CNMV
Comisión
Nacional
del Mercado
de Valores

Financial Stability Note

No. 8 October 2018

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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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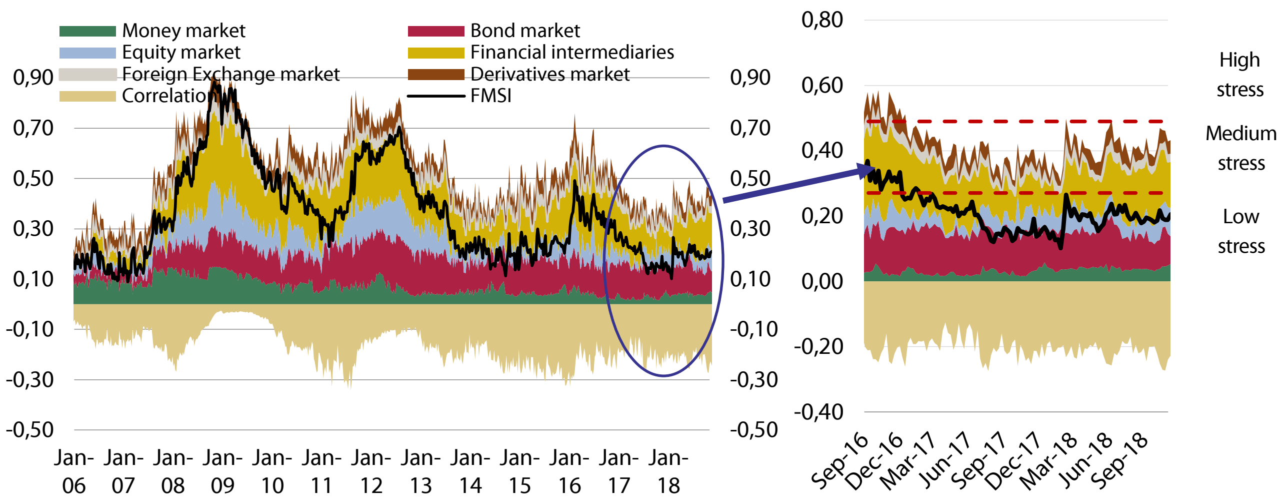
Summary

✓ Since publication of the last financial stability note, Spanish financial markets stress[1] level has remained close to 0.2 and therefore within the range consistent with a low stress level. This should be considered in the context of a year, 2018, in which there have been slight upturns, such as that recorded in February (to 0.27), due to the turmoil in US markets or, more recently, those of June and October (to 0.24 and 0.22, respectively), which were related to doubts about public finances in Italy and, to a lesser extent, other sources of uncertainty (the so-called "trade war", tensions in emerging economies, regulatory uncertainty etc.). By segment, the highest stress levels were recorded in the bond market and the financial intermediary segment, with the latter affected by the fall in bank share prices.

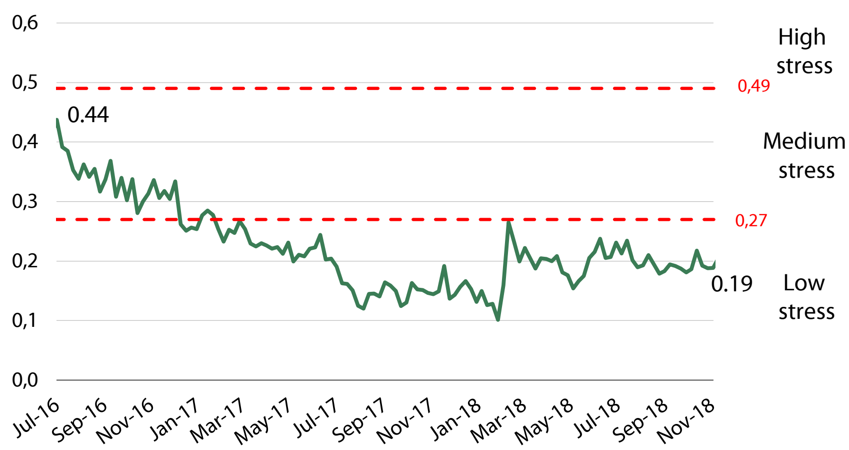
Spanish financial markets stress index

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).



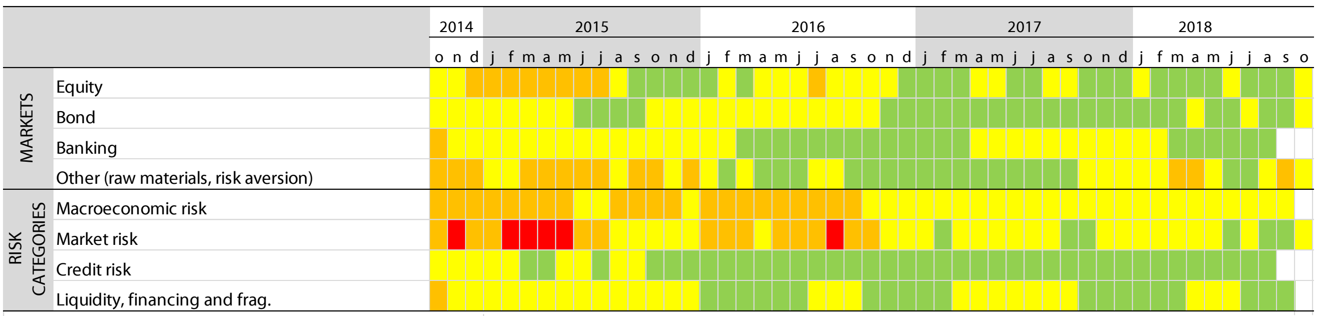
[1] The closing date of the note is 31 October, except for the stress index, which includes information to 2 November and other specific information.

- ✓ The macroeconomic performance of Spain remains strong, with GDP growth that remains at 2.5%, which is the same as the growth rate for employment. However, there has been a certain deceleration in economic activity – although less intense than in the euro area – and therefore the gap in growth in favour of Spain has increased to 0.8 percentage points. There are several sources of uncertainty about the Spanish economy. The most significant ones are the restrictions that might affect – and which are in fact already affecting some areas – world trade, the difficulties faced by some emerging economies and uncertainties relating to both the European and the domestic political context. It is also worth noting the need to make progress in the economy's process of fiscal consolidation, particularly at a time at which the shift in monetary policy is drawing closer.

- ✓ This context of multiple uncertainties has been reflected in the performance of domestic financial markets over recent months. Stock prices – which had stabilised in the second quarter of the year following losses in the first few months of the year – fell once again between July and October. The Ibex 35 has recorded losses over the year that are similar to those of the European indices with the least favourable performance (Ibex 35 -11.5%, Dax 30 -11.4%, Mib - 12.8%). However, investors have shown greater discrimination between companies depending on their expectations and risks and, therefore, the falls have not affected every sector. Companies in the oil and energy, technology and pharmacy sectors have recorded gains, while price falls have been recorded by banks – affected by economic, financial, political and regulatory uncertainties – real estate companies and companies in the consumer goods and services sectors.

- ✓ In fixed-income markets, short-term interest rates have remained at very low levels, in line with the monetary policy stance adopted by the ECB. Long-term rates, which fell in the first few months of the year as a result of the improvement in the Spanish sovereign debt credit rating, have recorded slight and temporary upturns associated with the debt crisis in Italy. With regard to the latest episode of uncertainty of this crisis, which took place in October, the knock-on effect on the risk premium of Spanish debt was very limited. The most significant financial risks (market and liquidity risk) remain associated with certain segments of the debt market.

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 31 October.

Sources of risk

Macroeconomic environment

- The growth that began in Spain in 2014 continued in the third quarter of 2018, although a slight slowdown over the year has been noted (Figure 21). Spain enjoyed GDP growth of 2.5% in year-on-year terms (0.6% quarterly). These figures are above those recorded in the euro area, which grew by 1.7% year-on year and by 0.2% in quarterly terms. Employment levels continue to grow at a good pace (Figure 23), specifically by 2.5% in each one of the two middle quarters of the year, which led to the employment rate [2] falling to 14.6% of the active population at the end of September, 0.7 percentage points below the figure for the end of the second quarter. Inflation stood at 2.3% year-on-year at the end of October, a figure that has remained practically constant since May. The data to September show that the group with the highest positive impact on the index was that corresponding to housing [3], as a consequence of rising energy prices, particularly electricity prices. The year-on year core inflation rate, which does not include energy products and unprocessed food, stood at 0.8% at the end of the third quarter, 0.2 percentage points down on September 2017.

- The latest data for public sector finances show an improvement in 2018, with a reduction in the public deficit over the first six months of 0.4 percentage points compared with the same period of the previous year, to stand at 1.8% of GDP. In turn, the combined deficit of the Central Government, regional governments and the Social Security system stood at 1.95% between January and August, 0.4 percentage points below the figure recorded in the same period of 2017[4]. The 2019 Budget Plan maintains the deficit path announced a few months ago of 2.7% for this year and 1.8% for 2019. The level of debt, which remains one of the most significant challenges for the Spanish economy, closed the second quarter of 2018 at 98.7% of GDP, one percentage point below the figure for June 2017.

- According to the latest IMF forecasts for the Spanish economy published in October, Spain will grow this year by 2.7% and by 2.2% in 2019, following a downward revision for 2018 of 0.1 percentage points compared with the July forecasts. These figures are above the expected rate for the euro area, which the IMF has set at 2% (0.2% less than the July forecast) and 1.9%, respectively. The estimates by the Spanish Government within the framework of the 2019 Budget Plan show a very similar pattern, with

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

[3] This group mainly includes the rental price of housing and the price of the corresponding implicit services, such as electricity, gas etc.

[4] This figure does not include the balance of local authorities or the amount of the aid given to banks. By tier of government, there was a noteworthy fall, as in 2017, in the deficit of the Central Government, which stood at 1.66% of GDP compared with 1.83% in the period between January and August 2017. For their part, the regional governments recorded a surplus of 0.14% of GDP and the Social Security Funds a deficit of 0.43% of GDP, which is 25.6% lower than that recorded in the same period of the previous year as a result, above all, of the 5.6% increase in contributions.

expected growth of 2.6% for this year and 2.3% for 2019[5]. The Spanish economy faces significant challenges relating to the job market, as the unemployment rate remains very high despite the significant fall over recent years, to the fiscal consolidation process – government debt has stood at levels of around 100% of GDP since 2014 – and the consequences of an ageing population. In addition, it is worth mentioning the risks for Spanish companies that perform a large part of their operations abroad, which might be affected by the hardening of financial conditions in some emerging countries.

Low interest rate environment

- Interest rates remain at very low levels in the euro area. Even though the ECB reiterated its commitment to maintain rates at 0% at least through the summer of 2019, the first shift in its monetary policy was the confirmation that it would end its debt purchase programme in December of this year as planned. The Federal Reserve has already done the same and now continues with the tightening of its monetary policy[6]. Although the European economy shows greater signs of weakness in growth as a result of latent uncertainties, the realised[7] and forecast inflation figures suggests that core inflation will grow over the coming months and therefore no delays are expected in the process of raising interest rates. In addition, higher wages and the maintenance of high energy prices might strengthen inflationary pressures. In this context, it is reasonable to think that interest rates are close to recording their first hikes, as shown by the growing trend of the Euribor. It is therefore necessary to consider what the most significant effects of this increase would be, particularly in an environment of a slowdown in growth and, for some economic agents, a high level of debt.

- The environment of such low returns on many available investment products continues to have an impact on the decision-making of investors, who, as has been the case for five or six years, continue accepting higher-risk assets in order to obtain higher returns than those offered by more traditional products, such as bank deposits. Accordingly, the latest data from the Financial Accounts corresponding to the second quarter of the year show that Spanish households continue transferring funds from term deposits and debt securities towards more liquid assets (cash and sight deposits) and investment funds[8]. In the specific case of the investment fund industry, which has undergone significant growth over recent years, it can clearly be seen that investors have modified their preferences towards assets that might give them higher returns.

[5] The forecasts of other important institutions also reflect this slowdown in the rate of growth. At the end of September, the Bank of Spain forecast growth of 2.6% for this year and 2.2% for next year, 0.1 and 0.2 percentage points below, respectively, their June estimates. In November, the European Commission presented expected growth figures that are similar to those of the Bank of Spain.

[6] The Federal Reserve raised its rates in September to place them in the range of 2-2.25%. This is the third rate rise in 2018 and an additional hike is expected before the end of the year.

[7] Euro area inflation stood at 2.1% year-on-year in September and the preliminary data place it at 2.2% in October, above the ECB's target (below, but close to, 2%). The core inflation rates were 0.9% and 1.1%, respectively.

[8] The outflow of funds from term deposits and fixed-income securities amounted to 4.3% of GDP between the second quarter of 2017 and 2018, while investment in means of payment (cash and sight deposits) and investment funds accounted for 5% and 2.1% of GDP, respectively, in the same period.

Accordingly, the categories which recorded the greatest growth between June 2017 and June 2018 were the higher risk categories (global and equity funds, both international and euro), with inflows of over 21 billion euros, while the more conservative categories[9] recorded aggregate net outflows of 10 billion euros (Figure 28).

- The banking sector continues to be hampered by the low interest rate environment, the still high volume of non-performing assets and the negative impact of currency depreciations in those banks with a presence in emerging markets[10]. Nevertheless, the information from the income statement for the first half of the year shows an improvement as a result of the reduction in impairment of financial assets and other assets, in a context of growing consumer lending. The sector's solvency conditions are favourable, although the Bank of Spain has stressed the need for banks to continue strengthening their capital. The banking sector has faced regulatory uncertainties that might potentially have an upward impact on costs. Looking ahead, the principal challenges remain the need to improve their efficiency (aggregate costs have hardly fallen despite the closure of branches and the reduction in the workforce), which will require progress in the implementation of online banking, and the growing competition from new operators with a high level of technological development (FinTech).

Sources of political uncertainty

- The most important uncertainties at an international level are the swapping of protectionist trade measures, which have intensified worldwide over recent months. The U.S. Administration, which in June had already imposed tariffs on 50 billion dollars of Chinese products, announced in September that it would apply a rate of 10% on 200 billion dollars' worth of Chinese imports. That rate could rise to 25% in 2019 if the two countries do not reach a trade agreement. For its part, China activated tariffs on 60 billion dollars' worth of goods coming from the US. The possible prolongation or escalation of protectionism might have a negative impact on investment decisions and global economic activity.

- In Europe, the political uncertainty in Italy remains one of the most significant risks for the economic and financial environment. Specifically, the possibility that the Italian Government might relax its public deficit target for 2019, in a context of very low GDP growth rates, has had a negative impact on the perception of Italy's credit risk. Accordingly, the risk premium on ten-year Italian government bonds has risen by close to 150 basis points (bp) so far in 2018, with two significant upturns: one in May – when it reached 283 bp – and another in the middle of October – when it stood at 325 bp. In the following days, the risk premium on the Italian bond fell, coinciding with the

[9] Fixed-income funds, guaranteed equity funds, guaranteed fixed-income funds and passively-managed funds.

[10] In the specific case of the main banks with a presence in Argentina, accounting adjustments have been made in their accounts as a result of the hyperinflation suffered by this economy.

announcements of two credit rating agencies[11], and stood at 305 bp at the end of October. The contagion to the risk premium on Spanish debt was somewhat higher in the episode of uncertainty in May, but was much more limited in October (see the headings on Credit Risk and Contagion Risk).

- For its part, the development of the Brexit negotiations is another of the main political risks at a European level. The United Kingdom is expected to leave the European Union in March 2019, at which time a transition period will commence that will continue until at least the end of 2020. Once this period ends, the relationship between the two economies will be determined by the results of said negotiations. The possibility of no deal being agreed[12] before the UK leaves cannot be ruled out, which would have a negative impact on financial markets and the real economy.

- In Spain, the main sources of political risk are related to tensions in Catalonia and the context of high political fragmentation.

[11] On 19 October, Moody's downgraded the credit rating of Italy's public debt by one level to Baa3, with a stable outlook. On 26 October, Standard & Poor's maintained its BBB rating, changing the outlook from stable to negative.

[12] In mid-November, the representatives of the EU and the UK Government agreed a draft withdrawal agreement that needs to be ratified by both parties in the future.

Risk categories

Market risk: yellow

- The uncertainty that spread through international equity markets in the first half of the year worsened in the second half and peaked in October, when every international market fell strongly as a result of the fears of a slowdown in global growth[13] and the difficulties of some emerging economies. Other sources of uncertainty persist relating to the effects of the trade war between the United States and China and the possible consequences of successive rate hikes by the Federal Reserve, which are raising the cost of corporate financing in a context of lower growth, and which have strengthened the dollar and exacerbated the unfavourable situation of some emerging economies[14] with a high level of dollar-denominated debt.

- In this context, US markets[15] – which continue to benefit from the positive impact of the tax reform – performed positively in the year, although they have corrected a large part of the accumulated gains. In the case of the NASDAQ technology index, many investors continue to warn that technology and Internet companies are overvalued. In Europe, the falls were higher[16], as the possible effects of increased tariffs on manufacturing and exporting companies were compounded by other factors, such as the slowdown in economic growth in the third quarter[17], the problems of the Italian Government with the European Commission due to its draft budget, uncertainties relating to the result of the final Brexit deal and the prospects of a tightening of monetary policy.[18]

- In Spain, the falls in the Ibex 35 intensified, with it recording a cumulative loss of over 7% between July and October, in line with the performance of the main European markets. It has accumulated losses of 11.5% this year and stands at its lowest level since the last quarter of 2016. The best performance among Spanish shares corresponds to those from the technology and telecommunications sector[19], while those from the insurance and pharmacy sectors and small cap companies have hardly recorded any falls, although between July and October small cap companies lost the

[13] In its October World Economic Outlook report, the IMF revised down expected global growth for this year and 2019 to 3.7%, 0.2 percentage points lower than forecast in April. At the same time, it indicated that expansion has become less balanced and may have peaked in some major economies.

[14] Particularly noteworthy are the economies of Argentina and Turkey, which have experienced serious difficulties and a sharp depreciation of their currencies over the year.

[15] To October, the US Dow Jones, S&P 500 and NASDAQ indices recorded gains of 1.6%, 1.4% and 5.8%, respectively, compared with the 3.2% fall in the MSCI World Index.

[16] The main European indices fell between July and October, by 7% in the case of the German Dax 30, by 4.3% in the case of the French CaC 40 and by 5.8% in the case of the European Eurostoxx 50, and accumulated falls of 11.4%, 4.1% and 8.7%, respectively, over the year as a whole. Particularly noteworthy was the Italian Mib 30 index, which fell by 11.9% and 12.8%, respectively, in the same period.

[17] The GDP of the euro area grew by 1.7% in the third quarter, 0.2 percentage points lower than expected.

[18] Inflation in the euro area stood at 2.1% year-on-year in September and preliminary data place it at 2.2% in October, above the ECB's target.

[19] It has gained 1.9% in the year to date, with noteworthy growth recorded by Amadeus, whose capitalisation has exceeded 30 billion euros.

significant gains accumulated over the year[20] as a result of the prospect of a slowdown in the Spanish economy. On the other hand, the most negative performance corresponded to the consumer goods and services sectors and to real estate companies. In the case of financial institutions, the prospect of a shift in the ECB's monetary policy – which will contribute towards improving the sector's margins – was not enough to offset the uncertainties relating, firstly, to their exposure to Italian debt and to some emerging economies undergoing difficulties and, secondly, the consequences of a possible change in the sector's tax regime and the announcement in October of a judgement handed down by the Supreme Court which would require banks to bear the cost of stamp duty[21] on mortgages – which triggered significant falls in their share prices.

- The price-earnings (P/E) ratio fell from 12.1 in mid-July to 11.4[22] in October (its lowest level since the first half of 2013) due to the fall in share prices together with the maintenance of the expected growth of corporate earnings. Reported aggregate short positions at the end of October remained above 0.9% of total market capitalisation (Figure 3). As in recent quarters, particularly large short positions were recorded in Día, Cellnex Telecom and OHL. In the case of Dia, these positions fell by over 3.5% following the significant fall in its share price.

- The most significant market risk remains in fixed-income assets, especially in longer maturities and higher-risk assets. The prospect of a tightening of the ECB's monetary policy[23], in the context of economic slowdown and rising inflation, would put upward pressure on the yields required on debt, particularly in peripheral European countries and in longer-term bonds. As in the second quarter, Europe was subject to two opposing effects on its debt. On the one hand, continued uncertainties relating to the economic policy of the Italian Government in combination with the prospect of the end of the ECB accommodative policy and the upward pressure applied by the rate hike by the Federal Reserve[24], which resulted in a higher yield on government bonds of peripheral economies (between the 22 pb of Spain and the 74 pb of Italy). On the other hand, increasing falls on the stock markets have once again revealed the status of bonds as a safe haven, particularly those from the core European countries, whose yields have risen slightly (around 8 bp for German and French bonds), although they remain negative or close to zero for bonds of terms of up to five years. The volume of

[20] Between July and October share prices fell by 15.4%, with cumulative annual losses standing at 0.8%.

[21] In the first few days of November (after the closing date of this note), the Supreme Court decided that these expenses should be borne by the customer, but a few days later the government itself announced that it would modify the regulation so that the costs would be borne by banks.

[22] In the same period, the P/E ratio of the European Eurostoxx 50 and the US S&P 500 stock indices fell to 12.4 and 16.1, respectively, their lowest levels since the end of the first quarter of 2016.

[23] At the end of October, the ECB confirmed that the debt purchase programme would finalise as planned at the end of December. Since it was initiated, it has accumulated purchases for a value of 2.6 trillion euros. It also reiterated its commitment to maintain rates at 0% at least through the summer of 2019.

[24] See footnote 6.

Spanish Government bonds acquired by the ECB stood at 256.67 billion euros[25] at the end of October.

- Corporate bond yields also rose slightly, and away from their historic lows, as a result of the disappearance of the positive impact of the purchase programme, the prospect of a shift in monetary policy and the increase in sovereign risk. Although the ECB's first rate hike is expected in the second half of 2019, it is necessary to consider the consequences that this shift might have on the economic agents who are most indebted and most exposed to fixed-income assets and illiquid complex assets. The impact on higher-risk debt assets might be significant due to the higher risk premiums that might be demanded from these assets in a scenario of slowing economic growth and rising economic risks.

Credit risk: green

- The uncertainties present in the market between July and October had an impact on the sovereign risk premium and that of financial institutions, although the effect was more significant in the former. In contrast, the average risk premium of non-financial companies remained practically stable over these months. The risk premium on sovereign debt rose to a greater extent as it was affected by the forthcoming end of the ECB's public sector purchase programme, certain contagion from the problems in Italy and uncertainties about the draft General State Budget. The difference between the yield on the ten-year bonds in Spain and Germany – which had reached a high of 134 bp at the end of May due to uncertainties in Italy but had fallen in the summer months to levels of around 100 bp (Figure 11) - once again rose to 133 bp in mid-October (120 bp on the closing date of this note).

- The risk premiums of financial institutions followed a path similar to that of public debt (albeit of lower amounts) over the period, to the extent that they fell in the summer following the increase recorded after the episode of uncertainty in Italy, and then rose gradually after the summer without reaching the levels of the previous upturn. Despite the uncertainties that affect the financial sector (exposure to Italian public debt and to some emerging economies and regulatory[26] and fiscal uncertainties), the average risk premium of financial institutions ended October at 99 bp (103 bp at the end of June) as a result of expectations of a change in direction in monetary policy in an environment of rising inflation and the positive impact that this would have on the sector's margins. In the case of non-financial companies, although the ECB's purchase programme no longer has any effect, the average of the CDS spreads stood at 72 bp (76 bp at the end of June) due to the fact that the positive performance of their

[25] This amount accounts for 28.8% of the balance of long-term debt securities issued by the State.

[26] See previous section and footnote 20.

operations and the improvement in their balance sheets mitigated the effects of a hypothetical rate hike (Figure 12).

- The evolution of lending to non-financial sectors[27] of the economy is improving discreetly, although differences remain between households and companies. The balance of outstanding lending to households continues to grow slightly in annual rates thanks to the expansion of consumer loans – which rose in September by 6.9%, their highest rate since September 2008 – as well as a slight slowdown in the fall in mortgage loans (-1.6%). The falls in lending to non-financial companies are softening (-0.2% in September), although companies continue to take advantage of improvements in their balance sheets in order to deleverage. Similarly, large corporations continue to replace part of their traditional bank financing with debt issues, mostly performed abroad.

Liquidity, financing and fragmentation risk: green

- Fixed-income issues registered with the CNMV between July and October amounted to 19.03 billion euros, 34% down on the same period of 2017, with two significant issues of preferred shares aimed at institutional investors for a value of 1.25 billion euros. Issues by Spanish companies abroad also fell by 12.4% in the third quarter (to 19.88 billion euros) as a result of the fall in long-term debt issues, partially offset by the growth in commercial paper issues, which accounted for 64% of the total amount issued. Particularly noteworthy in equity markets were the secondary offering of Cepsa and the primary offering of the SOCIMI (Spanish REIT company) Árima Real Estate in the second half of October. The former was cancelled due to the market situation, while the size of the latter was reduced to one third of the initially planned amount (for an amount of 100 million euros).

- Average daily trading on the electronic market between July and October fell by 11.3% year-on-year to stand at 1.94 billion euros, which is below the average for 2018 as a whole of 2.36 billion euros (Figure 17). Similarly, trading in Spanish securities on trading venues other than the original market grew sharply in the third quarter to almost 40% of total trading subject to market or MTF rules (lit plus dark) – its historic high – compared with 32.5% in the second quarter and 36.5% and 31.7% for 2018[28] and 2017, respectively, as a whole. This growing movement of trading abroad might accelerate in the event that a tax on certain share transactions[29] (similar to that existing in France and Italy) is applied in Spain prior to the tax being established in a coordinated manner across the relevant European countries. In accordance with market transparency regulations, which include a series of waivers relating to orders at

[27] Source: Economic indicators of the Bank of Spain (data to 30 October).

[28] Data to September.

[29] The 2019 draft General State Budget provides for the introduction of a Financial Transactions Tax that will levy 0.2% on the purchase of Spanish shares executed by financial sector operators on shares issued in Spain with a market capitalisation of over 1 billion euros.

reference prices from another market and prearranged transactions[30], ESMA has published with certain regularity over this year the list of securities that have exceeded the trading threshold triggering the temporary suspension of the waivers, which have affected 18 securities admitted to trading on Spanish stock markets so far this year[31].

- The Ibex 35 liquidity index (assessed through the bid-ask spread) remains at satisfactory levels, improving slightly as 2018 progresses. The spread of the sovereign bond improved over most of the period, but rose once again in October at the same time as the increase in its risk premium.

- The spread in interest rates between loans to euro area companies and Spanish companies remains at around zero for loans of under 1 million euros – remaining at its lowest level since the end of 2007 – while it has risen once again for loans of a higher amount.

Contagion risk: yellow

- The correlation between different types of Spanish assets, which had remained stable during the middle months of the year, fell across the board as from September (see Figure 31). The median value of the correlations, which had stood at around 0.5 in the third quarter, fell to close to 0.3 at the end of October, well below the average of 0.5 recorded over the last decade. The minimum and maximum values of the correlations recorded similar falls over the same period. This decline in correlation is compatible with greater investor discrimination between types of entities and types of assets, which would explain why there were no widespread asset price decreases during these times of turbulence. It should be noted that lower levels of correlation between the different asset types allow a higher level of diversification.

- The correlation between the yield on Spanish Government bonds and those of other peripheral countries (excluding Greece) remained stable at close to 0.7 during the second half of the year. In contrast, its correlation with the yield on sovereign bonds of core countries – which started from negative values as a result of the episode of political uncertainty following the Italian elections at the end of May (see the previous stability note) – rose in the third quarter and stood at levels higher than 0.7 in October. Therefore, the Spanish Government bond has not recorded movements in the spread similar to those of the sovereign bonds of the peripheral countries and different from the core countries, as was the case in previous episodes of uncertainty of the European sovereign debt crisis.

[30] Regulated under Article 4.1 of MiFIR, which indicates that the waivers may be temporarily suspended if any of the established trading limits (double volume cap) are exceeded so as not to hinder price formation.

[31] See the CNMV communications on the transparency regime www.cnmv.es/Portal/MiFIDII_MiFIR/Mercados-Transparencia.aspx

Market risk: yellow

Figure 3: Short selling

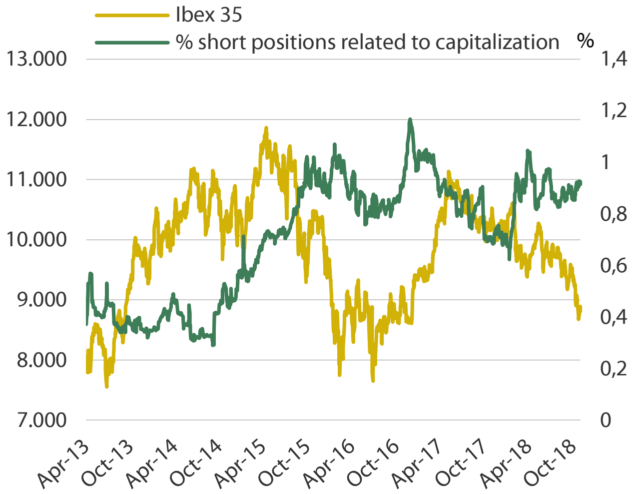


Figure 4: Price-earnings ratio (P/E)

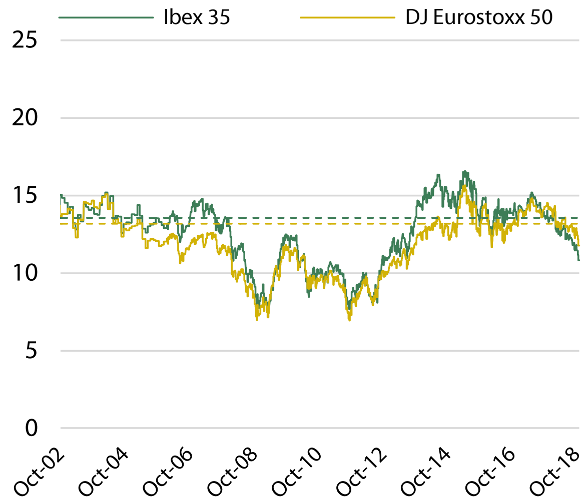


Figure 5: Short-term interest rates (3m)

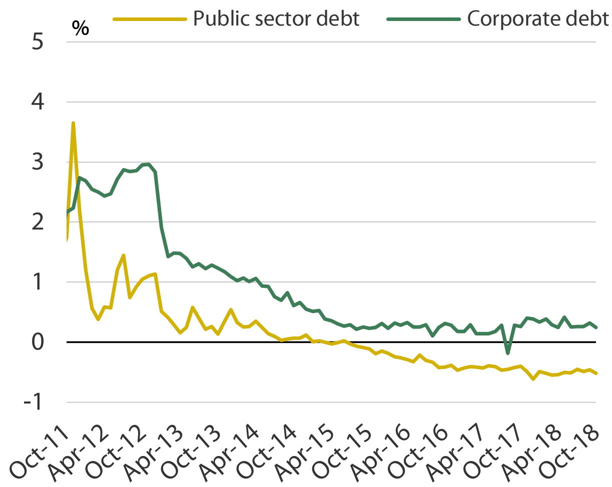


Figure 6: Long-term interest rates (10y)

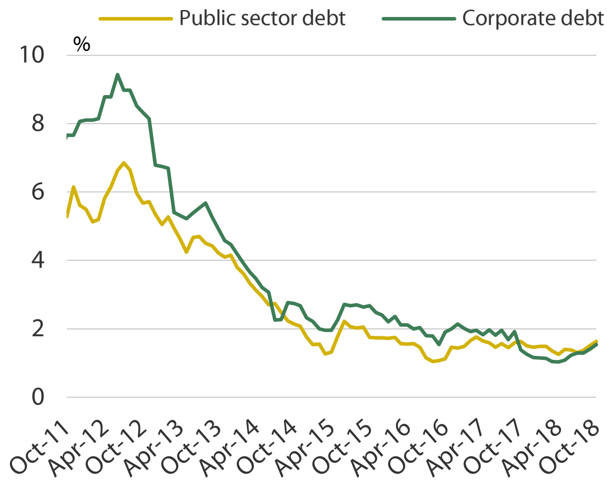


Figure 7: Oil price

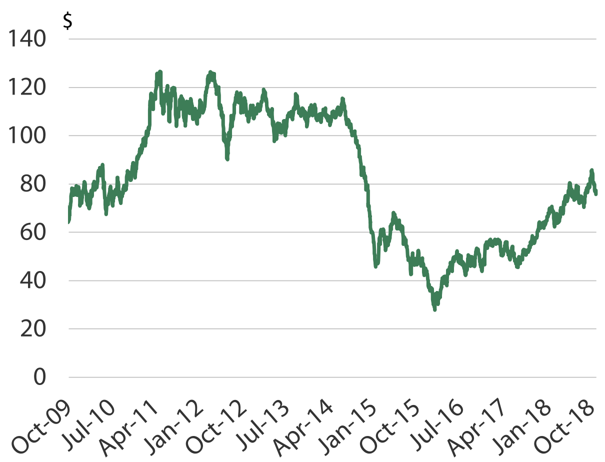
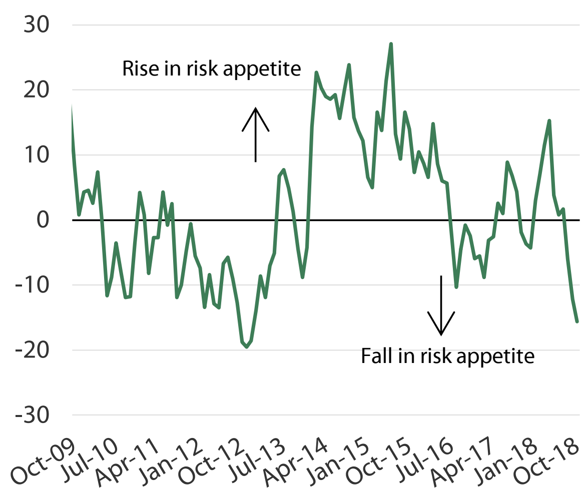


Figure 8: Risk appetite (State Street)



Credit risk: green

Figure 9: Financing of non-financial sector

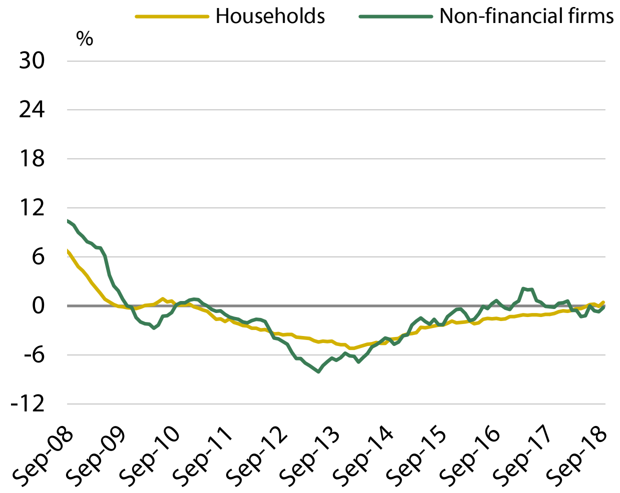


Figure 10: NPL rate and unemployment rate

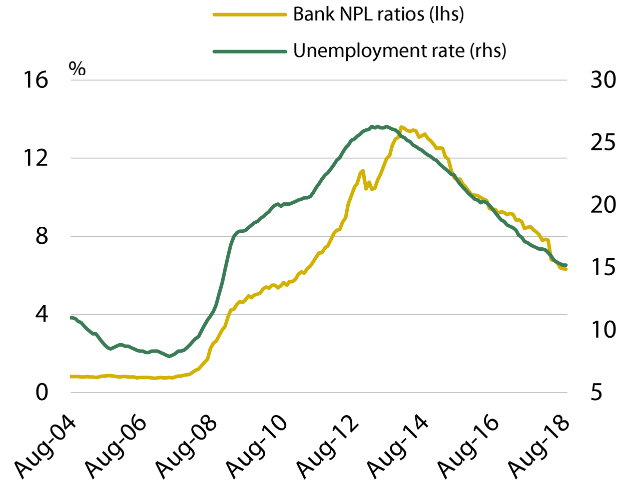


Figure 11: 10-year government debt risk premium (spread with Germany)

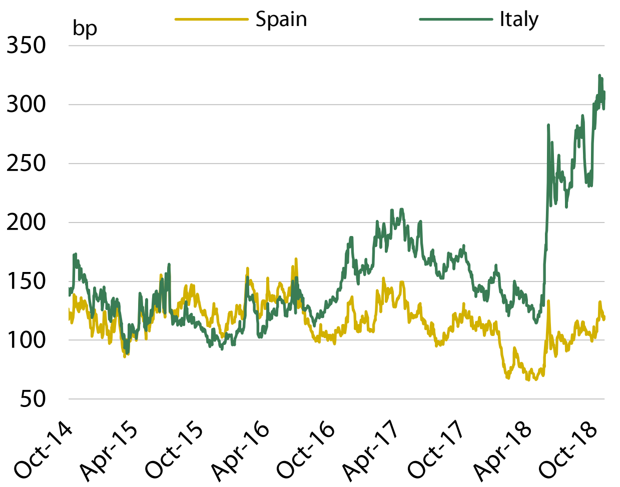


Figure 12: Private debt risk premium (5-year CDS)

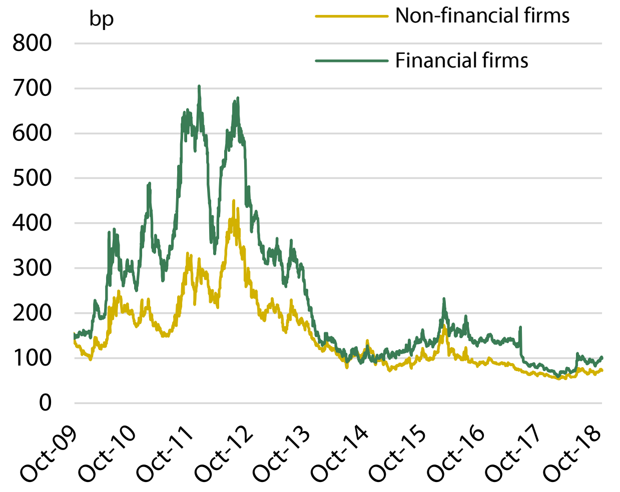


Figure 13: House prices (year-on-year change)

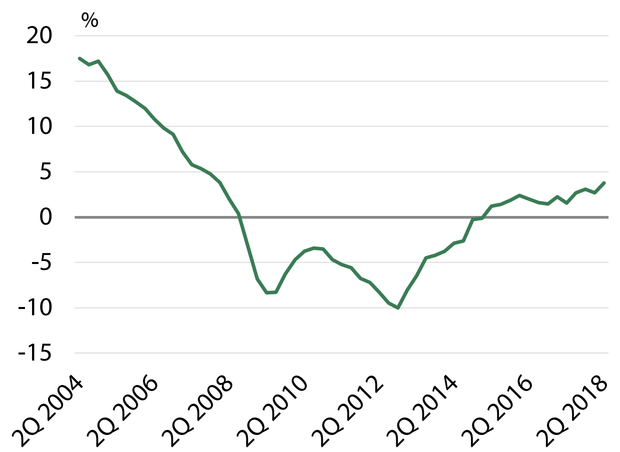
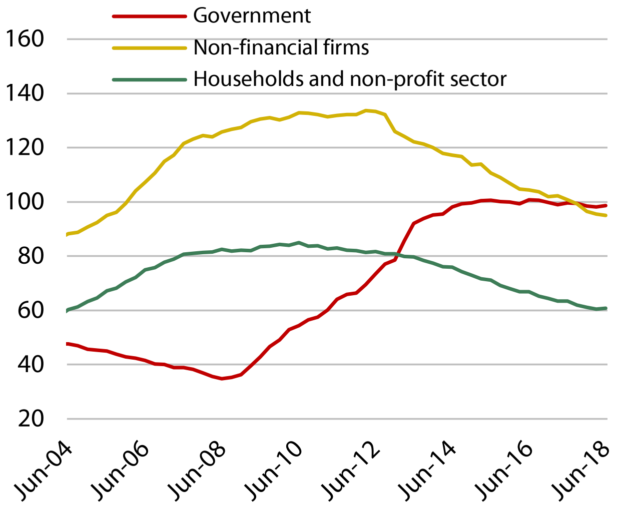
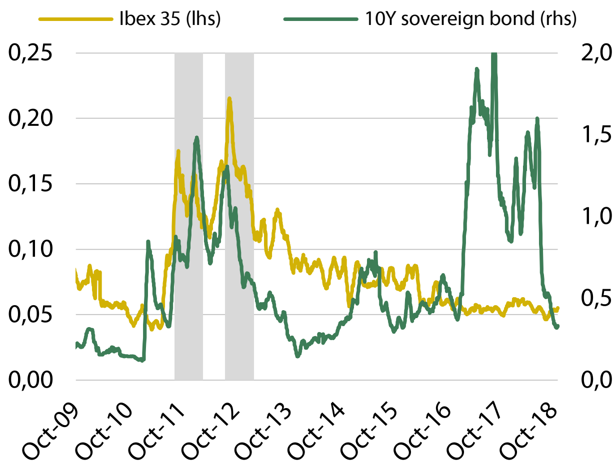


Figure 14: Borrowing (% GDP)



Liquidity, financing and fragmentation risk: green

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



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

Figure 16: Volatility (1m moving average)

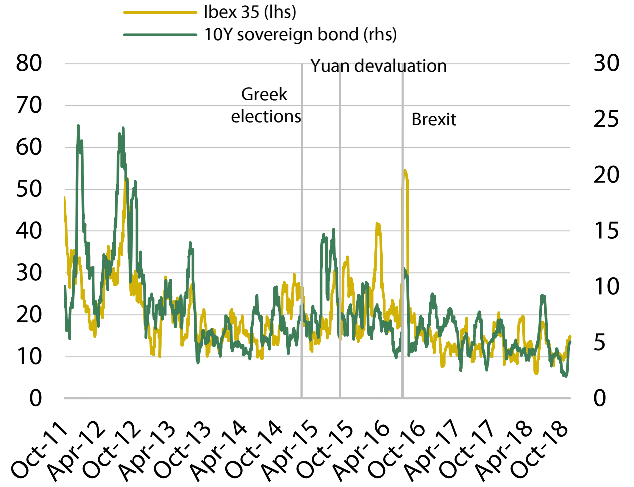


Figure 17: SIBE trading (1m moving average)

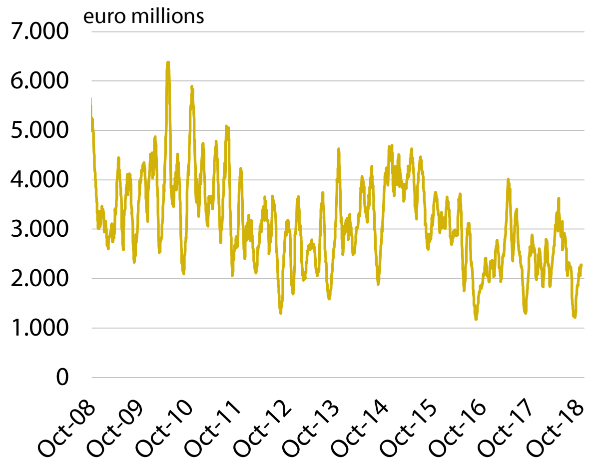


Figure 18: Interbank spread (LIBOR-OIS)

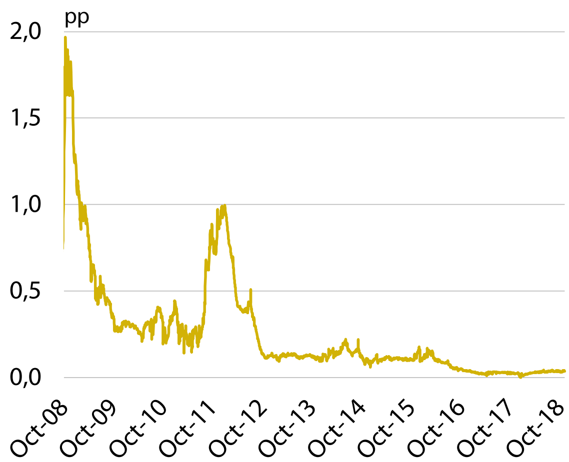


Figure 19: Spain-EU spread on corporate lending rates

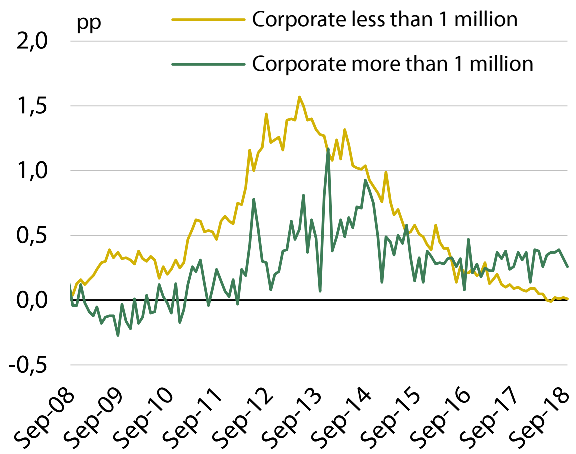
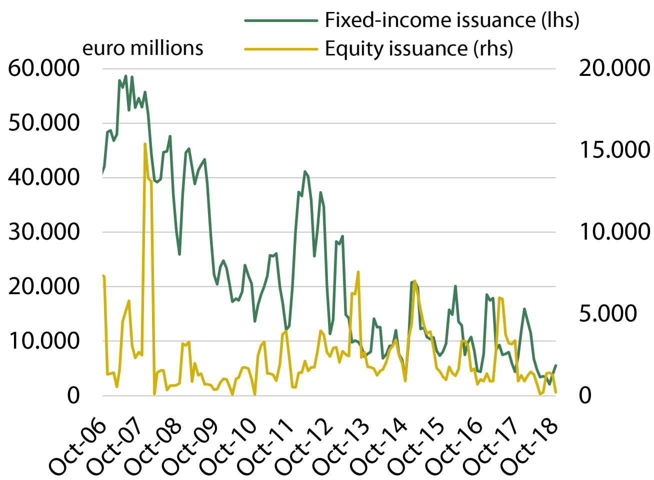


Figure 20: Issues (3m moving average)



Macro-economic risk: yellow

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

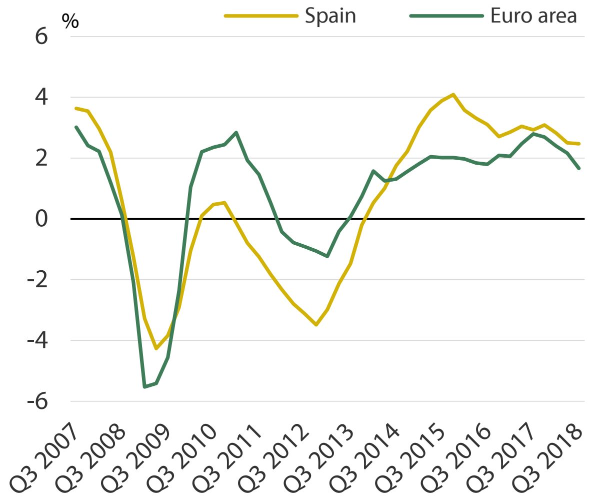


Figure 22: HCPI and core CPI (year-on-year change)

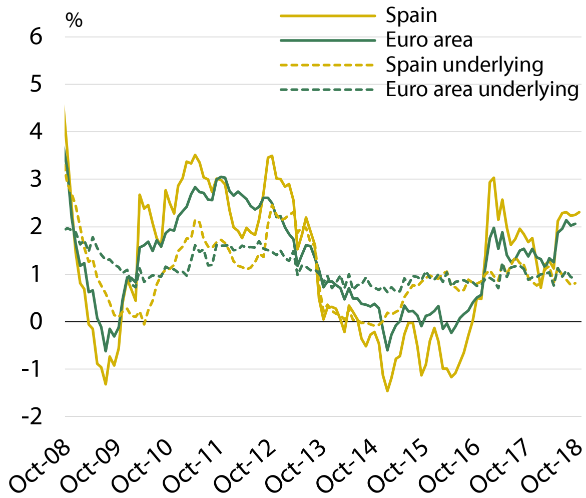


Figure 23: Employment (year-on-year change)

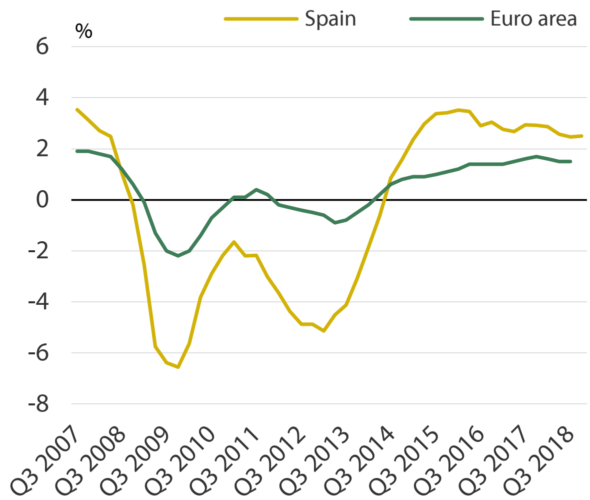
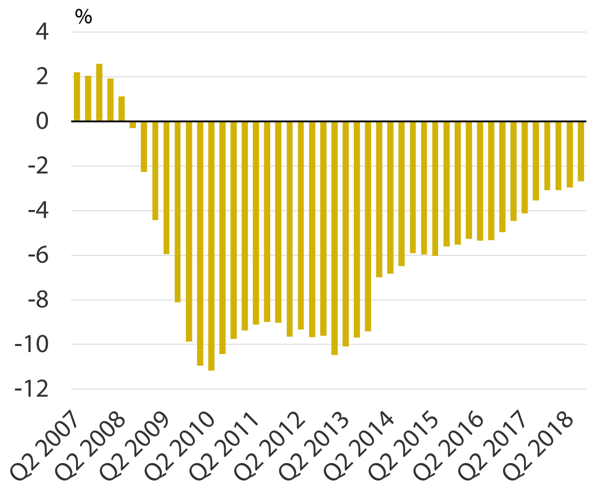


Figure 24: Government balance (% GDP)



Data accumulated over four quarters.

Figure 25: Exchange rates

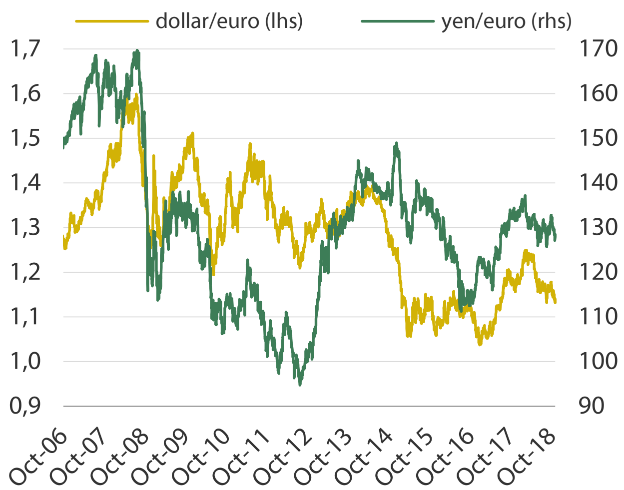
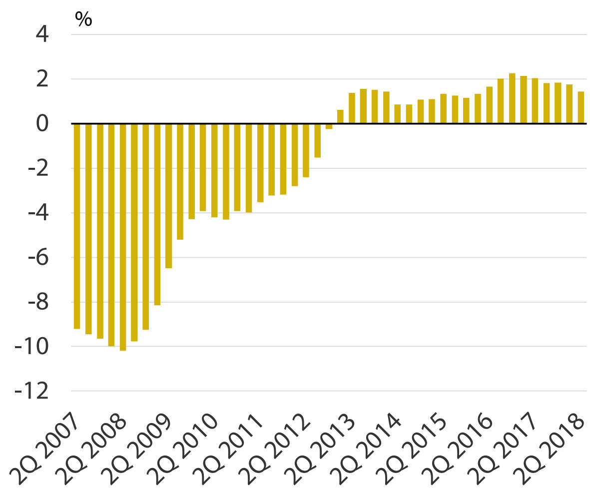
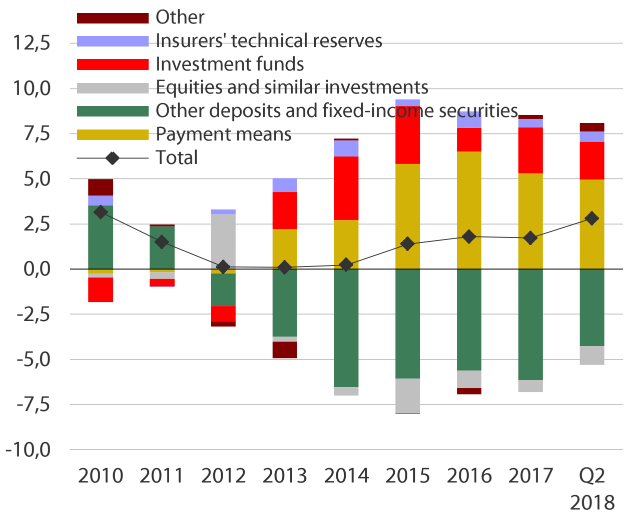


Figure 26: Current-account balance (% GDP)



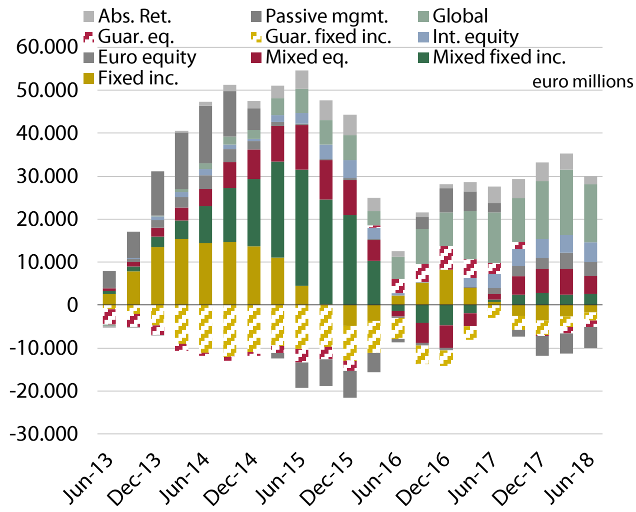
Investors

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: Bitcoin price and searches

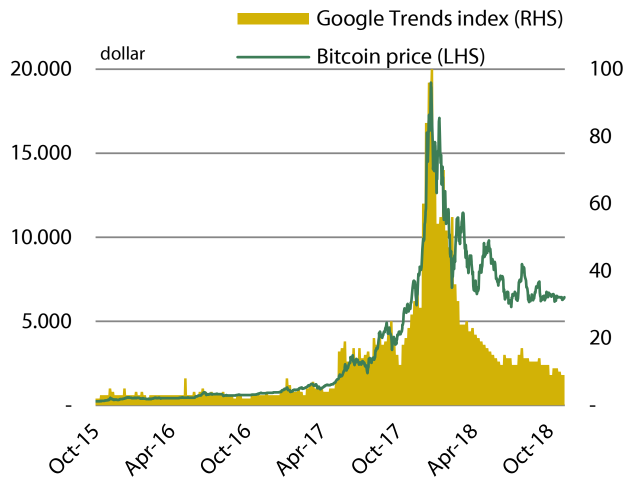
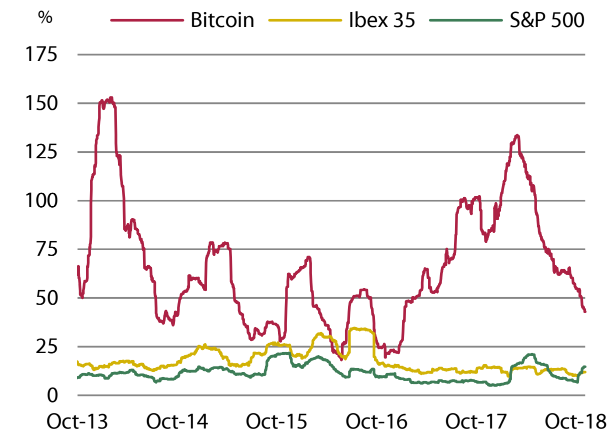


Figure 30: Bitcoin volatility



Contagion risk: yellow

Figure 31: Correlations between asset classes

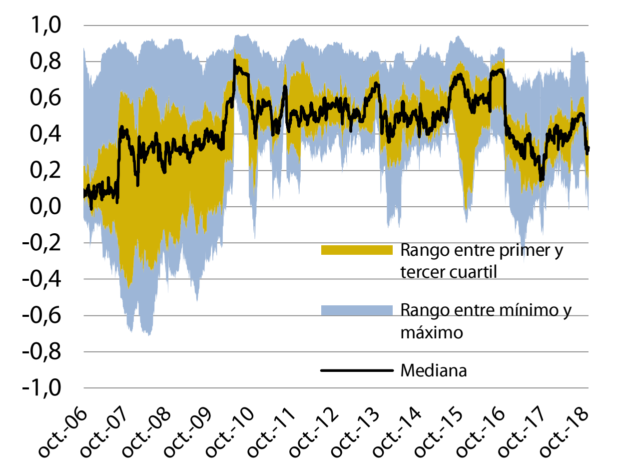
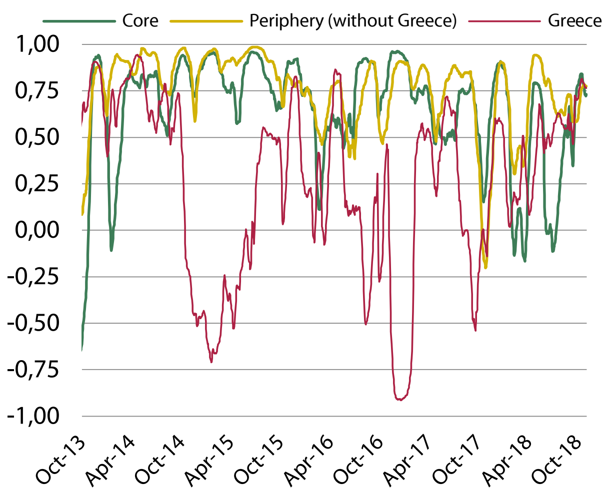
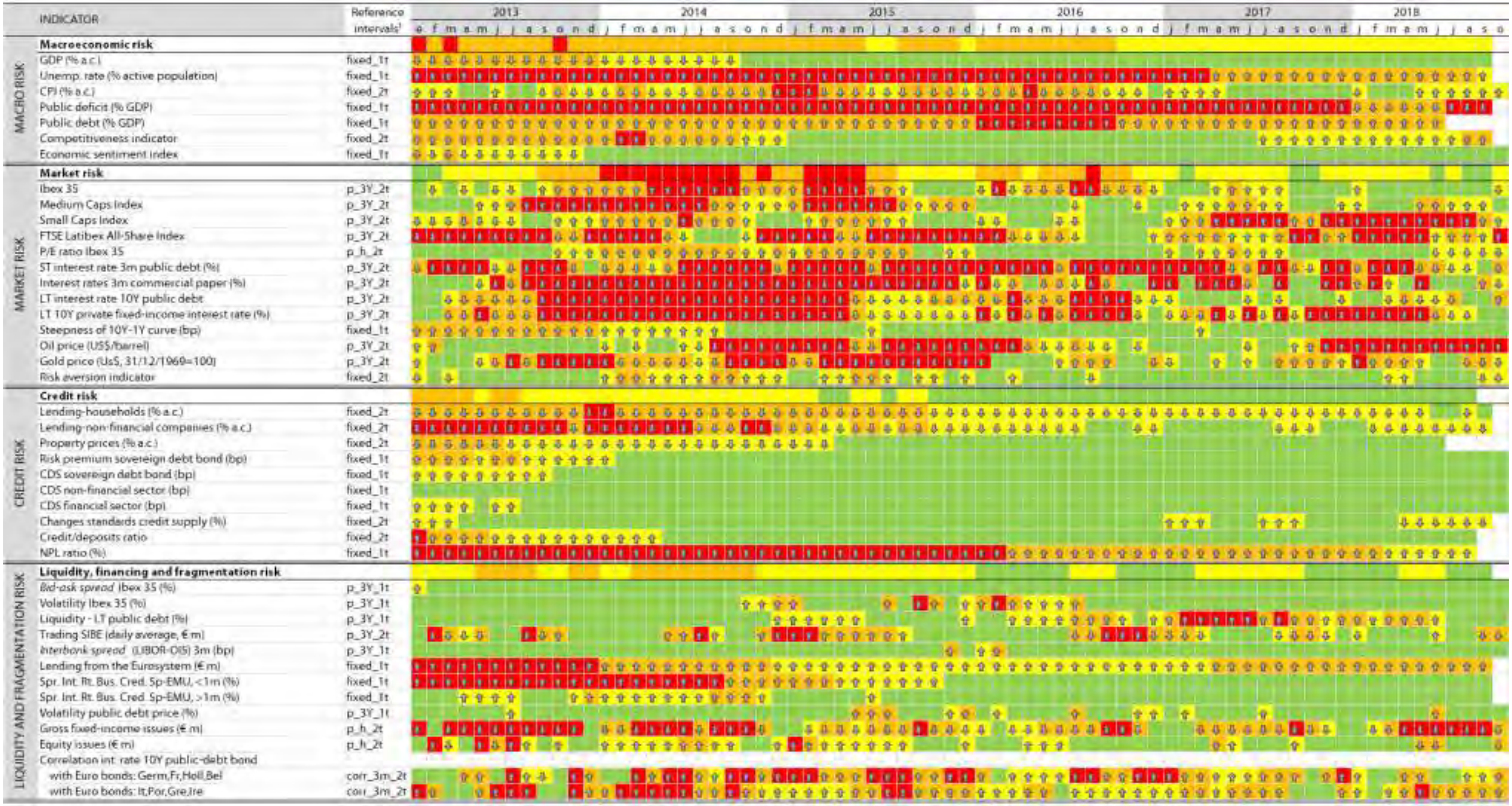


Figure 32: Correlation between the yield on the Spanish and European 10Y bonds



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[32], 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

[32] 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.

Short positions (Figure 3): The figure for aggregate net short positions includes the sum, to the reference date, of the individual positions declared (0.5% or higher), plus the total for positions of 0.2% or higher but lower than 0.5%. The series only reflects the positions declared at each date and is therefore not recalculated to take into account any later changes or exceptional inclusions of notifications of positions at a date previous to that of each aggregation.

Bitcoin price and searches (Figure 29): The Google Trends index reflects users’ interest in the Google search engine for a specific subject in a certain region and period. In this case, the index shows the term “bitcoin” globally from 2016 up to the reporting date of the Stability Note.

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.