CNMV
Comisión Nacional del Mercado de Valores

Financial Stability Note

No. 4 October 2017

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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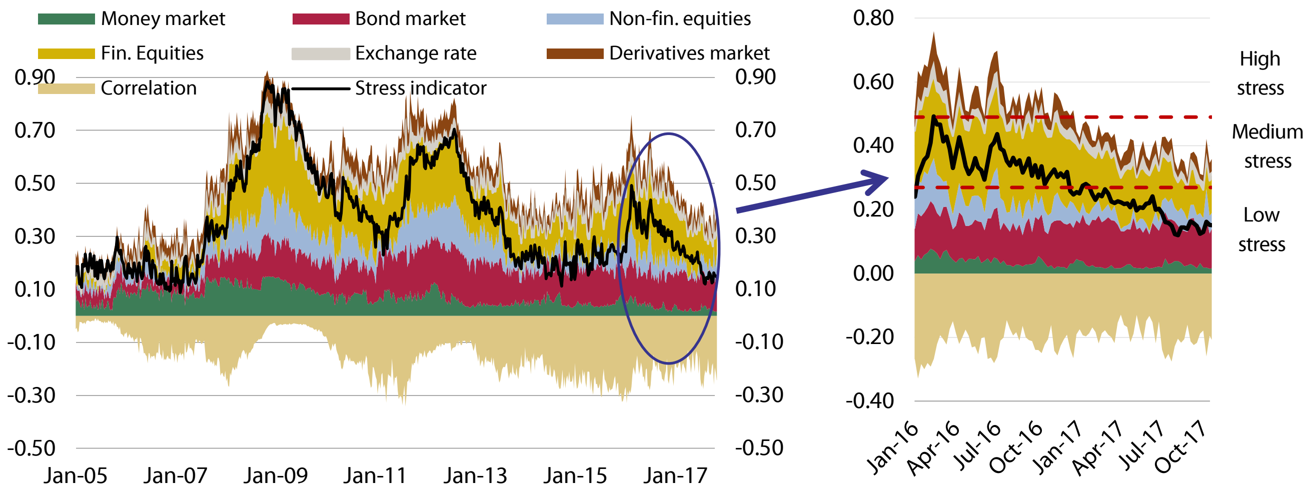
Summary

- ✓ Spanish financial market stress remained at minimum levels during the summer months as the markets showed signs of high stability and were unaffected by such factors as the still recent Banco Popular 'resolution' process or the terrorist attacks in Barcelona. In October[1] the index rose slightly, probably due to the political crisis in Catalonia, but the rise was of little importance, since the drop in share prices and the increase in volatility were not as serious as in previous crisis periods. For the time being, the highest stress level is to be found in the fixed-income segment due to rising volatility and worsening liquidity, and we can also see a slight increase in the stress level of the equity segment.

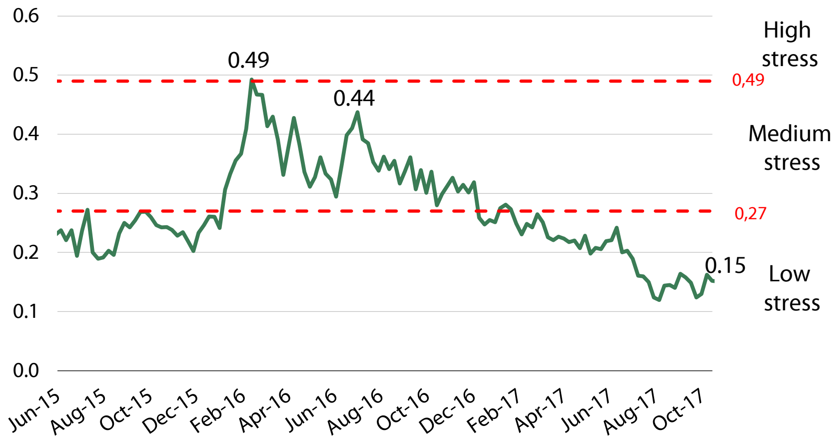
Spanish financial market stress index

FIGURE 1



Source: CNMV.

For more detailed information on the trend of this index and its components, see the CNMV's statistical series (Market Stress Indexes), available at http://www.cnmv.es/Portal/Publicaciones/SeriesWeb/Inicio.aspx?codrama=1295 . For further information about 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 Document no. 60 (http://www.cnmv.es/portal/Publicaciones/monografias.aspx).



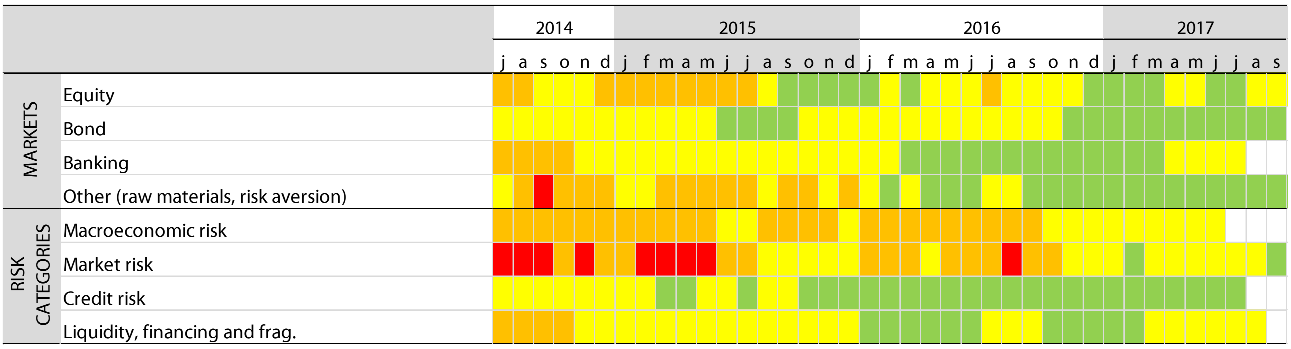
[1] This release was published with information to 6 October, except for certain information such as the stress index (with data to 13 October) and IMF forecasts.

- ✓ Although the financial system stress level has not suffered from any significant increase in recent weeks, we can see a divergent behaviour between the trend in national financial markets and that of other European markets, which evidences the increase in uncertainty related to home affairs. This uncertainty has also prompted an increase in the correlation between the prices of different types of Spanish assets. In this context, the Ibex 35 has posted a 1.4% drop since the beginning of September compared with the gains of between 2.4% and 6.7% of European indexes, and in the fixed-income markets the risk premium has grown slightly (to 122 bps), displaying a relatively worse performance than that of other European economies.

- ✓ The main risks facing the financial system are related to the possible loss of liquidity of some assets, especially in debt markets, and with the high price of a great many of them. The increasing price of financial assets was partly caused by the economic growth boom, by investors' desire to acquire more profitable products, and by ECB purchase programmes. However, heightened domestic uncertainties and the continuing uncertainties abroad may end up exerting downside pressure on these prices in the medium term. Other risks of a more structural nature are related to the steady offshoring of the issue and trading of Spanish securities abroad.

- ✓ In macroeconomic terms the Spanish economy continues to lead the euro area in GDP growth (3.1% in the second quarter versus 2.3% in the euro area) and in job creation. Dynamic business activity is enabling Spain to reduce its public deficit to a level that could stand at under 3% of GDP by the year end. The most recent estimates regarding business activity trends reveal that this will continue to grow strongly, at a faster rate than the euro area in the central scenario[2]. However, various prestigious institutions are saying that the institutional crisis in Catalonia has increased downside risks regarding these forecasts.

Heat map: Summary by market and risk category FIGURE 2



Source: CNMV. See article of the Quarterly Bulletin of the CNMV 1Q 2015. "Identification of vulnerabilities in the Spanish financial system: an application of heat maps".

[2] In October, the IMF forecast 3.1% growth this year and 2.5% in 2018, compared with 2.1% and 1.9% for the euro area.

Sources of risk

Macroeconomic environment

- The evolution of the Spanish economy continues to be positive. In the second quarter of the year, GDP grew by 0.9% compared with the previous quarter, three tenths more than in the euro area. In year-on-year terms, GDP grew by 3.1% and 2.3% respectively (Figure 21). Job creation is also increasing, up by 2.9% in the second quarter, which has reduced the unemployment rate to 17.2% (18.8% in the first quarter of the year). With regard to price trends, the advance CPI index puts inflation at third quarter-end at 1.8% year-on-year, two tenths higher than in August, mainly due to the increase in fresh food prices. Meanwhile, core CPI, which excludes fresh food and energy due to their high volatility, remained stable at 1.2%, the same rate as for the euro area (Figure 22).

- With regard to public sector finances, the latest budget execution figures show that the consolidated deficit (excluding local authorities) stood at 2.3% of GDP to July, eight tenths less than in the same period of 2016. The dynamic nature of the country's economic activity is enabling a gradual reduction in the deficit, which could end the year at close to 3%, in line with the forecasts included in the latest update of the Stability Programme for the period 2017-2020. Once Spain's public deficit falls below 3% of GDP, the European Council could allow Spain to leave the excessive deficit procedure that it has been subject to since 2009, as has happened in other European economies. Meanwhile government debt shrank by one tenth in the second quarter to 99.8% of GDP.

- Forecasts from other institutions, both national and international, confirm the good performance of the Spanish economy, with a consensus in growth expectation of 3.1% in 2017 (the same estimate as before the summer) and between 2.5% and 2.7% in 2018. However, there are factors which may put downward pressure on this growth. Some of these pressures are common to other European economies, such as those related to the banking sector and its difficulties in increasing profitability in the current interest rate scenario or in the context of the Brexit process. Others are specific, especially the challenges posed by the still high unemployment rate, the high levels of debt still held by some agents and, with growing importance, the uncertainty caused by the political crisis in Catalonia.

Context of low interest rates

- Interest rates remain at very low levels, as in the euro area, although there have been signs of a slight increase in recent weeks caused by domestic uncertainties. For example, at the beginning of October the return on 10-year sovereign bonds stood at 1.7% (1.5% at second quarter-end) and the return on three-month treasury bills was -0.39% compared with -

0.44% at month-end June. The risks giving rise to such low, even negative, interest rates are varied:

(i) Investors are finding it difficult to take investment decisions due to the shortage of high-return, low risk assets
(ii) Players with financing requirements may borrow under more favourable conditions, but some of them may end up over-leveraged
(iii) Banks are experiencing difficulties in increasing their interest income.

Later we will be setting out some of the most recent trends regarding investment decisions of households and the performance of the banking sector.

- With regard to households, during the middle months of the year trends remained unchanged; on the one hand to increase liquid positions and, on the other, to pursue higher returns by taking on greater risks. As has been happening since 2013, there has been a significant shift away from long-term deposits due to the low returns they offer, the reduction from January to August being 14.7% (8.2% between April and August). Conversely, the volume invested in sight deposits grew by 7.7% in the same period, while assets held in investment funds grew by 7.5%. In the case of the latter, and as has been happening since mid-2016, most money was invested in funds with a relatively high level of risk (equity or global funds), possibly due to the low return on more conservative funds. The strong expansion of the collective investment industry in recent years has meant that their key parameters are close to (or in some cases above) the levels seen prior to the crisis.

- The aforementioned environment of low interest rates, combined with the consolidation of other competitive forces still in their infancy (shadow banking, fintech, etc.), continues to hold back banking business development both in Spain and in the euro area. In the case of Spain, the environment is more favourable thanks to the consolidation of economic growth, which has caused the NPL rate to drop to 8.4% (Figure 10). However, the sector is not free from risks, as evidenced by the 'resolution' process of Banco Popular in early June or the decision of the most important institutions based in Catalonia to move their registered offices to other regions of the country due to the persisting uncertainty. Meanwhile, bank credit is showing signs of picking up at a localised level, but the overall balance is still conditioned by the deleveraging process of many players.

Sources of political uncertainty

- For the time being, the institutional crisis in Catalonia has had a limited impact on the financial markets, although their path has started to diverge from the trend seen in other reference European markets. The differential between the return on Spanish and German sovereign bonds has increased by 13 bps since the beginning of September, versus the 6 bps increase in the case of the Italian risk premium. Meanwhile, the Ibex 35 has retreated by 1.4%, compared with the gains made by the Euro Stoxx 50 and the French CAC 40 (4.6%) or the DAX 30 (6.7%). The increase in uncertainty has caused many corporations located in Catalonia to decide to change their registered office to other cities in Spain (see market risk). In the medium term, the prolongation of this crisis may have significant consequences on the markets and economic activity. For the markets it may cause a tightening of the financing conditions and a loss of confidence giving rise to falling prices and occasional outbreaks of volatility. The impact on economic activity is hard to quantify at this point in time, but there are some indicators that are already showing lowered earnings per share expectations of several listed companies in the next twelve months. In this scenario, some investment projects may be delayed or even cancelled.

- In the USA, the scope of the expansive fiscal policy announced by the US administration is still unknown and there is still the possibility that some of the proposed measures are not finally approved. Meanwhile, in terms of commercial policy a move towards the application of measures of a protectionist nature may have a negative impact on global growth in the medium and long term. There is still a risk, albeit smaller, that the normalisation process of the USA's monetary policy takes place faster than was expected, which could give rise to the price correction affecting fixed-income instruments worldwide.

- In Europe, Brexit continues to be one of the main sources of political risk for the financial and economic environment. Not enough progress has yet been made in the first round of negotiations, which could delay the start of the phase in which the transition period is agreed upon and the future relationship between the European Union (EU) and the UK is shaped. Although political risk has diminished after the elections in France and Germany, the elections to take place in Italy in the first half of 2018 are another source of uncertainty whose outcome will be relevant for political stability in the EU.

- Finally, there are still some geopolitical tensions between different powers and we cannot rule out the possibility of terrorist attacks on a global scale. Such events could have a significant impact on international financial markets.

Risk categories

Market risk: green

- The Ibex 35 has retreated by 2.5% since the middle of the year, although most of the losses were concentrated in the first week of October coinciding with the heightening of the political crisis in Catalonia. The index temporarily fell to below 10,000 points, its lowest level since March. This decline contrasts with the performance of the main European indexes, which gained close to or more than 5%[3]. In this period, the biggest share price drops were recorded by small and medium cap companies, plus the insurance, industrial, and textile sectors. Conversely, companies in the motorway operators and oil sectors appreciated in value, having benefited from the ongoing takeover of the largest motorway operator and the recovery of oil prices, respectively. Over the course of the year as a whole,

[3] From midyear (to 6 October) the main European market indexes rose by between 4.7% in the case of Euro Stoxx 50 and 8.8% in the case of the Italian MIB 30. The DAX 30 (Germany) and CAC 40 (France) indexes rose by 5.1% and 4.7%, respectively, in the same period.

the differences between the performance of the Ibex 35 and that of other European indexes persisted, although they were kept much smaller due to the good performance of the Spanish index in the first quarter.

- In addition to falling share prices, the political uncertainty originating in these weeks caused a large number of companies based in Catalonia, many of them listed, to decide to move their registered offices to other regions of Spain in order to protect the interests of their customers, shareholders and employees. This circumstance is especially important in the case of financial institutions (as evidenced by the decisions taken by Caixabank and Banco Sabadell) since by moving they ensured their permanence in the euro area (and, therefore, their access to ECB liquidity instruments) and reduced the risk of a run on deposits.

- The price/earnings ratio (PER) of the Ibex 35 diminished from 14.9 in mid-June to 13.9 in September (its historical average is 13.6) due to the combined effect of falling share prices and improved corporate earnings (Figure 4). The trend in the latter changed early in October, since we saw expected earnings per share fall for a number of Ibex 35 companies. Meanwhile, short positions fell once again to close to 0.7% of total market cap (Figure 3), reaching their lowest level since the first quarter of 2015. As in the previous quarter, the quantity of short positions in Día and, to a lesser extent, Técnicas Reunidas, continue to stand out.

- The most significant market risk continues to be in fixed-income assets, whose interest rates continue to stand at very low levels, although they have shown slight increases in recent weeks due to the rise in uncertainty[4]. Despite this small upward movement, there are factors that make us think that that any rate rises will not be significant in the short term. Among the most important of those factors are the slowdown of the US economy, the strengthening of the Euro exchange rate, and the easing of inflation in the euro area. In this latter region, corporate debt continues to benefit from the positive effect of the ECB debt purchase programmes[5], as evidenced by the intense issuing activity of these securities. However, the prospect of the ECB making further cuts to the amount and scope of these programmes remains on the horizon. Meanwhile, the volume of Spanish government debt acquired by the ECB amounted to 212.3 billion euros[6] in early October.

Credit risk: green

- The risk premiums of Spanish issuers in the private sector have performed positively since halfway through the year, for both large non-financial companies and financial institutions, although the initial reductions have been curtailed by the political crisis in Catalonia. Even

[4] The performance of 10-year Spanish government debt has increased by 15 bps since midyear against rates in Germany and Italy which have scarcely changed. Meanwhile, yields in France and Portugal dropped by 8 and 60 bps, respectively, in the same period.
[5] To 6 October, the ECB had acquired European corporate debt in the amount of 116.44 billion euros, including securities of 15 Spanish issuers, of which 14.9% was acquired in the primary market.
[6] This figure represents 25.7% of the balance of long-term government debt securities.

so, at the beginning of October these risk premiums reached their lowest level since 2008, at an average of 84 bps in the financial sector and 65 bps for non-financial companies (Figure 12). Conversely, the risk premium on sovereign bonds (calculated as the difference between the return on 10-year bonds in Spain and Germany) was affected by this period of uncertainty and climbed to 121 bps (Figure 11), distancing itself from the annual lows recorded in July (95 bps) and the performance of its European counterparts.

- The outstanding household debt balance has recorded a slightly negative annual change rate throughout the year, while loans to companies, which had posted the first positive figures in many years between March and May, later slipped back into negative territory. In the case of household borrowing, the drop in the total debt balance (-1.1% year-on-year in August) is explained by the reduction in mortgage loans (-2.8%) and the increase in consumer credit (4.6%). In the case of companies (-0.9% in August), the expansion of economic activity means that some companies are starting to resort to this source of financing, but the general trend is for companies to be deleveraging themselves. Furthermore, larger companies continue to replace part of their traditional bank financing with issues of corporate debt. The balance of external borrowing has also started to drop for some months now.

Liquidity risk, financing and fragmentation: yellow

- Fixed-income issues recorded by the CNMV totalled 13.15 billion euros in the third quarter, a similar figure to the one in the same period of 2016, the highlight being an issue of 1 billion euros of contingent redeemable perpetual bonds. In the year as a whole, these issues totalled 61.62 billion euros, 26% less than in 2016, in contrast to the trend shown by Spanish companies' fixed-income issues abroad, which increased by 33.5% to August (51.5 billion euros). By asset type, only issues of simple bonds increased (up by 26% in 2017 to 17.37 billion euros), favoured by ECB purchase programmes. In the stock markets, we would highlight the capital increase with preferential subscription rights of the Banco Santander of over 7.1 billion euros, the largest capital increase of this type by a Spanish financial institution in recent years.

- Average daily trading in the Spanish continuous market continued to grow, by 11% year-on-year in the third quarter to 2.04 billion euros (Figure 17). As tends to be the norm for data referring to the summer months, the trading volume in the third quarter is lower than in the previous quarters (2.41 and 3.29 billion respectively) and lower than the cumulative average in 2017 (2.55 billion). Trading of Spanish securities in markets other than domestic markets has been increasing this year; in the third quarter it accounted for close to 35% of all trading subject to market rules or MTF (lit plus dark).

- The liquidity indicators of the Ibex 35 (measured by the bid-ask spread) remained stable and at satisfactory levels in the third quarter of the year. In the case of the spread of the 10-year sovereign debt bond there was a slight drop in liquidity, but the differential value continues to be high in historical terms.

- Interest rate differentials between loans to companies in the euro area and in Spain remain stable for loans of less than a million euros (at 10 bps) and have shrunk slightly in the case of larger loans (down to 26 bps).

Contagion risk: yellow

- The levels of correlation between the prices of the different classes of Spanish financial assets, which had remained stable during the middle months of the year, increased across the board in the first week of October after the growing tension caused by the institutional crisis in Catalonia (see Figure 29). The median correlation value rose to 0.29 (0.17 at month-end September). Minimum and maximum values increased in a similar manner. However, it should be noted that, despite this recent rise, the median correlation value continues to be at its lowest level since 2009. When these correlations are lower, investors can more easily reduce the risk of their portfolios through greater diversification.

- The correlation between the return on Spanish government debt and that of the rest of Europe diminished considerably in September after having remained stable during the middle months of the year (see Figure 30). In general, the divergence of the return on Spanish sovereign bonds from that of the rest of Europe is the result of the impact of domestic uncertainties. In particular, the correlation between the return on Spanish sovereign bonds and that of the core countries, which at month-end August stood in the region of 0.8, fell to 0.4 in the first week of October. The drop in correlation in the case of the peripheral economies (excluding Greece) was even more pronounced, falling to 0.2 in the same period (0.85 in August), after reflecting the effect of the improved rating of Portuguese government debt by a major credit rating agency.

Market risk: Green level

Figure 3: Short sales

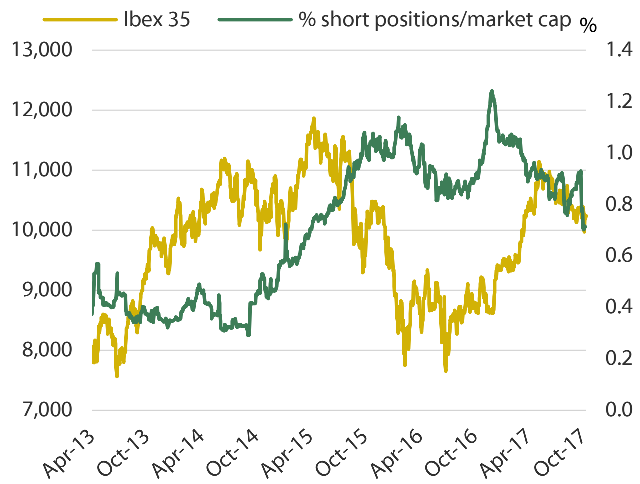


figure 4: Price/earnings ratio (PER)

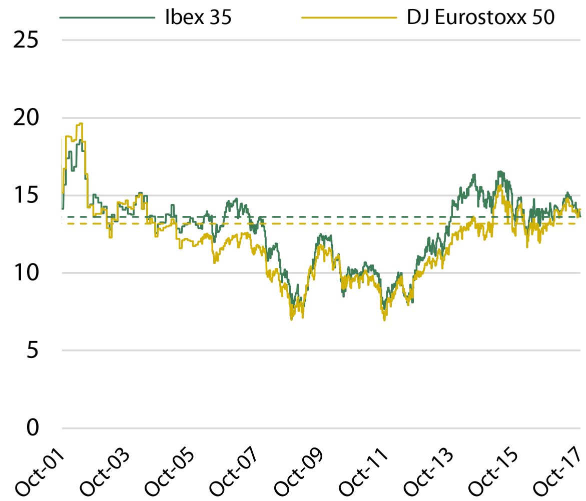


Figure 5: Short-term interest rates (3m)

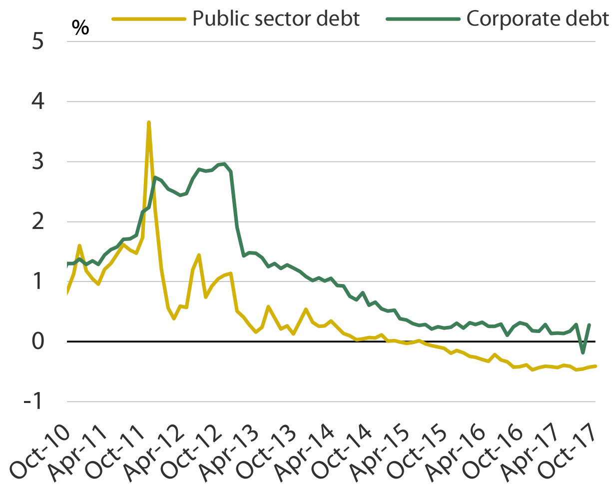


Figure 6: Long-term interest rates (10y)

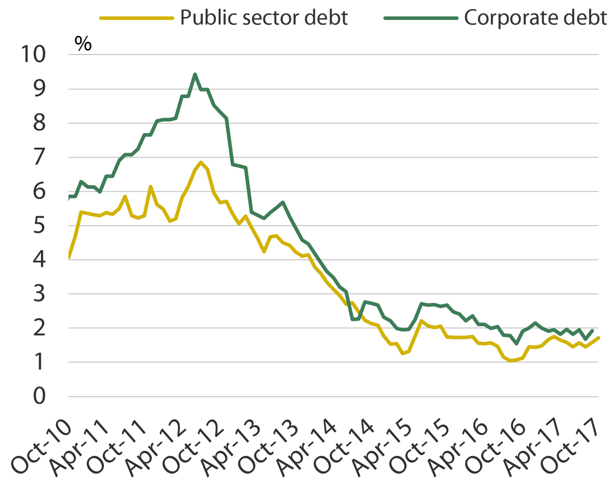
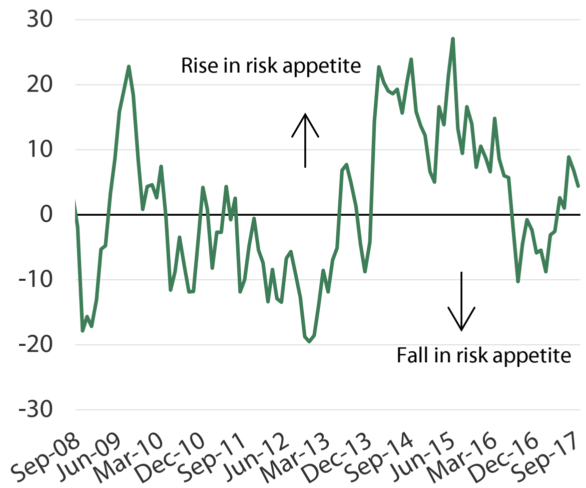


Figure 7: Oil prices

Figure 8: Risk appetite (State Street)



Credit risk: Green level

Figure 9: Non-financial firms

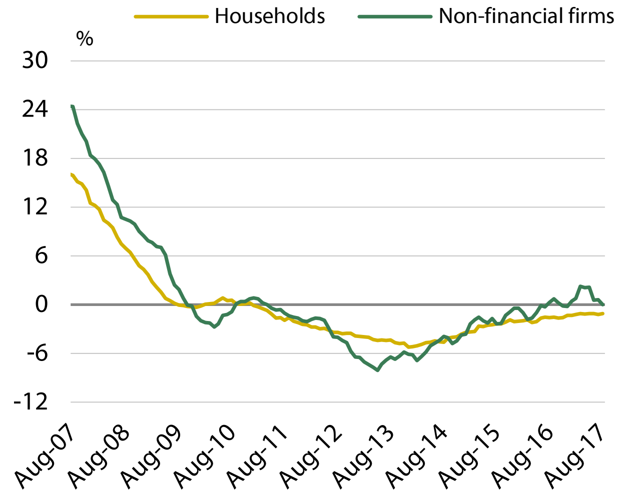


Figure 10: NPL rates and unemployment rate

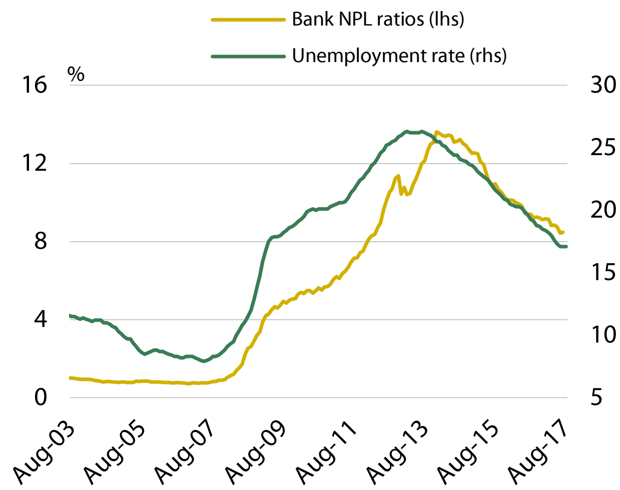


Figure 11: 10-year government debt risk premium (rate differential with Germany)

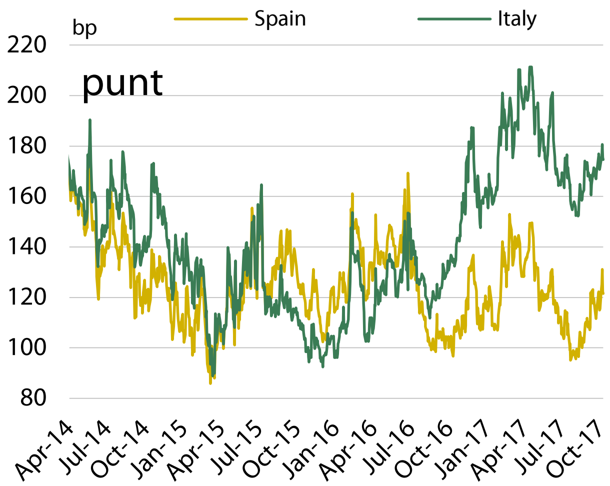


Figure 12: Private debt risk premium (5-year CDS)

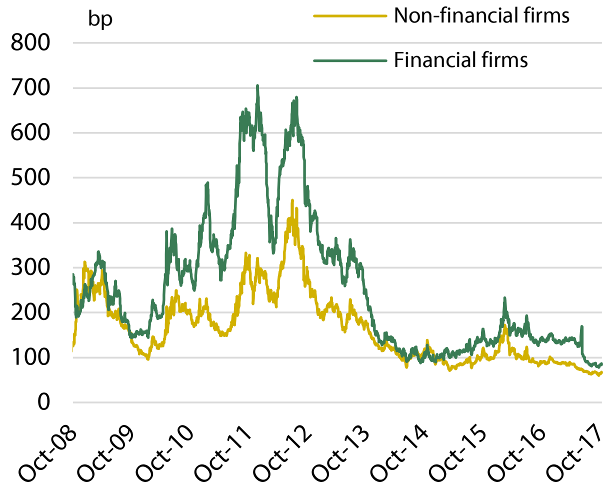


Figure 13: House prices (year-on-year var.)

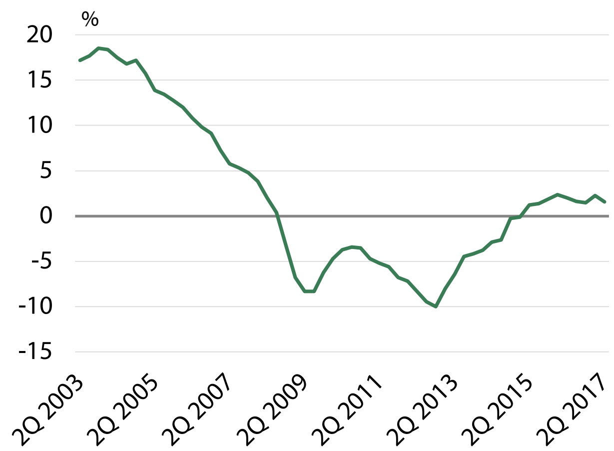
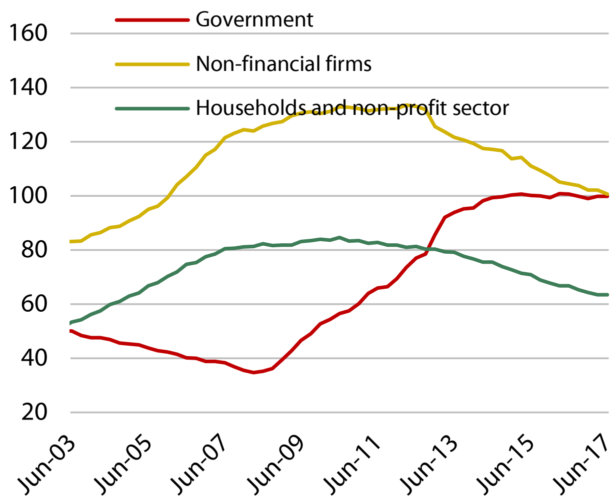
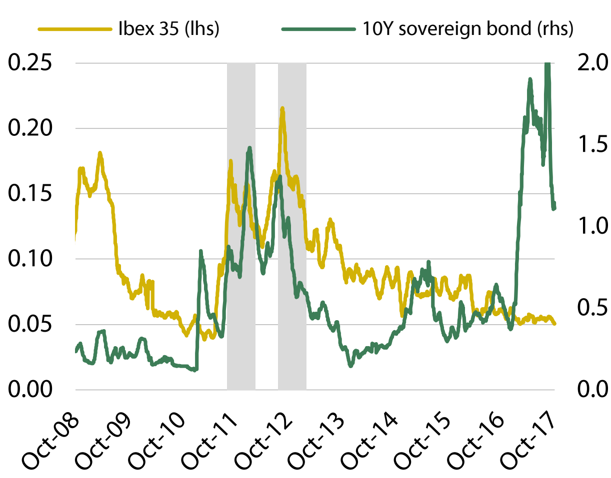


Figure 14: Borrowing (% GDP)



Liquidity risk, financing and fragmentation: Yellow level

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



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

Figure 16: Volatility (moving average 1m)

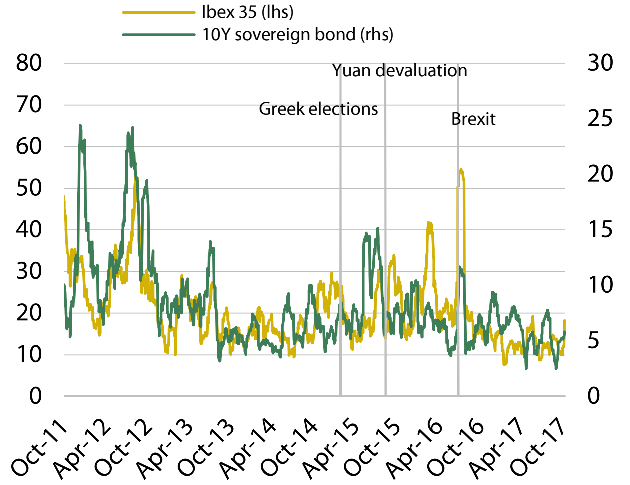


Figure 17: SIBE trading (moving average 1m)

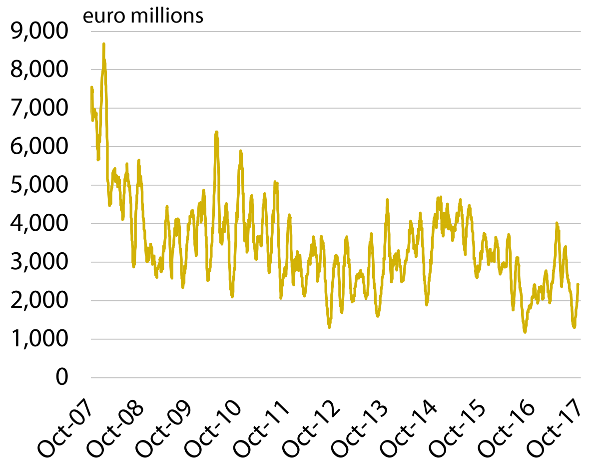


Figure 18: Interbank spread (LIBOR-OIS)

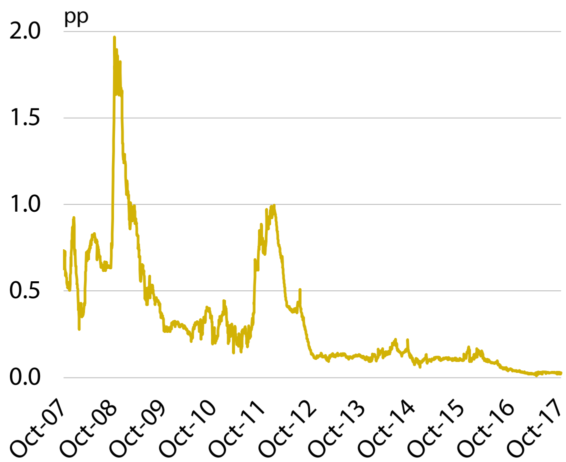


Figure 19: Differential (Sp-EMU) loan interest rates companies

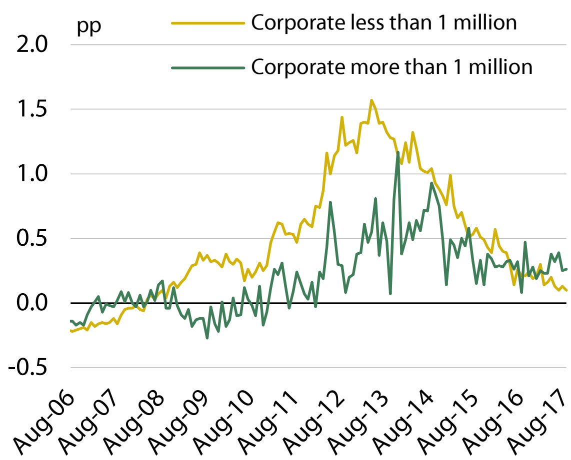
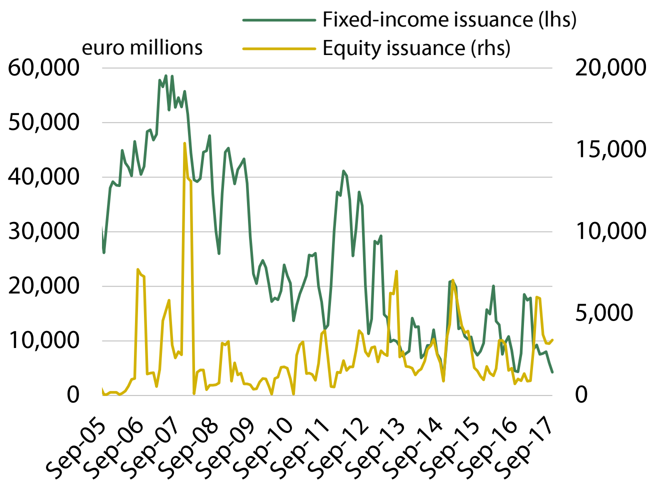


Figure 20: Issues (moving average 3m)



Macroeconomic risk: Yellow level

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

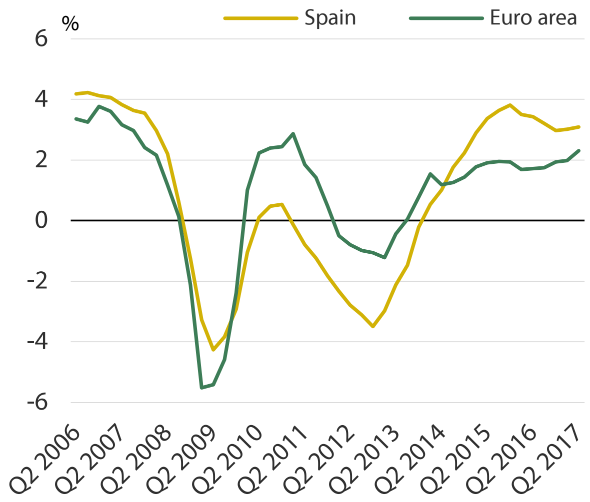


Figure 22: HCPI and core CPI (year-on-year variation)

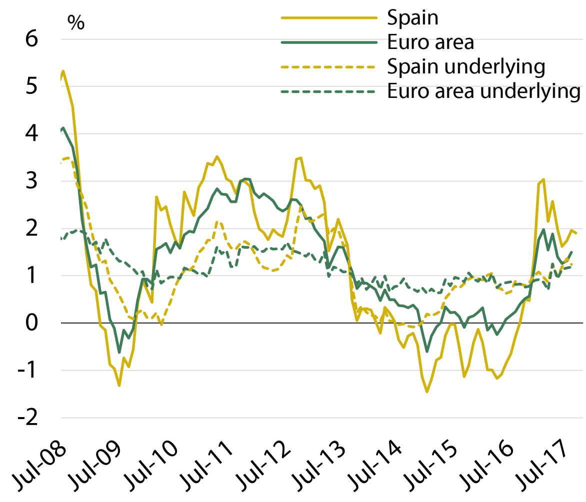


Figure 23: Employment (year-on-year variation)

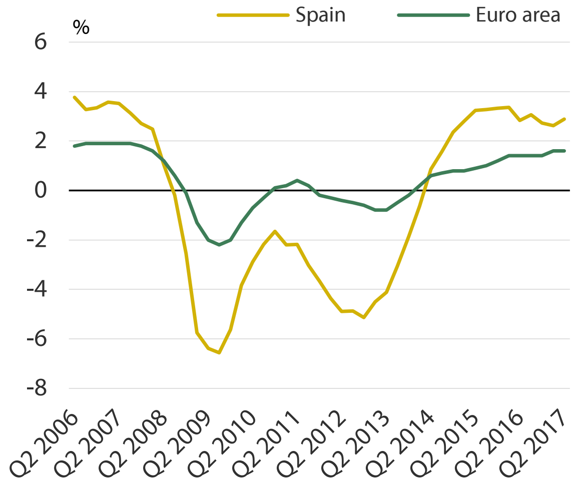
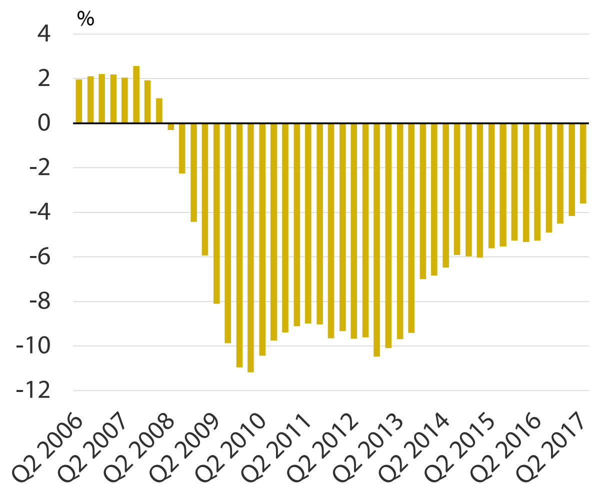


Figure 24: Government balance (% GDP)



Cumulative data, 4 quarters.

Figure 25: Exchange rates

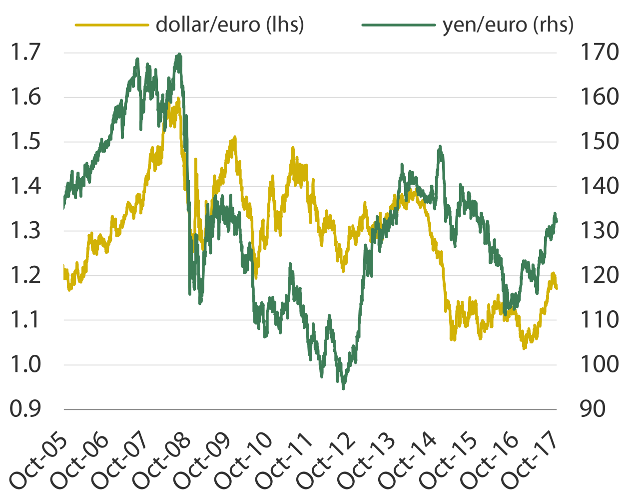
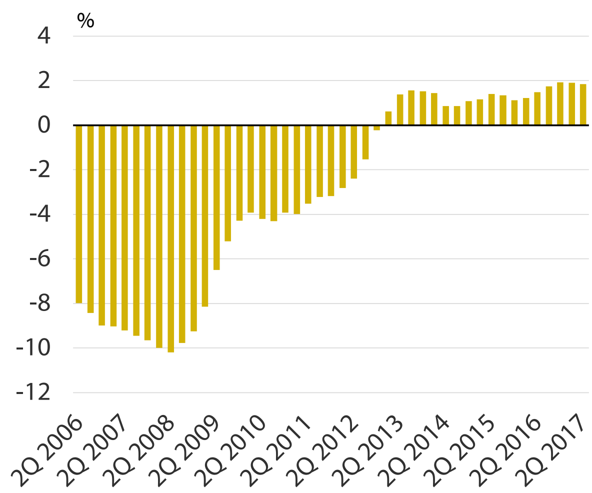
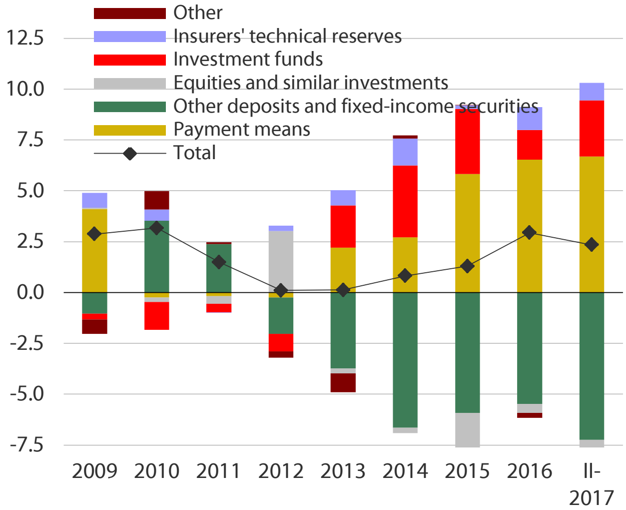


Figure 26: Current account balance (% GDP)



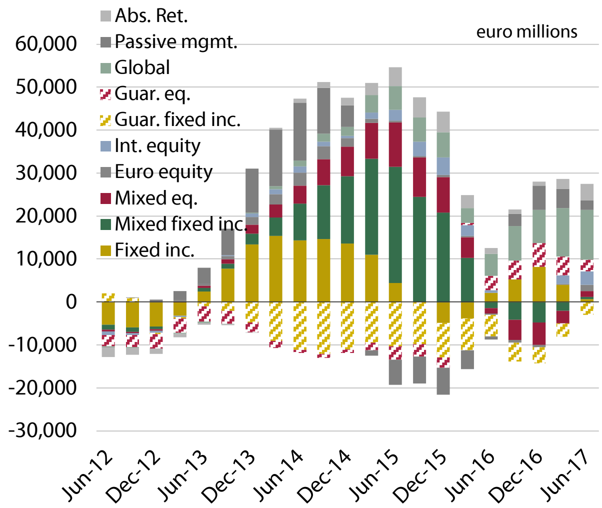
Investors

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



Cumulative data, 4 quarters.

Figure 28: Net subscriptions in FI



Cumulative data, 4 quarters (million euros).

Contagion risk: Yellow

Figure 29: Correlations between asset classes

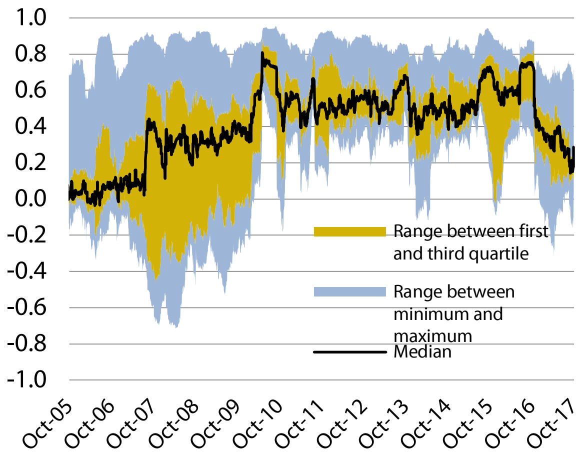
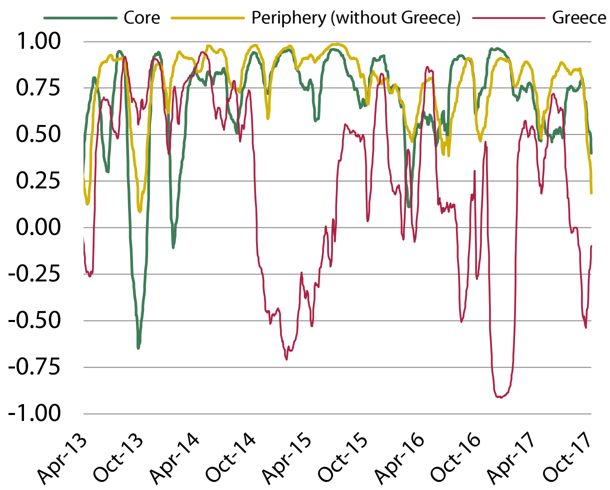
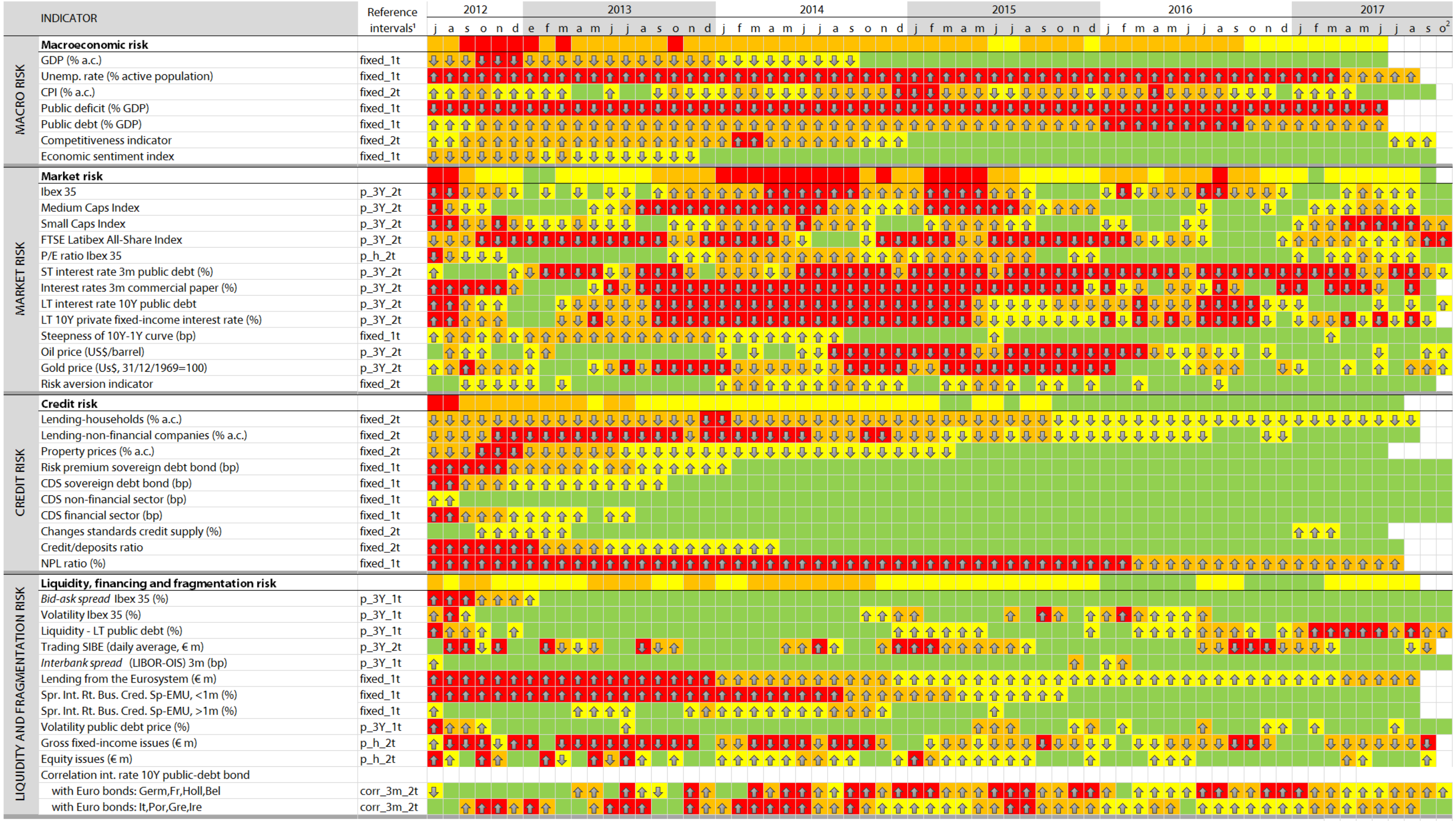


Figure 30: Correlation between return on Sp and other European 10y bonds



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. (2) Data until October 6th. Source: CNMV, Bloomberg and Thomson Datastream.

Explanatory notes

Spanish financial market stress index (Figure 1): The stress index provides a measurement in real time of the systemic risk facing the Spanish financial system, which ranges 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, while 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 more detailed information on the recent trend of this index and its components, see the CNMV statistical series (Market Stress Indexes), available at http://www.cnmv.es/portal/Menu/Publicaciones-Estadisticas-Investigacion.aspx. For further information about 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 Document no. 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 macroeconomic 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 of time 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[7], 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

[7] Since June 2017 the heat map has included an additional indicator - the bid-ask spread for the 10-year sovereign debt bond.

comprise. In each aggregate, one of the individual indicators determines the generation of the overall colour: for example, in macroeconomic risk, the indicator used to calculate the aggregate is GDP. This means that until this is published, the macroeconomic 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 and lower than 0.5 %. The series only reflects the positions declared at each date and therefore is 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.

Contagion risk: The indicators making up this block are of a somewhat greater complexity. We set out the most important of these indicators below:

- Correlation between asset classes (Figure 29). 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 return of the Spanish and other European 10-year bonds (Figure 30). 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.