits and debt instruments due to their low return, although with lower figures than in previous years (3% of GDP compared with 6.3% in 2017), and positive investment in more liquid assets[9] (4.6% of GDP) and in investment funds (0.8% of GDP). It is important to point out, however, that the turbulence in financial markets in the last quarter of the year partially reversed this trend and the investment fund industry recorded outflows of funds in an amount of 4.9 billion euros. The largest net redemptions were recorded in the fixed-income category, with 3.9 billion (a total of 5.9 billion over 2018) and the mixed equity category, with 1.9 billion euros (even though it recorded positive net subscriptions of 600 million euros in the year as a whole). In contrast, global funds continued to record inflows of funds in the fourth quarter (215 million euros), although much lower than in previous quarters. Guaranteed fixed-income funds also recorded positive net subscriptions, of 450 million euros in three months. This had not occurred since 2013, when their assets under management began to fall, shrinking by almost 90%.

- In the area of investment funds, the most recent analyses in the context of work on the evolution of non-bank financial intermediation (NBFI) in Spain show that these undertakings are the most significant in quantitative terms (82.5% of NBFI) and that the most significant risks observed are credit risk and, increasingly, liquidity risk[10].

- With regard to investors and in the scope of the new developments introduced by MiFID II/MiFIR in the area of investor protection, it is important to note the new powers of intervention that ESMA has been exercising since 2018 at a European Union level. The measures adopted, which entailed the prohibition as from 2 July 2018 of the marketing, distribution or sale of binary options to retail clients and the imposition of restrictions as from 1 August 2018 on the marketing, distribution and sale of contracts for differences (CFDs), also when aimed at retail investors, remain in force after having been extended several times. Once these measures are no longer in force[11], national authorities, such as the CNMV, already plan similar measures which, unlike the European measures, may be indefinite.

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[8] Medium and long-term debt assets in the euro area have recorded falls in the year of between 5 bp and 40 bp (and even higher for some countries) and between 5 bp and 20 bp in the case of the US.
[9] Cash and sight deposits.
[10] See the article "Non-bank financial intermediation in Spain" prepared by Anna Ispierto and published in the CNMV's quarterly bulletin for the first quarter of 2019.
[11] The measures relating to CFDs entered into force on 1 May 2019 for a period of three months and the measures relating to binary options entered into force on 2 April 2019 for three months.

- The uncertainties affecting the banking sector remain and some of them are even increasing in the context of rising economic risks. In addition to the difficulty of widening their margins, negatively affected by the prolongation of low interest rates[12], there are new legal risks as a result of the judgement of the Court of Justice of the European Union on Spain's mortgage rate index (IRPH) and the possibility of new capital requirements (which further drags down their profitability). Furthermore, other risks remain latent, such as maintenance of a high volume of non-productive assets and their exposure to emerging markets in difficulties, as well as to sovereign debt portfolios subject to a significant degree of uncertainty. The sector's solvency is favourable, but regulators stress the need for banks to strengthen their capital, while warning about the need to continue with their consolidation by means of mergers in order to improve their efficiency. The biggest risks faced by the sector are the slowdown in economic growth, which might negatively affect their business and their NPL ratio, as well as legal risks and risks relating to growing competition from new operators that make intensive use of new technologies (fintech and insurtech).

Sources of political uncertainty

- One of the biggest sources of political uncertainty is associated with the development of tensions in trade relations between the US and China, which resurfaced in May, when the US Administration raised tariffs from 10% to 25% on products imported from China valued at 200 billion dollars and announced its intention to tax the remaining Chinese imports, valued at 300 billion dollars. The Chinese Government, in turn, reacted by announcing the imposition of tariffs of between 5% and 25% on products imported from the US valued at 60 billion dollars. These tariffs will come into force in June. The trade restrictions adopted over recent months (as well as their announcement, to the extent that it may change agents' expectations) have already had a negative impact on the exports of many large exporting economies and, consequently, on the development of their economic activity. As mentioned in a previous section, these tensions have led to significant downward revisions of growth forecasts over the last half year and, in view of the latest events, the uncertainties are far from disappearing. The adverse effect may therefore continue in key macroeconomic variables, such as investment, and may also generate turbulence in financial markets.

- In Europe, Brexit remains one of the main political risks for the economic and financial environment. Following the United Kingdom's request for an extension of the deadline for it to leave the European Union, in April the European Council agreed an extension to application of Article 50 until the end of October 2019. The manner in which the UK will leave is still subject to a high level of uncertainty, and a no-deal Brexit cannot be ruled out. Faced with this uncertainty, various institutions have been taking a series of measures over recent months relating to different financial areas. These measures aim to facilitate the transition to the new situation resulting from the United Kingdom's status as a third country in the event that the agreement provided for in Article 50 of the Treaty

[12] The ECB is studying the possibility of softening the costs paid by banks as a result of the excess liquidity deposited in the central bank, but no decision on this matter has yet been taken.

on European Union is not reached. In the area of securities, it is important to note the decision of the European Securities and Markets Authority (ESMA) to recognise UK central counterparties (CCPs) and the central securities depository (CSD) as a third country CCP and CSD[13]. This recognition will arise in the event of a no-deal Brexit. In addition, a Royal Decree[14] was published in Spain in early March adopting temporary contingency measures that would enter into force in the event of a no-deal Brexit.

- Another risk to financial stability in Europe relates to the fiscal policies adopted in Italy. According to the European Commission's forecast published in May, the Italian public deficit will rise over the next two years (to 3.5% of GDP in 2020) with the consequent increase in the level of its public debt. Increased doubts about the sustainability of the public finances of Italy's economy might generate tensions in fixed-income markets and spread to the most vulnerable European economies in financial terms.

- In Spain, parliamentary fragmentation, which remains following the results of the general elections held on 28 April, together with the political tensions existing in Catalonia, remain significant sources of uncertainty.

- Finally, and more generally, there are risks associated with the geopolitical tensions in the Middle East, with macroeconomic vulnerabilities in emerging economies in which some Spanish companies operate and with the possibility of cyberattacks on financial infrastructures that, *inter alia*, might have a negative impact on financial markets, both in Spain and globally.

[13] In Spain, the CNMV has opened a new section on its website called "After Brexit: issues relating to the financial sector", which sets out information that may be useful for market participants and investors.
[14] Royal Decree-Law 5/2019, of 1 March, adopting contingency measures to prepare for a withdrawal of the United Kingdom of Great Britain and Northern Ireland from the European Union without the conclusion of the agreement provided for in Article 50 of the Treaty on European Union.

Risk categories

Market risk: yellow

- International equity markets, which ended 2018 with significant falls as a result of the presence of several economic and political uncertainties, began 2019 with notable gains thanks to the temporary easing of trade tensions between the US and China, the positive performance of the US economy and the expectations that the ECB would maintain its accommodative monetary policy over time[15] and that the Federal Reserve[16] would not, for the time being, make any adjustments to its monetary policy. Equity markets obtained significant gains up to April, which allowed many of them to recover a large part of the previous year's losses. However, in May there were further falls[17] due to fears of the consequences of a further escalation of trade tensions between the US and China.

- Despite the falls in May, all the main international stock market indices have recorded gains in the year, which are most significant in the case of the US and some European markets. In the case of the US markets, the gains made early in January were enough to offset all of the falls of the previous year, but markets continued to record gains to stand in the area of historical highs at the end of April. This is particularly the case for the NASDAQ technology index, although many investors continue to warn that some technology companies are overvalued[18]. The cumulative rise in US stock indices so far this year[19] ranges between the 11.2% of the Dow Jones and the 19.3% of the NASDAQ. The gains in Europe were similar, although insufficient to offset the sharp falls in some markets in 2018, and ranged between the 12% of the Eurostoxx 50 and the 14.2% of the German Dax index. Despite a slowdown in economic growth and the risks associated with the as yet unresolved Brexit process, European securities have been favoured by their attractive prices and the prolongation of low interest rates, which favours the purchase of this type of instrument.

- In Spain, the IBEX 35 recorded cumulative gains of around 12% to April. It performed more discreetly than the leading European stock markets as, in addition to the uncertainties relating to rising global trade tensions, it suffered the effects of some specific risks, including those relating to the electoral process and, consequently, the direction of future economic policies. In the first few days of May, the IBEX 35 fell by 4.7%, thus reducing its cumulative gain over the year to 6.8%.

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[15] The ECB confirmed its intention of maintaining "an ample degree of monetary accommodation", delaying until the end of 2019 or longer the first interest-rate hike, which will be accompanied as from September by a new round of injections of liquidity for banks (TLTRO III).

[16] The Federal Reserve maintained its rates in April in a range of 2.25%-2.5% as a result of the positive performance of the US economy in a context of low inflation. The Federal Reserve indicated that it will be patient when deciding on rate movements as it waits to see how the economy develops, at the same time as it confirmed that it will end the its balance sheet reduction process in September.

[17] European indices began May with falls of 2.3% for the German Dax, 4.6% for the French CaC 40 and the Italian Mib 30, and 4.4% for the European Eurostoxx 50. For their part, the US Dow Jones, S&P 500 and NASDAQ indices fell in the same period by 2.4%, 2.2% and 2.2%, respectively, while the Japanese Nikkei 225 fell by 4.1%

[18] The shares of the leading US technology companies known as FAANG (Facebook, Apple, Amazon, Netflix and Google) recorded cumulative gains up to 10 May of 28%, 25%, 26%, 35% and 11%, respectively.

[19] Data to 10 May.

- Most sectors have performed positively over the year, with noteworthy gains in companies from the construction, capital goods and consumer goods sectors. Electricity companies also made significant gains thanks to the prospect of continuing low interest rates, which favours their defensive nature and the maintenance of low finance costs. Small-cap companies also recorded notable gains, which were much more moderate for medium-cap companies as the former are favoured by their greater dependence on the domestic market, which is more buoyant than neighbouring markets. Banks, for their part, performed very discreetly as their intermediation activity remains hampered by a very lax monetary policy, in an environment of slowing economic growth. They are also exposed to some regulatory uncertainties[20]. In contrast, real estate companies recorded slight losses (3.7%) in view of the expectations of a greater slowdown in activity in the sector.

- The price-earnings (P/E) ratio of the IBEX 35 rose from 10.9 in the middle of January to 11.8[21] in April (its highest level since August 2018, but lower than its historical average of 13.5 due to significant rises in share prices, accompanied by a context of a slowdown in the expected growth of corporate profits for the coming months (Figure 4).

- The shift in monetary policy bias and the expectation that interest rates will be maintained at the current levels in the medium term has slightly mitigated the market risk relating to debt assets. However, this risk remains high, particularly in high-risk corporate debt, as a worsening economic environment might easily lead to an upturn in risk premiums, particularly for the most leveraged companies, but also for economies with higher debt ratios.

- Sovereign public debt benefited from the continuation of the accommodative monetary policy of the ECB, which continues to reinvest the principal payments from maturing securities acquired under its purchase programmes, as well as the easing of tensions around the sovereign debt of some EU economies. Accordingly, except for Italy (where it has only fallen by 5 bp), yields on the sovereign debt of euro area countries continue to record significant falls: by 28 bp for Germany and almost 60 bp for Portugal (43 bp for Spain) since the end of December. The yield on German debt once again moved into negative figures up to the ten-year term, while the yield on Spanish debt is negative up to the four-year term. The volume of Spanish government bonds held in the ECB's portfolio stood at 255.01 billion euros[22] at the end of April.

- Corporate debt has also remained stable, although there has been greater dispersion in yields. Short-term yields recorded a few changes, but long-term yields fell as they benefited from the ECB's accommodative monetary policy and the reinvestment of the principal payments for maturing securities acquired under the ECB's purchase programme. However, it is necessary to take into account the impact that a scenario of

[20] The Spanish banking sector faces the legal risk of a judgement by the Court of Justice of the European Union on the use of the IRPH (Spain's mortgage rate index) in some mortgages, which might have an impact on the sector of at least 7 billion euros according to the estimates of Goldman Sachs.
[21] In the same period, the P/E ratio of the European Eurostoxx 50 and the US S&P 500 stock indices rose to 13.1 and 16.8, respectively, their highest levels since the first half of 2018.
[22] This amount accounts for 26.9% of the balance of long-term debt securities issued by the State.

a slowdown in economic growth and of rising economic risks might have on companies' financial health and, therefore, on the credit spreads of debt assets issued by the companies that are most indebted and vulnerable to a change in the economic cycle, particularly on subordinated and high-yield debt.

Credit risk: green

- Sovereign and private Spanish issuers' risk premiums have improved progressively over the first few months of the year, following the period of uncertainty regarding financial markets in the final stretch of 2018. The sovereign risk premium, with small ups and downs, remained at levels similar to those at the start of the year (around 117 bp) until the beginning of April and then fell in line with the positive performance of the Spanish economy, the reduction in some uncertainties following the general elections and confirmation of the expansive stance of the ECB's monetary policy. The risk premium, measured as the spread between the yield on ten-year government bonds in Spain and Germany (Figure 11), stood at close to 100 bp on the closing date of this note.

- The average credit risk premium of financial institutions fell from 108 bp at the end of 2018 to 80 bp at the start of May. Although the scenario of a delay in rate hikes hinders an improvement in banks' margins, it may also prevent an increase in non-performing loans in the context of slowing economic growth. In addition to this factor, the announcement of a third round of financing for banks, which will allow them to access long-term, low-cost financing, and the improvement in the situation of Italian public finances[23] are aspects that have also contributed to the fall in this sector's credit risk. The risk premiums of non-financial companies also fell, to around 60 bp on average in May, as, in addition to benefiting from this scenario of abundant liquidity and the maintenance of low interest rates, they also continue to benefit from the reinvestment of maturing securities acquired[24] under the purchase programmes[25].

- The evolution of lending to non-financial sectors[26] of the economy continues improving discreetly thanks to the expansion of lending to companies, which offsets the progressive slowdown in lending to households. The latter moderated its growth to 0.2% in March year-on-year (0.5% in January and February) as the slowdown in the growth of consumer lending, which grew by 3.9% in March[27], was not offset by the lower fall in home purchase loans (-1% in March, its lowest rate since the end of 2011). The balance of total lending to non-financial companies continued to rise (2.4% in March) as a result of the increase in debt issues (14.4%), which are growing at their highest rate since the first half of 2017. Large non-financial corporations have once again taken advantage of the buoyant moment in the market and unchanged interest

[23] Spanish financial institutions have a significant exposure to Italian public debt assets.
[24] On 3 May, the ECB held a portfolio of assets acquired under the corporate sector purchase programme in an amount of 177.72 billion euros.
[25] The ECB's purchase programme included a Corporate Sector Purchase Programme (CSPP), but also specific programmes for securities issued by financial institutions, the Covered Bond Purchase Programme (CBPP3) and the Asset-Backed Securities Purchase Programme (ABSPP).
[26] Source: Economic indicators of the Bank of Spain.
[27] This rate is the lowest since November 2016 and is partially the result of the tightening of the criteria for granting credit, which is in part due to the increase in non-performing loans in this segment.

rates to obtain long-term financing. Financing through bank lending fell by 1.5%, although increases can be seen in some specific segments[28].

Liquidity, financing and fragmentation risk: yellow

- Fixed-income issues registered with the CNMV until April stood at 26.25 billion euros, 13% up on the same period of 2018. Particularly noteworthy were three bond issues by the SAREB (Asset Management Company for Assets Arising from Bank Restructuring) for an amount of over 10.2 billion euros, one issue of mortgage covered bonds in an amount of 3 billion euros and another of contingent convertible perpetual preferred securities for an amount of 1 billion euros aimed at institutional investors. There were also hardly any issues of asset-backed securities, as was the case in the rest of Europe. This lack of issues is understood in a context in which entities brought forward their issues to the last part of 2018 as a result both of the entry into force on 1 January 2019 of the new European securitisations regulation, which introduces new requirements relating to these types of issues[29], and the announcement by the ECB of a new round of long-term financing for banks as from September (TLTRO III), which will contribute towards covering banks' financing needs. Issues by Spanish companies abroad grew by 1.3% in the first quarter to 27.59 billion euros, with long-term issues recording the largest gains (up 14%). In equity markets, there was no IPO, although several companies are preparing one for the coming months. The only particularly noteworthy operation was the capital increase by Cellnex Telecom for an amount of close to 1.2 billion euros.

- In the first four months of the year, average trading of the electronic market stood at 1.87 billion euros, 26% down on one year earlier and also below the average for 2018 (2.29 billion euros) and for recent years. The fragmentation of the trading of Spanish shares, which has recorded some ups and downs, continued in the first quarter of the year: the market share of trading venues other than the home market amounted to almost 45% of trading (lit plus dark), its all-time high[30]. However, the preliminary data for April show a partial reversal of this trend. At the start of May, the CNMV authorised a new multilateral trading facility (MTF) located in Spain (Dowgate Madrid), which specialises in the trading of sovereign debt and derivatives.

- The Ibex 35 liquidity index (assessed through the bid-ask spread) remained at satisfactory levels, but there was an increase in the size of the spread despite the falls in market volatility levels. The bid-ask spread of the sovereign bond rose over most of the period, with the largest increases coinciding with the electoral period in April.

- The spread in interest rates between loans to euro area companies and to Spanish companies fell slightly for loans of under 1 million euros, to stand in negative terrain

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[28] Some SMEs are taking advantage of the good financial conditions and low interest rates to finance their investments or refinance at a lower cost.

[29] Securitisations will no longer count as liquid assets in banks' liquidity coverage ratio (LCR). Only simple, transparent and standardised (STS) securitisations will be calculated in this ratio, but the delay in defining their technical standards has delayed their issuance (according to AFME, the first issue in Europe in accordance with these criteria took place in March.

[30] It should be noted that the competing trading venues and markets of BME account for approximately 60% of dark trading and that their market share, taking into account only lit trading, stood at 35.9% in the first quarter of the year.

in March (-2 bp), around the lowest level since 2008, while it rose for loans of a higher amount (to 42 bp in March, 25 bp in December), thus reaching its highest level since the second half of 2016.

Contagion risk: yellow

- The correlations between the daily returns of the different assets of the Spanish economy were fairly stable during the first quarter of the year. However, these fell across the board in April, leading the median to stand at around 0.15 at the start of May, its lowest value for over a decade (Figure 31). These low correlation levels may be partially explained by differences in exposures to risk factors between fixed-income and equity assets. For example, the postponement of the normalisation of the ECB's monetary policy has had an upward effect on the price of the sovereign bond, while it might have had a certain downward effect on the share prices of financial institutions as it makes it difficult for them to increase their profitability.
- The correlation between the yield on the Spanish sovereign bond and that of other euro area countries stood at high levels in the first four months of 2019, although some difference can be seen between two groups of countries. While the correlation between the yield on the Spanish sovereign bond and that of the core countries remained stable from the start of the year and stood at 0.76 at the start of May (same value as that recorded in January), the correlation with the yield on the sovereign debt of peripheral countries rose from 0.65 to 0.93 between January and May (Figure 32).
- The high overall levels of correlation may be explained by the fall recorded by yields on public debt in all euro area economies as a result of the expectation that the ECB's accommodative monetary policy will continue for longer than expected, the environment of an economic slowdown and reduced uncertainty relating to Italian public finances. The aforementioned difference between the correlation with core countries and peripheral countries is due to the fact that the fall in yields has been sharper in the latter group of countries.

Market risk: yellow

Figure 3: Stock market prices

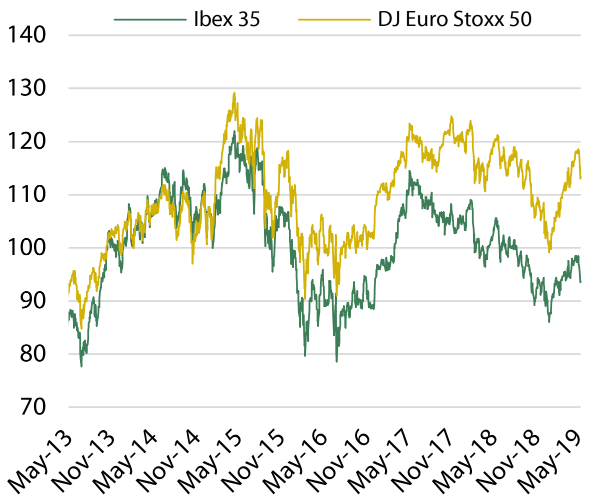


Figure 4: Price-earnings ratio (P/E)

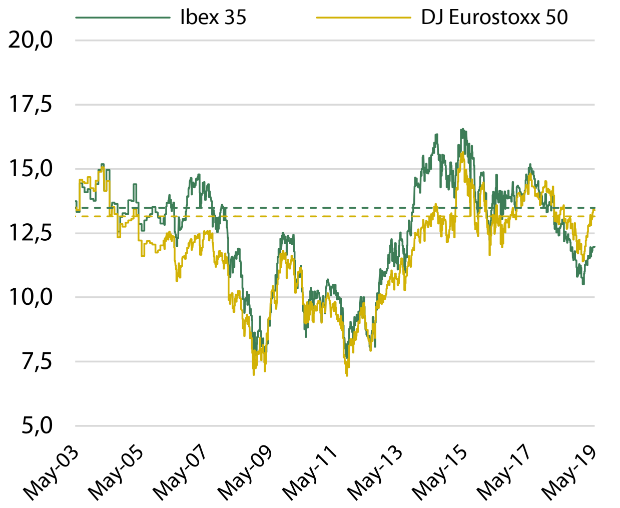


Figure 5: Short-term interest rates (3m)

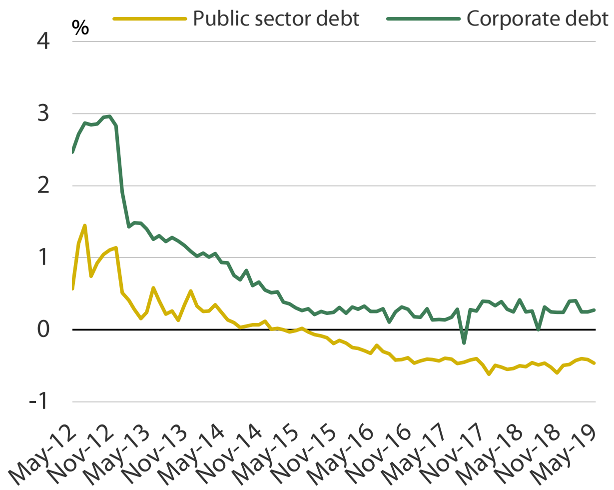


Figure 6: Long-term interest rates (10y)

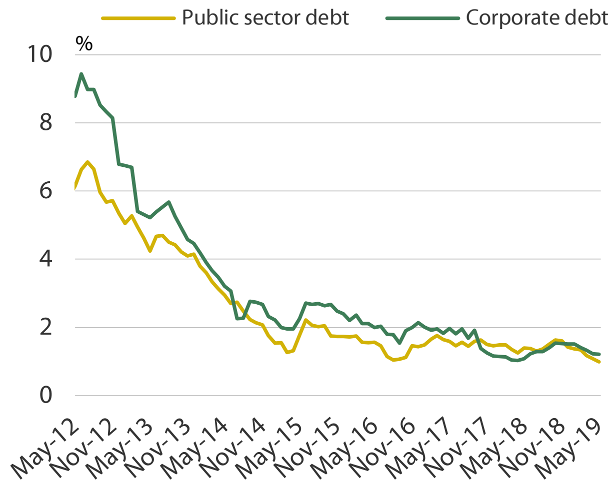
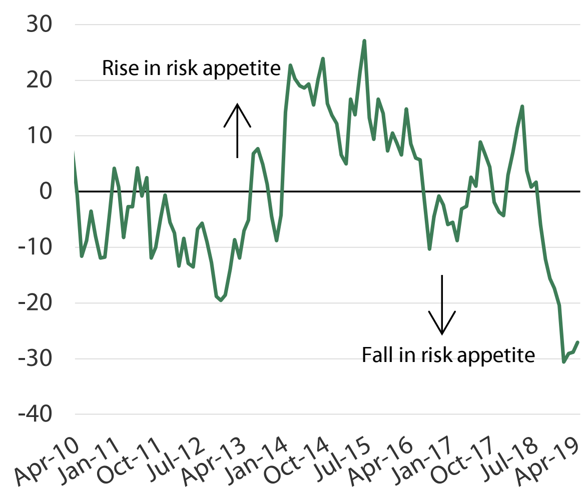


Figure 7: Oil price

Figure 8: Risk appetite (State Street)



Credit risk: green

Figure 9: Financing of non-financial sector

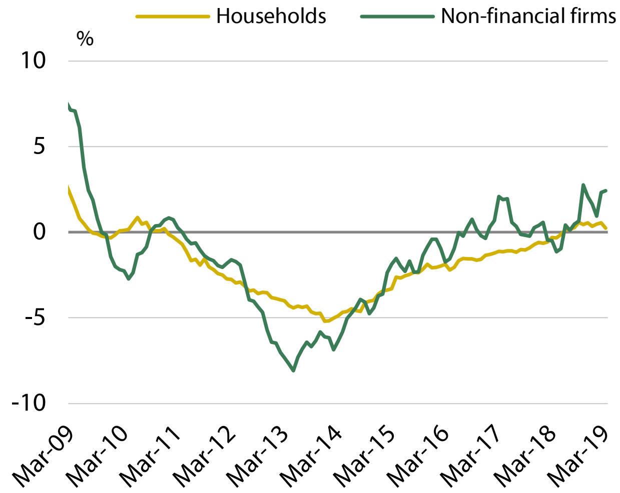


Figure 10: NPL rate and unemployment rate

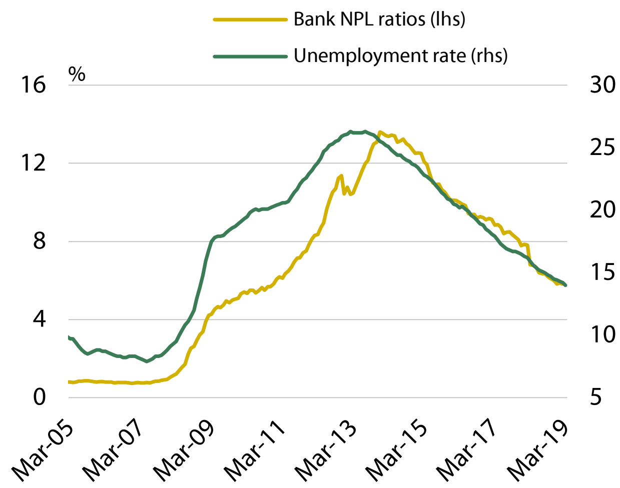


Figure 11: 10-year government debt risk premium (spread with Germany)

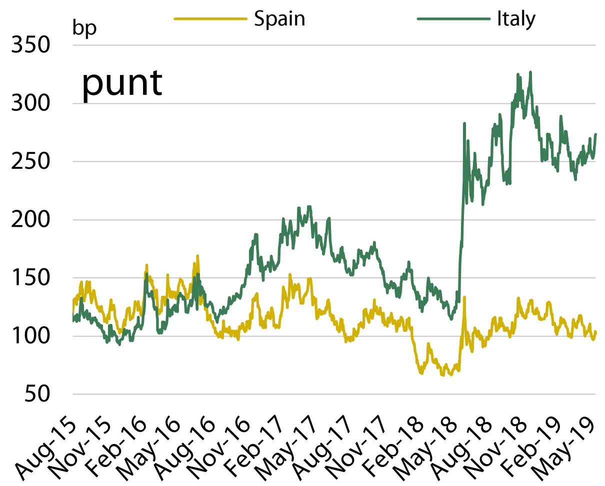


Figure 12: Private debt risk premium (5-year CDS)

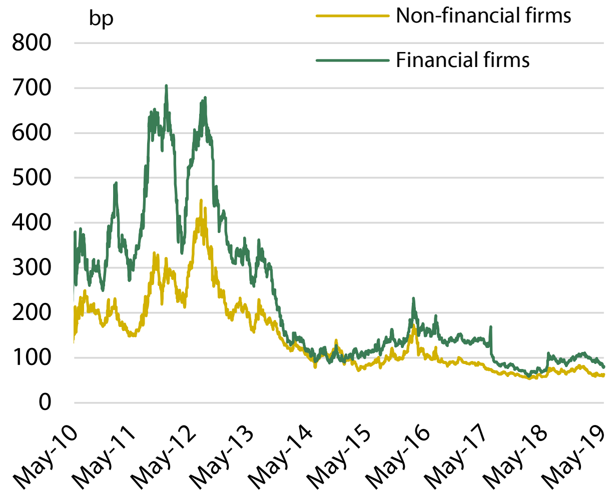


Figure 13: House prices (year-on-year change)

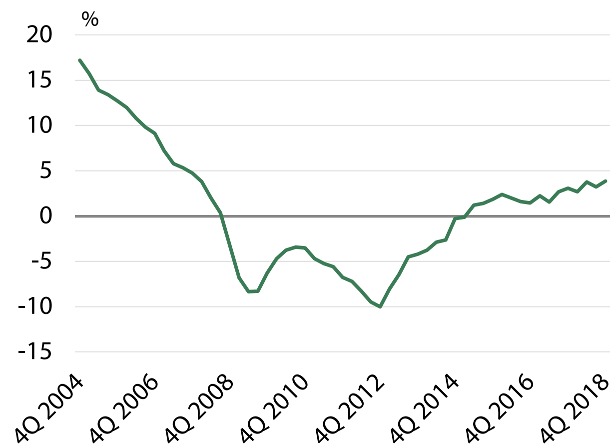
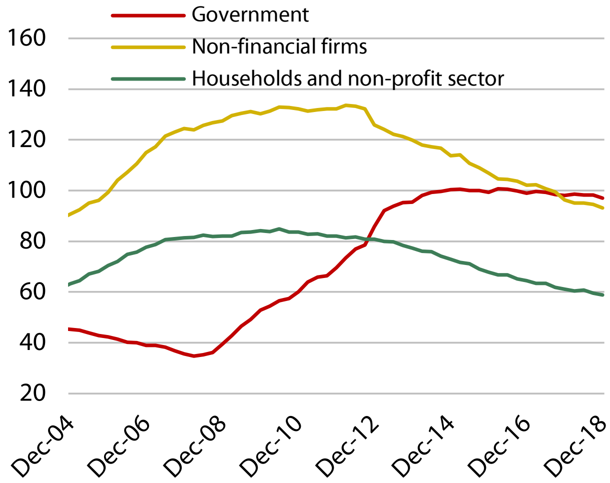
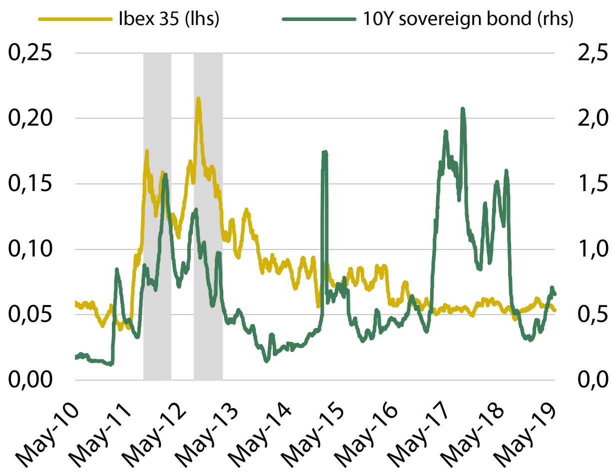


Figure 14: Borrowing (% GDP)



Liquidity, financing and fragmentation risk: yellow

Figure 15: Liquidity (bid-ask spread, %)



The shaded area corresponds to the period with bans on short selling.

Figure 16: Volatility (1m moving average)

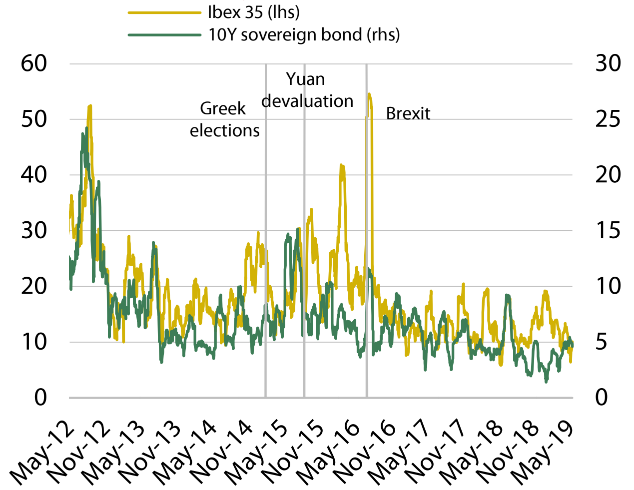


Figure 17: SIBE trading (1m moving average)

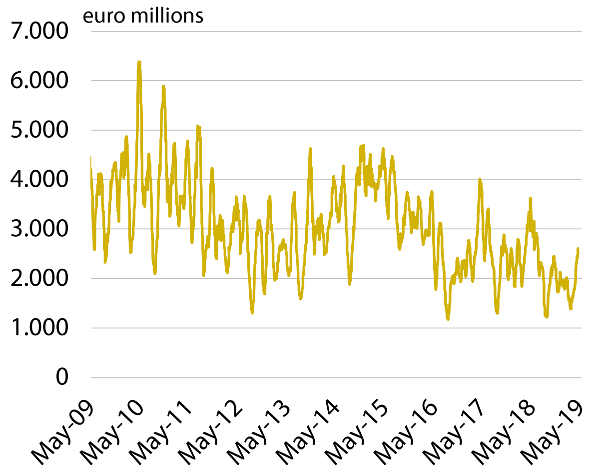


Figure 18: Interbank spread (LIBOR-OIS)

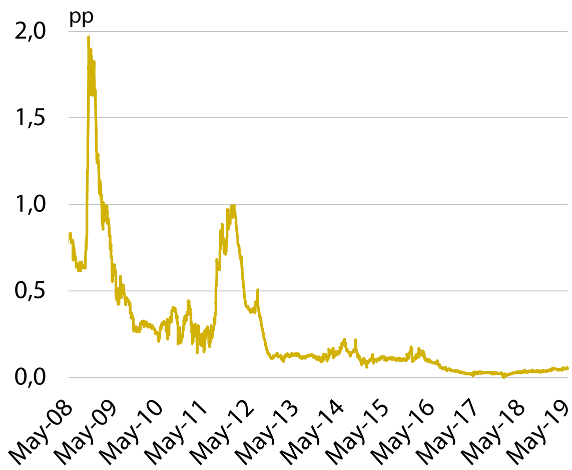


Figure 19: Spain-EU spread on corporate lending rates

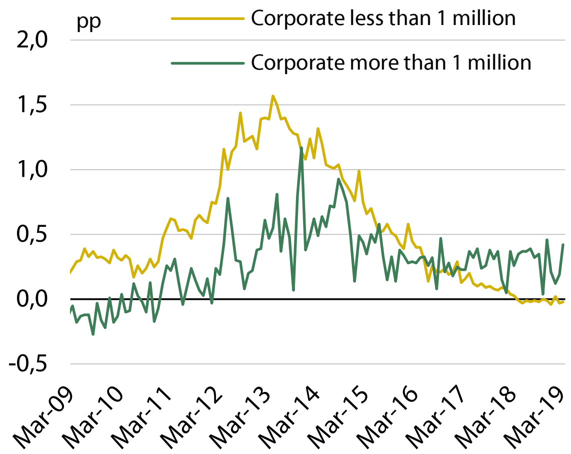
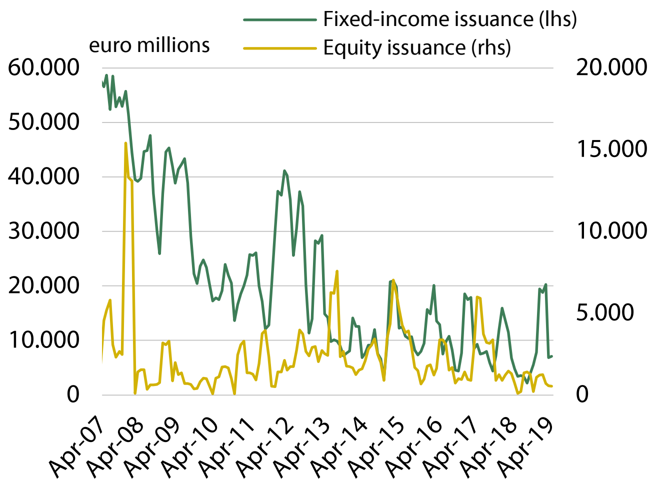


Figure 20: Issues (3m moving average)



Macro-economic risk: yellow

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

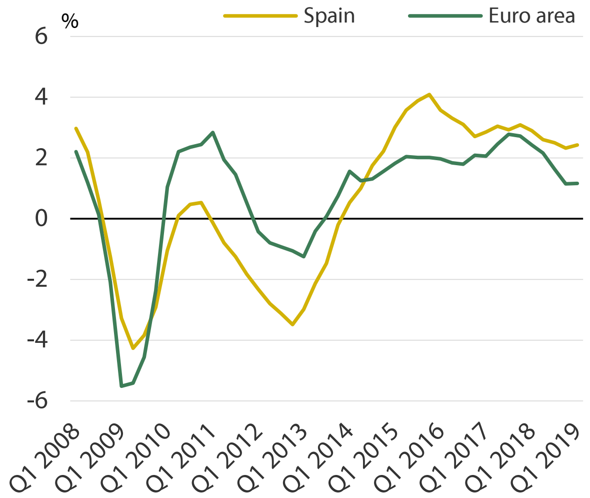


Figure 22: HCPI and core CPI (year-on-year change)

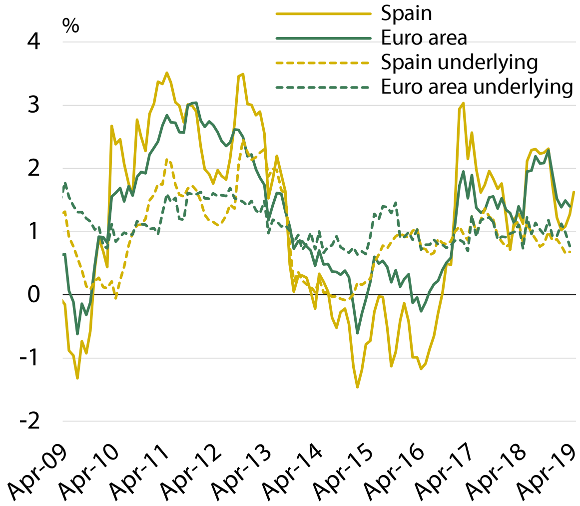


Figure 23: Employment (year-on-year change)

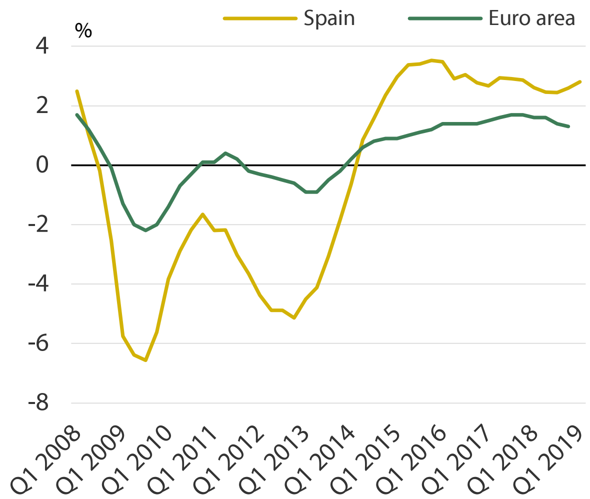
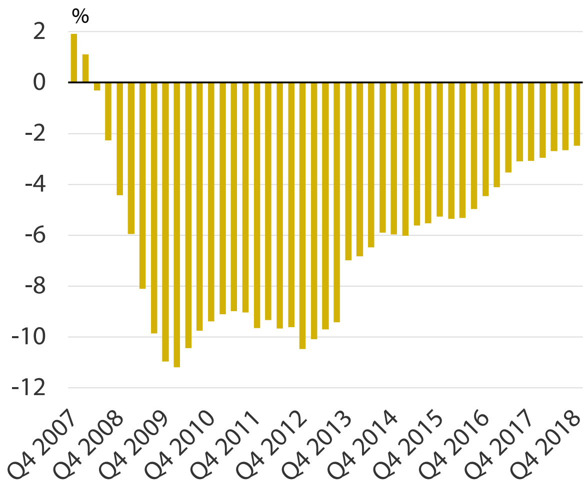


Figure 24: Government balance (% GDP)



Data accumulated over four quarters.

Figure 25: Exchange rates

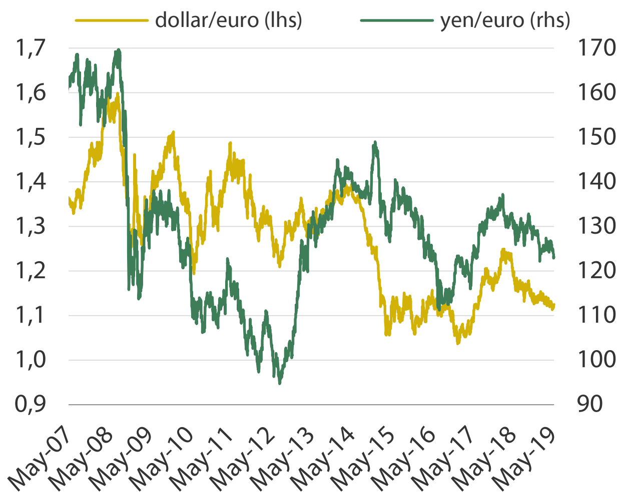
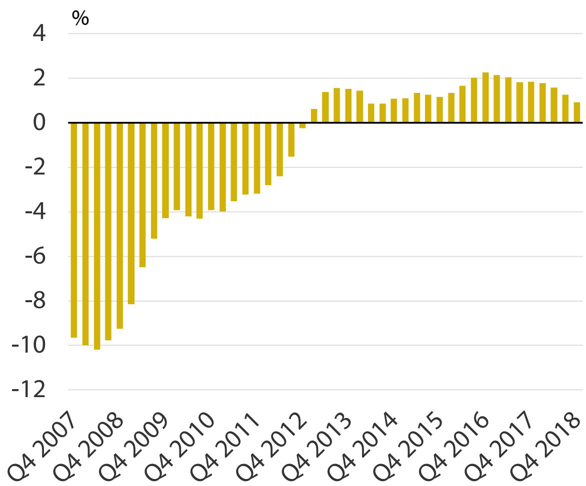
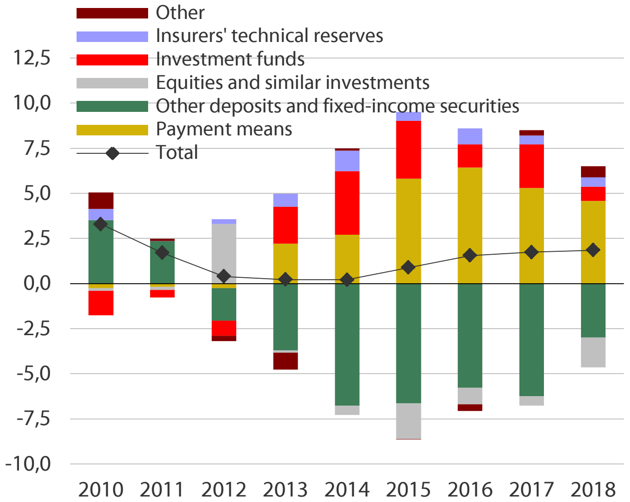


Figure 26: Current-account balance (% GDP)



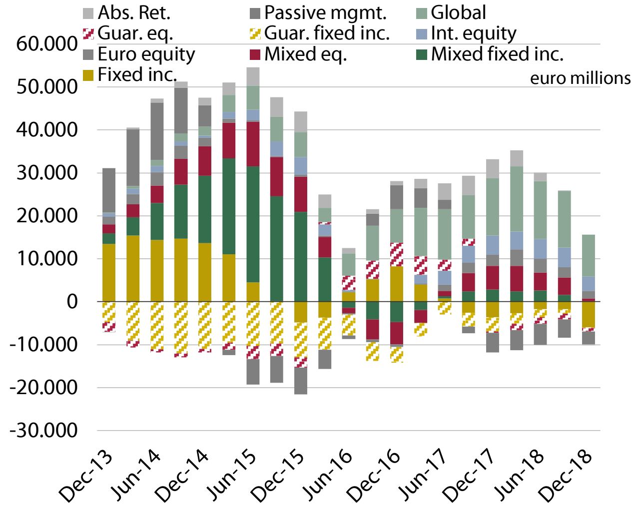
Investors

Figure 27: Households: net financial asset acquisitions (% GDP)



Data accumulated over four quarters.

Figure 28: Net subscriptions to investment funds



Data accumulated over four quarters (million euros).

Figure 29: Households: savings (% disposable income)

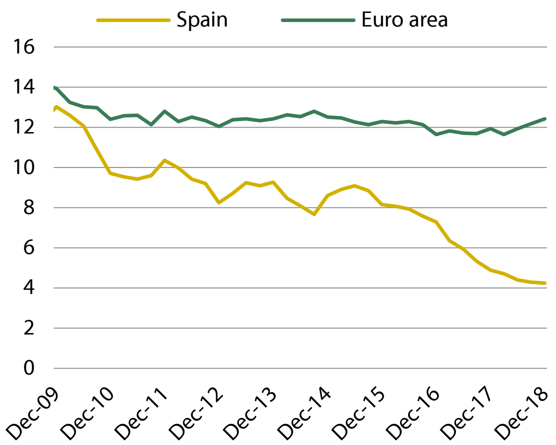
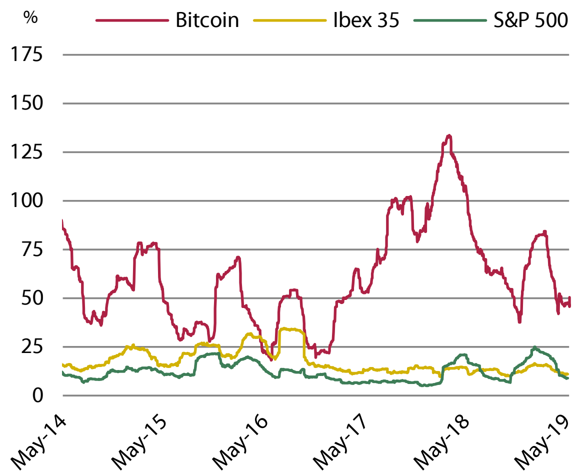


Figure 30: Bitcoin volatility



Contagion risk: yellow

Figure 31: Correlations between asset classes

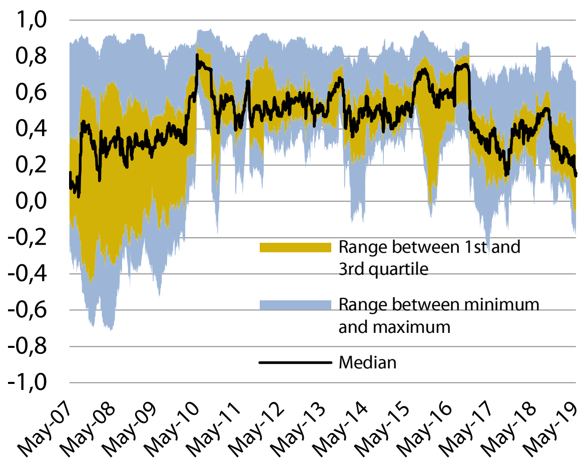
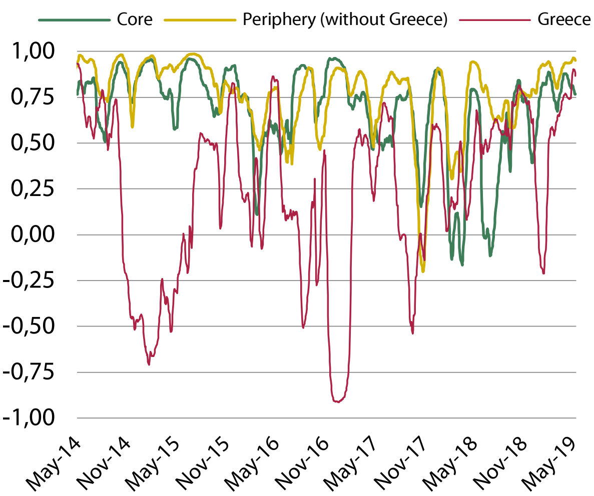
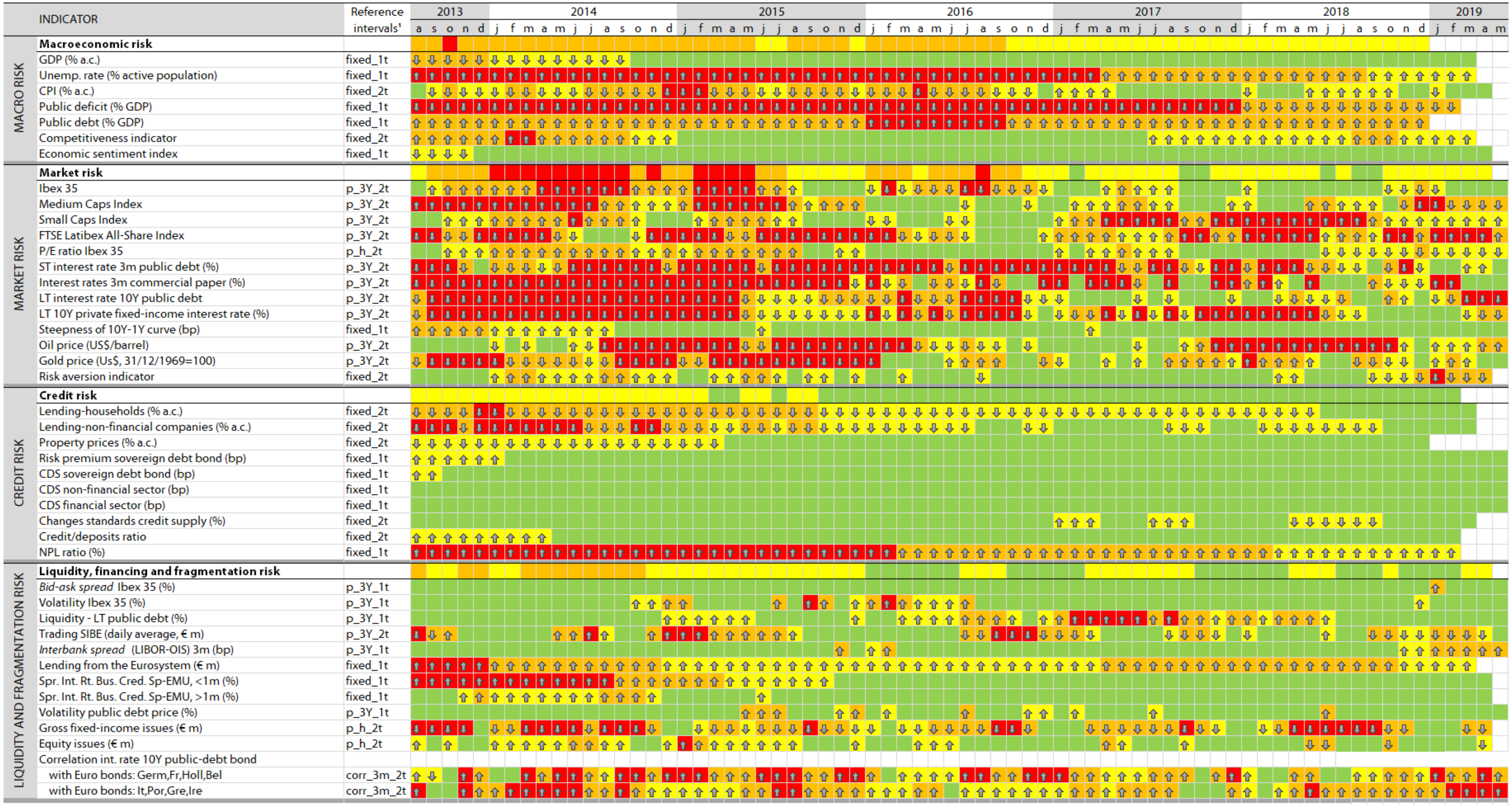


Figure 32: Correlation between the yield on the Spanish and European 10Y bonds



Heat map: risk categories



(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.

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 (equity income, 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 indices), 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 14 (January (1)), 23-41 or CNMV Working Paper 60 (http://www.cnmv.es/portal/Publicaciones/monografias.aspx).

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 (see page 13) includes 43 indicators[31], 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

[31] Since June 2017, the heat map includes an additional indicator: the bid-ask spread of the ten-year sovereign bond.

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 detailed information on the methodology and the analysis of these maps, see the article "Identification of vulnerabilities in the Spanish financial system: an application of heat maps", published in the Quarterly Bulletin of the CNMV corresponding to the first quarter of 2015.

Bitcoin Historical volatility (Figure 30): Annualised standard deviation of the daily changes in prices in 90-day windows.

Contagion risk: The indicators making up this block are of somewhat greater 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 European 10Y bond (Figure 32). The correlation is calculated using daily data in three-month windows. The countries of the core group are Germany, France, Holland and Belgium, and the peripheral countries are Portugal, Italy, Greece and Ireland.